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PLENARY LECTURE 1 | 17.30 - 19.00 | WEDNESDAY 29TH AUGUST

BESIDE THE OCEAN OF ENERGY FUTURE TIME

Laura Watts, University of Edinburgh
Charles Wilson Lecture Theatre

The barnacle-encrusted blade of the tide energy generator points to the northern sky. This great whale of an energy machine sits on the dockside, out-performed by newer siblings at sea. It is a future archaeology, the remnants of an energy transition already made. They generate over 140% of their own renewable energy, here. I walk on islands with secondhand electric cars plying the roads, hydrogen fuel carried over the waves, and an old smart grid that is old news. I walk with people who talk casually about their own wind turbines, and about the power that roars through their landscape. Welcome to the Orkney islands, off the northeast Scottish coast, a place that has been a technological testbed for six thousand years, since the Neolithic and its stone circles; a place that is quietly going on together for another six millennia, into energy futures we can only speculate. Drawing on a decade of ethnographic collaboration, I invite you to walk with me, beside this ocean of energy future time.

Laura Watts is a Writer, Poet, and ethnographer of futures in Institute of Geography at University of Edinburgh. As a scholar she works at the intersection of Science & Technology Studies (STS) and Anthropology.

She asks, "how is the future imagined and made in tech industries? And how might landscapes and writing *at the edge* make that future otherwise?"

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PANEL SESSIONS 1 | 09.00 - 10.15 | THURSDAY 30TH AUGUST

1A. THE GLOBAL PETROLEUMSCAPE

Charles Wilson Lecture Theatre

Session Organiser: *Carola Hein*

The built environment--architecture and urban form--both serves the physical and financial flows of the oil industry and, in part through its representations, carries cultural meaning. Studying these global flows, their spatial impact and their representation in advertisement, art and architecture, provides novel insights for historical analysis of the built environment and for future planning. The papers in this session explore the impact of oil's flows and networks on built urban spaces and their representations, identifying different layers and types that combine into a *palimpsestic petroleumscape* (Hein). The project analyzes the production of oil modernity through the lens of petroleumscapes in Asia, specifically, China, Russia, Japan and Indonesia. It asks how the physical spaces of production and reproduction (spatial practice), the knowledge, meaning, and ideology of oil (representation of space) and the lived everyday experience of inhabitants, users, and artists (representational space) interconnect in local oil modernity and compare globally.

OIL SPACES: THE GLOBAL PETROLEUMSCAPE IN THE ROTTERDAM/THE HAGUE AREA

Carola Hein

This paper explores the ways in which corporate and public actors have inserted the physical and financial flows of petroleum into the built environment, connecting the power of private investment to the force of public planning. It identifies different layers--both visible and invisible, physical and depicted--that combine into a *palimpsestic global petroleumscape*. It argues that the spatial presence of petroleum structures and the close collaboration of relevant actors has created path dependencies that reinforce the petroleumscape. It further posits that the everyday use, representation, and mostly positive appreciation of petroleum-related structures among citizens of different classes, races, cultures, genders, and ages has created a feedback loop or an energy culture that helps maintain the buildings and urban forms needed for physical and financial oil flows and celebrates oil as a heroic cultural agent – thus leading societies to consume more oil. Following a general analysis of the concept of the petroleumscape, the article uses the Rotterdam/Den Haag area, part of the North West European petroleum hub, as a case study. In appreciating the power and extent of oil can we engage with the complex challenges of sustainable design and policymaking, develop heritage concepts, and imagine future built environments beyond oil.

Carola Hein is Professor and Head, History of Architecture and Urban Planning Chair at Delft University of Technology. She has published widely in the field of architectural, urban and planning history and has tied historical analysis to contemporary development. Among other major grants, she received a Guggenheim Fellowship to pursue research on *The Global Architecture of Oil*. Her current research interests include the transmission of architectural and urban ideas, focusing specifically on port cities and the global architecture of oil. She has curated *Oildam: Rotterdam in the oil era 1862-2016* at Museum Rotterdam.

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A CHANGE IN ENVIRONMENTAL AND SOCIAL MINDSETS? GLOBAL FLOWS, OIL, AND DATA

Diogo Pereira Henriques

For over a decade both in research and industry in distinct scientific fields, several scholars have tried to establish an analogy between data and oil. And it is certainly true that the most economically valuable companies nowadays include corporations related to data extraction, while ten years ago the most economically valuable companies included corporations related to fossil fuel extraction. Nonetheless, when comparing these two

major global flows (i.e. oil and data) from the perspectives of humanities and social sciences nowadays, they may be seen as different. Moreover, in order to find ways to overcome the spaces and imaginaries of oil (Hein, forthcoming), perhaps we should consider relating oil and data as a false analogy. Can data be seen as the new oil, within a future beyond fossil fuels? Can the availability and flow of open data for international research networks allow a real change in environmental and social mindsets? In this presentation, we reflect on the much needed change in environmental and social mindsets from corporations, governments and universities at a global scale, when faced with unprecedented international consensus on the need to transition from fossil fuels within the next few decades heralded by the 2016 Paris Climate Agreement. We argue that novel solutions may only arise through new ways of thinking, open data sets, international collaborations and research networks, and the development of a new digital humanism for the 21st century.

Hein C (Ed) *The Global Petroleumscape: Multidisciplinary Perspectives on the Spaces and Imaginaries of Oil and Ways to Overcome it*.

Diogo Pereira Henriques is currently a full-time funded Doctoral researcher (Northumbria University/EPSRC), and previously also a senior research assistant at the Faculty of Engineering & Environment, Northumbria University at Newcastle (UK), working for the UK Government Office for Science/Future of Cities Foresight Project. He has studied and worked for internationally recognized universities and award-winning practices in the fields of urbanism, architecture, design, software, research and higher education in Europe (Lisbon, Barcelona, Rome and Eindhoven), through multiple languages, within international environments and multicultural and diverse teams. He is a lifelong learner, creative thinker, complex problem solver, and interested in interdisciplinary research and teaching: futures and urban studies, theory and history of architecture, community engagement, open data, visualization, design, machine learning, creativity, climate change, and international networks.

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'DELICATE GROUND': OIL TERRITORIALITY IN THE BRITISH TRUCIAL STATES

Stephen J. Ramos

Over the century-and-a-half preceding the United Arab Emirates federation, the historical, socio-cultural, and political meanings of territory change from tribal, nomadic, subsistence culture fluidly moving among wells and grazing lands for husbandry, to coastal encounters of land-sea interface, through a stricter territorial definition for oil speculation and concession leases, to a territory fundamentally defined by oil production. During this period, British strategic territorial concerns widen, from open maritime trade routes to then include coastal and hinterland territories for their oil potential, once it was discovered in other parts of the region. British oil concession negotiations were conducted through the ruling sheikhs of each Trucial State in 1922, which gave them a clear power endorsement and ruling advantage over other potential pretenders to their ruling position. The results of British endorsement codified the town, where the rulers resided, as the centre of power over surrounding territories, and served as historic precedent for federation in 1971 as an essentially urbanizing project.

Beginning with the “people-centred” tribal codes of territory, I review the British presence in the Gulf region beginning in the early 17th century to show regional precedent for twentieth century British land interests. I then concentrate on the post-World War II regional circumstances, exploring both the Buraimi incident and Julian Walker’s survey campaign as fundamental expressions of a British intervention in pursuit of a series of territorial interests that could no longer be handled “indirectly.” Finally, I consider infrastructure—in its various expressions—as responsive mechanisms to harness the productive power of territory, deployed by the changing power structures of the region.

KEYWORDS oil territory, territoriality, infrastructure, urbanization, Trucial States

Stephen J. Ramos is an Associate Professor in Urban Planning and Design at the University of Georgia College of Environment and Design. Stephen holds a Doctor of Design degree from the Harvard Graduate School of Design. His writing has appeared in the *Harvard Design Magazine*, *Footprint*, *Volume*, *Journal for Transport Geography*, *Planning Perspectives*, and the *Journal of Urban History*. He is author of *Dubai Amplified: The Engineering of a Port Geography* (Ashgate, 2010), and co-editor of *Infrastructure Sustainability and Design* (Routledge 2012). He is a founding editor of the journal *New Geographies*, and editor-in-chief of *New Geographies Volume 1: After Zero* (Harvard University Press, 2009). His professional practice includes work with the Fundación Metrópoli in Madrid, the International Society of City and Regional Planners in The Hague, and NGO work throughout Latin America.

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PLANNING DAQING-DALIAN OIL CLUSTERS: TOWARDS THE SUSTAINABLE FUTURE: THE DECLINE OF SPATIAL REPRESENTATIONS IN DAQING SINCE THE 1990S

Penglin Zhu

Since its discovery in the early-1960s, Daqing has been propagandized as the national model for the severe built environment and heroic oil workers. Many of the spatial representations showing the urban and rural forms, architectures, and lifestyles, were created mainly by state-employed professionals, including visual artists (painters and photographers), urban planners and architects. Before the Chinese Economic Reforms (1980s), such spatial representations were substantial. It was easy to distinguish the figure of Daqing and its people through numerous social medias and academic textbooks. However, after the 1990s, the development of the spatial representations started to decline. Only the state-employed artists have produced the visual creations for specific events such as the 50 years anniversary of the discovery of Daqing, while others have rarely included Daqing and its people in creations. Moreover, the current spatial representations made by the visual artists are still presenting the built environment between 1960s and early 1990s. The new changes in the built environment and people's lifestyle that occurred after the 1990s have not been presented. The paper explores why and how the new changes in the built environment have been ignored by visual artists, comparing the new spatial representations to the new spatial changes. It argues that both the decreasing national investment and the lost identity in the new spatial plans are key factors influencing the constant development of the spatial representations.

Penglin Zhu is currently a PhD Candidate at the Chair of History of Architecture and Urban Planning, TU Delft. His research interests include the spatial transition of the Chinese oil cities and oil-port clusters and the social-culture development of the Chinese oil cities.

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OIL & THE URBANISATION OF THE NORTH SEA

Nancy Couling

In 2019, the North Sea *petroleumscape* celebrates its 50th anniversary since the first major offshore oil discovery at the Ekofisk field in 1969. Despite the current task of decommissioning, it is therefore a rigid, historical format, invested with millions of tons of concrete and steel, working hours, technological solutions, social narratives, and in the meantime encrusted with multiple forms of marine and birdlife. It is a cultural artefact.

The North Sea *petroleumscape* has urbanised the entire sea and linked into land-side infrastructural systems. This paper traces its formation and explores the spatial properties of the resulting artefact. Urbanisation processes in ocean space have historically been steered by trade and shipping in addition to the fishing industry and more recently by the new technological seascapes of renewables. However, I argue that in the case of the North Sea, the extraction of oil and gas has been the major driver of a process of radical transformation of the sea-space which has, in turn become deeply rooted in society, and particularly in the case of Norway, diverted

traditional maritime industries, legends and ways of life into an “ecology” of oil. The Norwegian Directorate for Cultural Heritage has awarded several offshore fields the status of industrial heritage and proceeded with comprehensive documentation of these monuments in lieu of the dismantled physical sites.

As the turn to renewables advances, multi-national oil companies in collaboration with the state are discreetly diverting to “green” strategies, however at the same time, characteristic traits of their oil operations are firmly maintained. The petroleumscape leaves a formidable territorial legacy which is being appropriated, renovated and redirected towards renewables at the same time as processes of optimisation are extracting the last drop from existing fields and finding other substances to inject into their hollowed subsea spaces.

KEYWORDS Ocean urbanisation, ecology of oil, technological seascape, industrial heritage, cultural artefact

Nancy Couling is an Architect who successfully defended her PhD thesis “The Role of Ocean Space in Contemporary Urbanization” in October 2015 - carried out under the supervision of Professor Harry Gugger at Laboratoire Bâle (laba), a Basel-based architecture and urban design studio of the École Polytechnique Fédérale de Lausanne (EPFL), Switzerland. The research pursues urgent questions which Nancy has also approached through teaching and as an experienced architectural and urban design practitioner; linking design practice through all scales, analysing complex contexts and designing with strategies of time. A particular focus lies in investigating the spatial and cultural potential of water. Her interdisciplinary and intercultural skills have been gained through direct experience in diverse cultural contexts since departing her native New Zealand. She is presently Post-Doctoral Researcher and Marie Curie Fellow at TU Delft, Chair History of Architecture & Urban Planning.

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SOCIO-SPATIAL IMPACTS OF ENERGY TRANSITIONS: THE CASE OF ABERDEEN

Elmira Jafari

Since the first discovery of oil in the North Sea, oil exploration and development operations have transformed the economic, social and physical geography of Scotland in general and Aberdeen in particular. Intimacy of Aberdeen to the major oil fields of the North Sea changed the city into an administrative and service city. Since then, Aberdeen has become a major base for the entire North Sea oil operations. This created new growth centres and revitalised stagnant economy of Aberdeen. But, the booming economy of oil did not last for a long time. The recent downturn of North Sea oil activities and decommission of oil and gas rigs has been changing the life of the city towards another transition. Taking Aberdeen as the main case study, this paper studies the socio-spatial consequences of the transformation of the city from a fishing port city into the “Capital of Oil”, and recently to the “Capital of Energy”. It investigates the extent to which development of offshore activities in the North Sea has affected urban development of Aberdeen; and how it has reshaped economic, social and physical structure of the city from the early 1970s to this day.

Elmira Jafari is a PhD Candidate, at the Chair History of Architecture and Urban Planning, TU Delft. She graduated in architecture from Shahid Beheshti University (SBU) in Iran, in 2013. After three years professional practice in architecture and participating in several national competitions, she started her PhD in September 2016. Her PhD is about the transmission of urban initiatives into global south and the complex process of localization of Western ideas during the Cold War, with a major focus on Iran during the 1960s and 1970s at the time when the country experienced an unprecedented construction boom. In parallel, as a member of the research group entitled “The Global Petroleumscape of Oil” under the supervision of Pro.Carola Hein, she was one of the co-curators of the “Beyond Oil” exhibition held in Delft in May 2017, and since then she has been studying the Scottish petroleumscape.

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1B. THE POLITICS OF DECARBONISATION

101, 4 University Gardens

Speaker Organised Panel

EXPLORING UNCHARTED MYTHOLOGIES/TERRITORIES OF PETROLEUM: A GENEALOGY OF PEAK OIL AND THE ANTHROPOCENE IN THE EU'S ARCTIC POLICY

Michael Laiho

Critical studies in political geography have grappled with inside/outside expressions of IR's dominant geopolitical gaze (Walker 1993) as well as nuanced popular, scientific and technical discourse to better understand how governments like the European Union (EU) imagine territory (Bialasiewicz et al. 2005). The EU's coordination of Arctic policy since 2008 provides a useful case study for exploring discourse about Arctic territory through the lens of what Roland Barthes' (1972) refers to as 'mythologies.' My own study draws on parallels between mythological and territorial processes of EU governance by exploring a genealogy of peak oil and anthropocene mythologies in the Arctic. Philip Steinberg (1994: 3) describes territoriality as 'the process by which individual and collective social actors define, bind, reify and control space toward some social end.' To understand how the EU imagines Arctic space through similar processes, cartographic images, policy documents and elite interviews are analysed and I make two important observations, namely that territoriality is the affect of power relations among different elite groups who attempt to construct territory using popular, scientific and technical discourse; and mythologies emerge from the desire for uncontested knowledge about spaces like the Arctic, which helps legitimise EU policy making.

Michael Laiho is researching how the EU imagines Arctic space by exploring a genealogy of carbon. He is a member of the Doctoral Training in Energy at Durham Energy Institute and an affiliated researcher in the UArctic Network. During his early career he worked as a postgraduate researcher and part-time teacher at the Arctic Centre and University of Lapland, Finland, and has interned at the Steffanson Arctic Institute, Iceland, while working on the Arctic Human Development Report II and Arctic Social Indicators II projects.

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NATURAL GAS'S CHANGING DISCOURSE IN EUROPEAN DECARBONISATION

John Szabo

EU member states aimed to decarbonize their economies by 2050, but the (positive) framing of natural gas as a transition fuel can impede such ambitious goal, halting the establishment of a sustainable economy. I investigate the hypothesis that natural gas discourse emanating from the European Commission has been gradually shifting to shed positive light on the resource. Risks associated with such a language-based institutional inscription of the resource's overly positive perception can lead to the strengthened hegemony of the fossil-capital paradigm. The wide-scale deployment of gas infrastructure under the aegis of the Energy Union for instance—backed by the proclaimed aims of enhancing energy security—has not only allowed the deployment of materialities ranging from pipelines to liquefied natural gas terminals, but also spurred growing and increasingly positive discourse about gas on the back of key policy papers and public statements from decision-makers. Power relations encoded in language led me to inquire and conduct critical discourse analysis of natural gas at the supranational level to map out how socio-cultural institutionalization can hinder decarbonisation.

John Szabó is a PhD Student at the Central European University's Environmental Sciences and Policy Department, where he is working on his dissertation about the engineering of the EU's gas market, the ideologies governing its development trajectory, and its future. John is also a Junior Fellow at the Hungarian Academy of Sciences and an organizing member of the Energy Policy Research Group at CEU. He has extensive experience in various entities of the energy sector, ranging from energy diplomacy, IOCs, to public utilities and consultancies. His field of work generally lie at the intersection of energy markets, ideologies, and climate change.

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FOSSIL NETWORKS AND DIRTY POWER IN THE LAND OF OZ

Adam Lucas

Drawing on recent work in science and technology studies, policy studies, and international political economy, this paper examines how the fossil fuel industry has managed to continue to exercise extraordinary financial and political clout in Australia, despite its demonstrable role in contributing to dangerous climate change and opposing the transition to sustainable forms of energy. The industry continues to shape tax and regulatory regimes in its favour, and to influence in significant ways major government and private sector investments in new infrastructure. One of its main strategies has involved hiring literally dozens of individuals over the last decade who have moved seamlessly between senior positions in government, and advisory and executive positions in the fossil fuel and/or mining industries, or vice versa, many of whom have taken up industry positions straight after leaving government. These individuals had, or acquired, detailed inside knowledge of public policy on issues which directly affected the future ability of those industries to maintain their market dominance, and which therefore clearly provides a significant political and economic advantage to them. The paper concludes with some observations about the kinds of political reforms required to adequately address what has become a serious threat to democracy in Australia.

Adam Lucas is a senior lecturer in the School of Humanities and Social Inquiry at the University of Wollongong. He graduated in 2004 from the University of New South Wales with two Masters degrees and a PhD in Science and Technology Studies (STS) and History and Philosophy of Science. Prior to taking up his current position, he worked as a senior policy analyst in the NSW Government. He is an international authority on medieval technology and has a strong research record in climate change and energy policy, informed by recent developments in STS, innovation studies and critical political economy.

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1C. MATERIALISMS IN THE PLURAL: PERSPECTIVES ON OIL IN CONTINENTAL EUROPE

202, 4 University Gardens

Session Organisers: Alexander Klose, Torben Philipp & Benjamin Steininger

Anthropocene thinking, attention to climate change, or projects aimed at transitioning from fossil to sustainable energies have led to a new interest in materialities. Politics, cultures, even digital economies cannot deny their foundations in the material. How best to conceptualize these relationships between matter, energy, history and human agency? Which epistemological and substance-based processes led Eastern and Western cultures to petromodernity, and which ones seem to offer paths to an exit? The panel is composed of three scholars from cultural and media theory, history of science and Slavic studies. They propose a re-focussing of theories of materialism, combining and comparing Eastern and Western philosophical and narrative traditions, while putting an emphasis on the concept of synthesis that links theories of historical, political, as well as chemical processes in the 20th century. The panel discusses heterogeneous sources and theories from the USSR, Germany and the US: literature, science, industry and philosophical speculation.

TRANSFIGURING THE SOVIET BODY: CONSTELLATIONS OF PETROMODERNITY IN SOVIET LITERATURE AND VISUAL CULTURE OF THE 1930S-1960S

Torben Philipp

Oil is a highly symbolic substance that shaped Soviet identity as a hydrocarbon superpower since the early 1920's. More than a neutral energy commodity, oil in Soviet culture was interwoven in numerous discursive practices and social techniques. It became part of a story of the bio-utopian transformation of man and nature, figuring as an "ideologized" fluid as well as a factor of modernization which bound together natural history and industrial labor. Soviet oil infrastructures served not only as economic zones of energy production, but also as "construction sites" of socialism. They framed the implementation of modern labour theory, socialist community building, imaginary geographies, as well as hygienic discourses and body practices.

My presentation will focus on the aesthetic appropriation of oil in Socialist Realist literature and visual culture and the particular manifestations of Soviet Petro-Imagination developed through artistic practices from the late 1920's until the period of the Thaw.

We shall characterize the fundamental challenge for early Soviet artists to introduce novel substances and technologies into aesthetic discourse and to analyze such narrative strategies which enabled the transfiguration of oil's eccentric and resistant *materiality* into *poetic material* of Socialist Realism (for example in B.Pilnyak, S. Urnis, M.Gorky).

Furthermore the presentation will trace the notion of "petromodernity", as it was coined by Stephanie LeMenager. In particular, I will discuss whether this term and its Western provenance can be applied to 20th century Soviet culture, and which constellations of a specifically Soviet Petromodernity may be observed.

Torben Philipp is a lecturer in Slavic Studies at the Humboldt University of Berlin. He teaches and conducts research in the fields of Russian Literature, the History of Optical Media, and Late Socialist Culture in the Soviet Union. Having obtained a PhD from the University of Zurich in 2011 with a thesis on the role of photography in 19th century Russian culture, he is currently working on a book project on Russia as an Oil Culture. His publications include articles and books on the interplay between science and literature, and Visual Culture in Russian Realism.

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MATERIALISTIC THEORY BETWEEN MONISM AND DIALECTICS: A CLOSE READING OF MCKENZIE WARK'S "MOLECULAR RED" AND ITS EARLY SOVIET SOURCES

Alexander Klose

A mobilization of everything and everybody has been taking place from the years preceding WWI until our days. The mobilisation is agitating organic and mineral matter on multiple scales. But the core of its effectiveness lies on a molecular level. U.S. social theorist McKenzie Wark has dedicated a book entitled *Molecular Red. Theory for the Anthropocene* to this (petro-)modern phenomenon – for the most impactful and frightening dynamics within which he has coined the phrase Carbon Liberation Front. In his study, Wark focuses on an understanding of social processes equivalent to the organization of chemical processes that he finds in the writings of dissentient pre- and post-revolutionary Russian authors, namely Alexander Bogdanov and Andrey Platonov. According to Wark, developing an alternative reading of Marx's materialism, the perspective of labor in these works is the perspective of the molecular: very small entities causing effects collectively and from within their own self-organizational processes. Wark reflects on an alternative sourcebook for communism in order to find directions for today's most eminent problems related to climate change. Central to his approach is the question of autopoietic bottom-up organization versus authoritarian top-down organization in respect to different energy systems. In a close-reading and contextualization of some of Wark's sequences as well as those of his inspirations with contemporary imagery I will follow this thread and try to carve out lessons from the early times of Soviet petromodernity.

Alexander Klose is a cultural scientist and curator based in Berlin. Since the late 1990s, he has been walking the line between theoretical and curatorial practice, with a focus on modern technologies and subjectivities. Between 2000 and 2009 he worked on an artistic research and later PhD project on the principles and practices of containerization (*The Container Principle. How a Box Changes the Ways We Think*, Boston/MA: MIT Press 2015).

Together with Benjamin Steininger and Bernd Hopfengärtner he is part of the group *Beauty of Oil*, dedicated to a multidisciplinary research on the cultural, theoretical and material foundations of the petrol age (upcoming exhibition 2019/2020: Kunstmuseum Wolfsburg, Vienna Belvedere).

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DIALECTIC SYNTHETIC CATALYSTS: HOW AN UNDERSTANDING OF CATALYSTS AS DIALECTIC CHEMICAL AGENTS, AND THE INTERCONTINENTAL SYNTHESIS OF COAL AND OIL, OF IG FARBE AND STANDARD OIL MADE HYDROCARBON CHEMISTRY A PLANETARY GEOHISTORIC PLAYER

Benjamin Steininger

Petromodern history is both shaped by fossil materialities and modern technologies. Cultural theory, philosophy of technology and media theory should be challenged by such a scenario. The presentation focuses on the central tool of petrochemistry: the catalyst. Since the late 19th century catalysts (substances, used to accelerate and steer chemical reactions) appear as second order industrial agents. Since the industrial production of ammonia to manufacture artificial fertilizers and ammunition (Haber-Bosch-Process, around 1910), catalysts themselves appear as synthetic mixed materials with even higher order agencies involved. Petrochemistry too, is from the late 1920's onwards built on these foundations. The presented historical scenario reveals on different levels different forms of synthesis and even dialectic integration of opponents. The macroscale shows the cooperation of German I.G. Farben and US Standard Oil, an intercontinental synthesis of coal and oil, to develop a new technological platform for the hydrogenation of coal and oil. The microscale shows the integration of catalyst poisons into the reactive mechanism as the indispensable innovation. This showcase reveals catalysis on several levels as a dialectic synthetic technology and as one of the fundamental driving forces of the modern petrochemical era.

Along such material historical scenarios, a real *material turn* focusing the technicality of concrete materials and their media like agency could be undertaken – e.g. in the tradition of the Berlin school of media theory.

Furthermore the showcase helps to better conceptualize how petrochemical technology as a whole might be integrated into a postfossil future.

Benjamin Steininger is postdoc at the Max Planck Institut for the History of Science, Berlin, media theorist and curator. Main research fields: History and theory of chemical industry, catalysis, fossil modernity, energy transformations, anthropocene. Scholarships, teaching, cooperations: Haus der Kulturen der Welt Berlin, Deutsches Museum Munich, IFK Vienna, University of Applied Arts Vienna, University of Linz, Leuphana University Lüneburg. From 2012-2016 he was directing a digital collection and exhibition project on 100 years of the oil industry in Austria (Partners: Geological Survey Austria, OMV AG, RAG, Vienna Technical Museum).

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1D. SCOTLAND, DECENTRALIZATION, DEGROWTH, TRANSITION

203, 4 University Gardens

Speaker Organised Panel

QUARANTINES, MISFITS AND THE END OF THE CAPITALOCENE: NOTES TOWARDS AN AUTONOMIST DISABILITY PERSPECTIVE ON DEGROWTH - VIA SCOTTISH LITERATURE

Arianna Introna

This paper brings together critical disability studies and Marxist autonomist theory to explore the place of disability in the degrowth imaginary that informs Jenni Fagan's *The Sunlight Pilgrims* (2016) and John Burnside's *Havergey* (2017). Both novels, set during and in the aftermath of social and ecological disaster respectively, engage with how the crisis of the Capitalocene as a 'situated, capitalist world-ecology' triggers a reconfiguration of care relationships, patterns of energy consumption, and the subjectivities imbricated with these. My interest lies in determining the extent to which while both *The Sunlight Pilgrims* and *Havergey* speak to degrowth ideas of a reproductive economy of care whereby 'Caring in common is embodied in new forms of living and producing', disability in the plot is present but retains the marginal position it is assigned to in dominant systems of social reproduction. I will map out how this relates to the socio-political discourse of welfare state nationalism and to the nationed cultural discourses that traverse Scottish literary studies. If, as Graeme Macdonald suggests, literature can have a role in reproducing or resisting dominant energy cultures, approaching *The Sunlight Pilgrims* and *Havergey* within the framework of Scottish literature yields specific insights into how the two novels can help us think differently, or not, about energy and care.

Arianna Introna is an AHRC-funded PhD candidate at the University of Stirling, where she completed an MLitt in Modern Scottish Writing. She has just submitted her PhD thesis entitled 'Crippling Work, Welfare and the Nation: Autonomist Narratives of Disability in Modern Scottish Writing'. Her main research brings together modern and contemporary Scottish literature, disability studies and the different strands of Marxist autonomist theory. Further research interests include welfare state studies, nationalism studies and the energy humanities, especially in terms of the insights these fields provide into issues of social reproduction. She is passionate about and involved with welfare action and disability politics.

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MAKING SOLAR WORK: COMMUNITY LABOUR AND ENGAGEMENT WITH DECENTRALIZED ENERGY INITIATIVES

Tristan Partridge

Seeking to reduce fossil fuel import dependencies and to expand electrification, multiple nations are implementing decentralized, low carbon energy initiatives. For people facing immediate threats from climate change, the imperative to transition away from fossil fuels is particularly acute – often in nations that have set ambitious renewable energy targets – from low lying atolls in the south Pacific encountering sea level rise to Himalayan villages suffering disrupted access to water due to unseasonal glacier run-off. The primary means for achieving these energy objectives is through increased use of solar energy, especially through localized solar systems, and official publications identify the importance of 'community-focused' modes of implementation, operation and maintenance to the viability of such systems. However, goals of this kind are frequently undermined by differential levels of institutional support for land reform, political autonomy, and independent funding schemes. Drawing on documentary accounts and comparative fieldwork experiences on the Isle of Eigg in Scotland – exploring the codependence of community organizing, land reform and micro-grid energy initiatives – this paper examines to what extent decentralized solar projects rely upon community labor, cooperation, and social resources for their success and sustainability; how ownership is negotiated; and how responsibility for maintenance labour is arranged.

Tristan Partridge is a social anthropologist who works on environmental justice and community action. He is based in the Institute of Environmental Science and Technology (ICTA) at the Universitat Autònoma de Barcelona and is a Research Fellow at the University of California, Santa Barbara. Through projects on energy, land and water rights, indigenous movements, and climate change, his research examines the use of natural resources and the uneven distribution of related socio-environmental impacts. He received a Ph.D. in Social Anthropology from the University of Edinburgh (2014) and has conducted fieldwork in Ecuador, Scotland, India, and the US.

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TRANSFORMING WINDS: ENERGY DECENTRALISATION, ETHICS, AND SOCIO-POLITICAL CHANGE IN SCOTLAND

Annabel Pinker

This paper builds on literature exploring the entanglements between socio-political life and energy to consider how alternative, more decentralized arrangements of electricity production might affect how humans relate to one another and to non-human worlds, or trouble existing formations of power and governance. In particular, it considers how two distinct modalities of local engagement with energy schemes at radically different scales – first, a Scottish peninsula's 40-year experiment with off-grid micro-wind turbines and, second, local attempts to disrupt/reconfigure plans to build a controversial commercial windfarm on the Isle of Lewis – rely upon ethical processes for their material and political operation. I argue that energy decentralization – the gradual, multi-scalar reconfiguration of infrastructures and power relations implied by moves towards greater local involvement in energy production, distribution and use – necessitates an ethical mode that disrupts fixed moral claims and assertions of 'the public good' in favour of the creative negotiation of the emergent material, social and political frictions implied by energy transition.

Annabel Pinker is a Leverhulme Early Career Fellow (2015-18) at the James Hutton Institute in Aberdeen. She completed her Ph.D. in Social Anthropology at the University of Cambridge in 2010, and her subsequent research has explored decentralisation, political experimentation, and emerging forms of state power in Peru. Her current research concerns the material politics of renewable energy and energy decentralisation in Scotland.

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JUST TRANSITION AND TRADE UNION CULTURES

Eurig Scandrett (in collaboration with Mary Church and Matthew Crighton)

The idea of a 'just transition' from fossil fuel dependency to a sustainable future has been at the fringes of both the trade union and environmental movements for decades. The inspiration for just transition builds on a culture of radical trade unionism, which has included the East Kilbride Rolls Royce workers' boycott of arms supplies to Pinochet's Chile, the Lucas alternative plan for defence diversification, and the Upper Clyde Shipbuilders' work-in. There is a revival of interest in how workers employed in the fossil fuel industry and its supply chain can, through collective organisation of trade unions, ensure that the transition to sustainability is able to protect livelihoods and create well paid jobs with good terms and conditions and strong union organisation. The Paris Agreement recognised the imperatives of just transition. In Scotland, a coalition of trades unions and environmentalists have formed a Just Transition Partnership and in 2017 the Scottish Government announced the formation of a Just Transition Commission in its Programme for Government. This workshop will explore the opportunities in Scotland for a just transition led by a radical trade union movement.

Dr Eurig Scandrett is a Senior Lecturer in Public Sociology at Queen Margaret University, Edinburgh, and a trade union activist. He worked as an environmental scientist then moved into adult and community education. He was Head of Community Action at Friends of the Earth Scotland before returning to academia as a sociologist.

He has published on environmental justice and climate justice. He represents University and College Union on Scotland's Just Transition Partnership.

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1E. ENERGETIC SYSTEMS OF CAPITAL

203, 10 University Gardens

Speaker Organised Panel

FOSSIL FUEL CONSUMPTIONS THROUGH TECHNOLOGICAL, SOCIAL AND ECONOMIC SYSTEMS, 1950-2017

Simon Pirani

The level of global fossil fuel consumption is now roughly five times higher than in the 1950s, and one-and-half times higher than in the 1980s, when the science of global warming was confirmed and governments accepted the need to act on it. What drives consumption growth? The presentation will argue for an emphasis on consumption by and through technological systems (electricity networks, industrial processes, urban infrastructure, etc) and the social and economic systems in which they are embedded (capitalism, exploitative relations between rich and poor countries, state socialist systems). It will refer to the social and economic trends that have driven consumption growth since 1950: electrification, industrialisation, transformation of the labour process, urbanisation, motorisation, and growth of material consumption and consumerism. This approach is counterposed, on one hand, to false narratives that focus one-sidedly on consumption by individuals, and, on the other, to false narratives depicting consumption as an inevitable consequence of progress in general and economic growth in particular. The presentation summarises some key points from a book, *Burning Up: a global history of fossil fuel consumption* (forthcoming from Pluto Press, August 2018).

Simon Pirani worked as a journalist, covering labour issues (including as editor of the mineworkers' union journal, 1990-95), and Russia and other former Soviet countries, before attending university as a mature student. 1998, BA, University of London (Russian Studies). 2006, PhD, University of Essex (thesis on social/labour history of 1920s USSR). 2007-17 Senior Research Fellow, Oxford Institute for Energy Studies, publishing widely on FSU natural gas markets; 2017- Senior Visiting Research Fellow. Previous books include: *The Russian Revolution in Retreat* (Routledge, 2008), *Change in Putin's Russia* (Pluto, 2010), and (as editor and contributor) *Russian and CIS Gas Markets* (Oxford, 2009) and *The Russian Gas Matrix* (Oxford, 2014). www.simonpirani.com.

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ENERGY AND EMPIRE IN LENIN'S THEORY OF MONOPOLY CAPITALISM

Thomas A. Laughlin

In *Imperialism, the Highest Stage of Capitalism*, Lenin observes the following of German industrial might: "Less than one-hundredth of the total number of enterprises utilise more than three- fourths of the total amount of steam and electric power! Two million nine hundred and seventy thousand small enterprises (employing up to five workers), constituting 91 per cent of the total, utilise only 7 per cent of the total amount of steam and electric power! Tens of thousands of huge enterprises are everything; millions of small ones are nothing".

Not just the means of production, but also the electric power that runs it, rest in the hands of the few!" This paper conducts a close reading of Lenin's 1917 pamphlet that puts energy at its centre. Such a reorientation draws out the author's unique insights into the consolidation of resources and energy infrastructure that was necessary to kick-start global patterns of capital accumulation that shaped much of the twentieth century. Read in this new light, Lenin's pamphlet speaks with uncanny prescience about the unprecedented and accelerated interlocking of the social system and earth system under monopoly capitalism, which has produced the new geological epoch, the Anthropocene. Unconscious to him then, Lenin's pamphlet also raises important questions about what kind of infrastructure will be necessary for an ecosocialist transition away from capitalism's fossil-fuel dependency.

Thomas A. Laughlin has a PhD in English Literature from the University of Toronto. He has worked as a sessional lecturer at the University of Toronto, Wilfrid Laurier University, and Trent University. His research focuses on English literature from the eighteenth century to the early twentieth century, the origins of capitalism and modernity, Marxism, affect theory, and ecocriticism.

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INVESTIBLE GEOTOPIAS: TYPE CURVES AND ASSET BECOMING IN THE WESTERN CANADIAN MONTNEY FORMATION

Caura Wood

This paper explores how oil and gas assets come in to being as objects of investment by global capital through particular calculations and metrologies. Drawing on perspectives from STS, SSF, and the anthropology of value, I explore how “type curves”, a form of probability curve and the feed stock for net present value estimations, are deployed to produce investible geotopias, the real and imagined spaces of hydrocarbon assetization and capitalization. Insofar as type curves are used to convert geological maps into numeralized spaces that fill in vast spaces of wild risk with the confidence of data from prior wells drilled in a region that suggest positive economy, type curves are active agents in building future fossil fuel worlds. The paper explores how, in the making of geotopias, such metrologies render surfaces, climates, lifeways and contestations invisible and external to calculations and forecasted profits. I consider whether, or indeed, how, transition discourse and indeed unruly climate may cause such geotopias to ‘leak’. Data for this project comes from ongoing ethnographic research among a junior oil and gas firm in Alberta, Canada, that seeks public market capital to finance its exploration and development of the subterranean Montney formation.

Caura Wood is an anthropologist and former energy executive writing on the intersections of oil and gas capital markets, asset valuations, energy futures and energy transition in western Canada. Wood resides in Calgary, Alberta where she is completing a manuscript entitled: *Depleted: Formulas of a Resource Economy*.

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BEYOND THE RESOURCE CURSE AND PIPELINE CONSPIRACIES: ENERGY AS A SOCIAL RELATION IN THE MIDDLE EAST

Clemens Hoffmann

This paper identifies problematic tendencies in current analyses of the Middle East’s energy relations. There is a tendency to see all social relations as determined by resource extraction, use and transfer, contributing to the uniquely instable social relations of the Middle East. The combination of weak governance and geological overdetermination continues to damage the region’s fragile ecology. Under these conditions, social structures are incapable to react to new crises, such as the effects of global climate change. This article offers an alternative, more optimistic perspective on the Middle East’s energy relations. Privileging the social over the material, calorific, geological or topographic dimensions of energy relations, it argues that social life developed in relation to its natural resources, matter and energy, but is not singularly determined by it. It proposes to historicise and, thereby, re-politicise the Middle East’s social energy relations, including its nutritional and geopolitical dimensions. This reveals their spatio-temporally dynamic, rather than materially determined character. Energy is subsequently re-defined into a political category, field of social change rather than a limiting biophysical structure. The concept of Social Energy, thus, transforms nature from a constraining externality into an integral part of social analysis and transformation in the Middle East.

Dr Clemens Hoffmann is a Lecturer in International Politics at the University of Stirling, Scotland. He has previously held positions at Bilkent University, Ankara and the University of Sussex. His research interests include Energy, Climate Change and Political Ecology in the Middle East. This research agenda builds on traditions in Historical Sociology of International Relations and Political Marxism. He holds a DPhil from the

University of Sussex from where he graduated in 2010 with a thesis on post-Ottoman state formation.

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1F. CULTURAL FORMS OF/FOR ENERGY TRANSITION

205, The Square

Speaker Organised Panel

DECARBONISING THE LITERARY IMAGINARY

Rick Crownshaw

This paper will explore the need to decarbonise the literary imaginary if the need for energy transition (in particular, to a post-oil future) is to be meaningfully invoked by climate change fiction. Put otherwise, fictions of flood and hurricane (by Rich, Ward, and Ford) will be interrogated for their cognitive dissociation of extreme weather and its social impact from the petroleum-based energy infrastructures that contour the human(ist) geographies of their novels, as well as from the energetics of life narrated therein. While this is demonstrably climate-concerned fiction, its relation of climate change to its aetiology remains unpronounced. Building on the concept of a literary “energy unconscious” (Macdonald), this paper elicits the cultural mediations of weather to which this fiction contributes and which enables the structures of petromodernity, and oil’s lubrication of society and animation of life (Huber), to remain hidden in plain sight. These mediations govern and cathect affective relations with oil that effect a disavowal of dependency on it (LeMenager): the desire for mobility (survival and synchronicity with modernity), i.e., to weather the storm, for Ward’s racialised precariat; the inability to think of climate outside of the logic of financial speculation and scenario planning in Rich; the neoliberal structures of feeling coterminous with the privatised and propertied lives of Ford’s characters. Foregrounding these mediations, these novels afford theoretical and critical opportunities for the reading of climate and the modelling of more viscous relationships between literature and oil.

Dr Rick Crownshaw teaches in the Department of English and Comparative Literature, Goldsmiths, University of London. He is the author of *The Afterlife of Holocaust Memory in Contemporary Literature and Culture* (Palgrave Macmillan 2010), as well as numerous articles on American literature, memory studies, trauma studies, and climate change fiction. He is the editor of *Transcultural Memory* (Routledge 2014), and co-editor of *The Future of Memory* (Berghahn 2010, 2013) and, with Stef Craps, a forthcoming special issue of *Studies in the Novel* on climate change fiction. He is currently finishing a monograph, *Remembering the Anthropocene in Contemporary American Fiction*. His next project is tentatively titled *Filming the Anthropocene*.

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WEATHER AS CHARACTER

Gretchen Bakke

There is a story about the present, that circulates. It says, in brief, that we stand at the brink of an energetic interregnum, one king is dying his mantle heavy with the blood soak of oil while his replacement, wrapped in sunbeams and airy with atmospheric promise, has yet to prove triumphant. Here, despite the pointed breakdown of storylines and power systems during an interregnum, there is nevertheless a lexical acknowledgement that this time too will pass. The ‘inter’ (of the regnum) promises a future king. Transition gives the same feeling of transit between systems rather than off the edge of the map of the world. Here too (trans-) the assumption (again lexical) is that this is not the end of days, there is a time after the interregnum, after the transition, after the mess of the moment. In this paper I track a mode of temporal unfolding that runs parallel to the optimism of transit—talk about the weather. In detective stories, which have experienced a massive growth in popularity during this ‘interregnum’ or ‘time without a storyline’ the weather has emerged as a forceful character in its own right. Simultaneously talk about the weather, always an element of minor moments, has become an everyday site for narrating a felt present. In books, as in life, the weather is no longer simply setting or scene, it drives plots. It has become a both protagonist and symptom of a larger storyline that is (in life) still to be worked out. In this paper I consider the atmospheres of presence so intimately felt through the stories told about the weather and by means of it. For, at the most intimate level, these stories are the principle thing that strangers exchange, that families narrate at the holiday table, that small talk grinds down into to our sense of what constitutes a proper relationship to a proximate world.

Gretchen Bakke holds a Ph.D. from the University of Chicago in Cultural Anthropology. Her work focuses on the chaos and creativity that emerge during social, cultural, and technological transitions. For the past decade she has been researching and writing about the changing culture of electricity in the United States. She is a former fellow in Wesleyan University's Science in Society Program, a former Fulbright fellow, and is currently a guest professor in the Integrative Research Institute on Transformations of Human-Environment Systems at Humboldt University. Her book *The Grid* was selected by Bill Gates as one of his top five reads of 2016. Born in Portland, Oregon, Bakke lives in Berlin.

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FORMS OF LIFE: THINKING INFRASTRUCTURE

Jennifer Wenzel

This essay discusses "Forms of Life" in two senses: first, infrastructure as a social process that fosters particular forms of collective life (see Larkin, T. Mitchell); and second, the agency/vitality imputed to infrastructure, e.g. Bennett's grid-assemblage. I consider energy humanities' unremarked ambivalence about infrastructure: the extant infrastructure of fossil fuels poses an obstacle to energy transition, while making infrastructure visible and "following the pipeline" is regarded by incisive petrocritics (Huber) as necessary but insufficient. Is there a narrative grammar of infrastructure: what do cooling towers, electric pylons, railways, cars and horses make happen (or keep from happening), socially and narratively, when they "work" or when they're hacked? And how do cultural texts differ from built environments in thinking infrastructure as a form of life, even as a lifeform: "thinking infrastructure" as *sentient* infrastructure? What kinds of care, responsibility, and politics would such forms of life demand, and what racial and economic exclusions might they reinforce? What imaginative or conceptual forms, then, can help us grasp infrastructure's forms of life?

Jennifer Wenzel is an Associate Professor in English and Comparative Literature and Middle Eastern, South Asian, and African Studies at Columbia University. Over the past decade, she has become a leading figure in the environmental and energy humanities, and she helped pioneer the study of literature and oil. A reconsideration of her concept of "petro-magic-realism" appears in *Oil Culture* (2014), and she co-edited (with Imre Szeman and Patricia Yaeger) *Fueling Culture: 101 Words for Energy and Environment* (Fordham 2017). She is also the author of *Bulletproof: Afterlives of Anticolonial Prophecy in South Africa and Beyond* (Chicago and KwaZulu-Natal, 2009). Her current book project is called "The Fossil-Fueled Imagination."

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1G. THE NEW INFRASTRUCTURE OF ENERGY TRANSITION

205, 5 University Gardens

Session Organisers: *Elaine Forde and Eliot Storer*

Panel Chair: *Catherine Alexander*

This panel takes the notion of a zero-carbon energy future as its departure point for discussion. The anthropocene is primarily defined by the intensive consumption of carbon-based fuel sources, and as carbon beings surely we are inextricably bound to carbon? While the ethos of low- and zero- carbon have become established by-words for environmental consideration this panel takes time to consider, explore and propose how we might configure the new infrastructures that will help to realise the post-carbon energy transition. The question remains as to how to configure the post-carbon imaginary: What infrastructures, physical and conceptual, are required to support and inspire societal transition to energy beyond carbon? What specific infrastructural challenges are raised in a Euro-American context and do these differ in the developing world? How can the promise of energy decentralisation be realised in contexts that lack major energy infrastructures? What new or innovative research agendas are emerging that can better facilitate energy transition? To tackle these questions, this panel brings together academics from a range of cognate, and not-so- cognate disciplines, with energy transition practitioners to explore the new infrastructures of energy transition from chemical, cultural, legal, societal and personal perspectives.

SUBTRACTING BEYOND CARBON ZERO: DIAGRAMMATIC THINKING ON SCOTTISH BLANKET BOGS

Eliot Storer

According to the scenario pathways put forth during the Paris Agreement, the trinity of climate mitigation responses (renewable energy, consumption reduction, and efficiency improvements) are insufficient to avoid ecological catastrophe. To supplement such emissions reduction measures the rapid deployment of “negative emissions technologies” (NETs), a set of methods that purports to actively remove carbon emissions from the atmosphere, is considered essential. Though we are far from the implementation of NETs, this paper diagnoses three evolving characteristics of this infrastructure-in-the-making. First, NETs as stalled technoscientific development, second, as negotiation device, and third, as diagrammatic ecologism. I then compare NETs to an analogical infrastructure: Scotland’s blanket bogs, in order to generate new questions about the apparently vanguard turn to sequestration.

Eliot Storer is a PhD candidate in sociocultural anthropology at Rice University, predoctoral fellow at CENHS (Center for Energy and Environmental Research in the Human Sciences), and visiting research student at Durham University. His research is on the cultural politics of environmentalist vanguardism emerging within anthropogenic responses to global warming. His dissertation investigates carbon sequestration and novel “negative emissions” regimes in Euro/American contexts, and his ethnographic fieldwork focuses on peat bog restoration projects in northern Scotland.

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THE INFRASTRUCTURAL CHALLENGES OF ADOPTING HYDROGEN GAS AS A GREEN ENERGY VECTOR

Charles W. Dunnill

As the world enters a post oil energy landscape and the percentage of renewables becomes dominant, there are many pressures and constraints that need to be overcome. Balancing supply and demand is key to a successful energy future with a number of potential solutions available. Correlating the supply with demand is one example allowing the imposition of behavioral change on end consumers. By matching the cost of electricity with the supply and demand the supply companies can incentivise end consumers to use renewable energy at times of high supply while saving energy at times of low supply. An alternative method is to decouple supply from demand by storing the renewable energy in some form of universal energy vector. This can be produced

efficiently from all forms of renewable energy fed into a grid and then fed out of the grid for end users. Hydrogen gas is the universal energy vector with huge potential to empower the widespread utilization of renewables in a post oil energy culture. My paper will be about a demonstration unit for a domestic set-up for hydrogen that can easily expand in a modular way to grow the network.

Charlie Dunnill completed his PhD at Glasgow and post-doc at UCL prior to joining Swansea where he is Senior Lecturer in the Energy Safety Research Institute. Charlie's research explores the use of hydrogen as an energy vector to decouple the supply and demand of renewable energy, using technology invented and produced by Charlie's team in ESRI.

Charlie's 8-strong research group works across a number of hydrogen related technologies, with a secondary focus on photocatalytic materials for water splitting. Charlie is Co-I on the FLEXIS project and PI on RICE, which look at recycling "waste" energy, and is the driving force behind the outreach project @TheHydrogenBike www.TheHydrogenBike.uk.

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LIVING OFF-GRID, DIY FUTURE ENERGY INFRASTRUCTURES (VIDEO)

Rubin Irvine

"Human energy is the best form of energy because it produces the best quality environment."

Rubin Irvine has lived off-grid in rural Carmarthenshire for over 20 years. He has designed and built his own hydro-electric power system which powers a family home of five adults. Rubin is a practising artist, and works primarily with wood and the landscape around him. Additionally Rubin is the founder of "Autismazing", an organisation that teaches and facilitates training into ASD, and whose mission is to rewire normative thinking brains to engage with a more positive ASD discourse. Rubin and his family's home have inspired researchers and writers for a generation, and features in the book *How to Live off Grid* by Nick Rosen (2007).

NEW AND EMERGENT LEGAL INFRASTRUCTURES TO SUPPORT ZERO-CARBON ENERGY TRANSITION

Victoria Jenkins

Legal infrastructures will be essential in ensuring an orderly transition to zero-carbon energy production. This transition will include a focus on renewable energy development that will have significant impacts on 'people' and 'communities' at a local level but might also be supported by them. Land use planning processes exist in most countries to provide a system of regulation for the siting of new renewable energy development. Such systems operate in the public interest to consider and mitigate possible negative impacts on society. The negative impacts of renewable energy development are often articulated and expressed with reference to 'landscape'; but this is too often narrowly defined in terms of 'aesthetic' impacts on the landscape. This does not accord with recent literature in landscape studies on the broad values of landscape. This paper considers how current legal infrastructures might incorporate a landscape perspective to support communities in identifying and mitigating the 'impacts' of small-scale renewable energy development.

Victoria Jenkins is an Associate Professor in the Hillary Rodham Clinton School of Law where she has worked since 1999. Her research interests lie in environmental law, specifically legal approaches to sustainable development and the way in which land use planning, landscape and nature conservation laws seek to protect natural resources. She is particularly interested in local perspectives and the impact of devolution on environmental protection in Wales.

Victoria has recently been awarded a Research Fellowship with the National Assembly for Wales. She will be considering how sustainable management of natural resources in Wales might be used as a lens through which to explore possible approaches to UK Common Frameworks after Brexit.

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CAN PLACES OF INFRASTRUCTURAL INEQUALITY CONSTITUTE A “LABORATORY” FOR ENERGY TRANSITION?

Elaine Forde

This paper examines inequalities borne out of a lack of access to energy infrastructures-- infrastructural inequalities. This is a global issue, yet remarkably some pockets of the industrialised world lack access to basic infrastructure. In terms of energy infrastructure, it's useful to consider that addressing infrastructural inequalities may not be a simple case of extending the infrastructures of big energy to remote or under serviced areas. This is particularly so in the transition to renewable energy. A project called fuel stories used visual elicitation techniques to develop energy ethnographies in two contrasting regions of the UK. Research highlights that extant infrastructural inequalities may conceal future energy opportunities that will be realised with broader transition to local- micro and off-grid energy provision. Social movements and new policy frameworks are emerging which mean that such locations may constitute experimental sites for the development of new infrastructures for energy transition.

Elaine Forde's background is in Anthropology. She has completed long-term fieldwork in west Wales, and more recently, São Tomé et Príncipe in West Africa. Elaine's thematic interest is in Energy Research. Her doctoral research (Goldsmiths) examined the activism and related policy context for living off-grid in contemporary Wales.

Since joining Swansea Elaine has been exploring interdisciplinary collaboration in engineering research into uptake and acceptance of new renewable energy technologies. This feeds a broader research agenda which asks how societies might become better equipped for energy transition which will be characterised by decentralisation, peer to peer supply relationships and a proliferation of local- or micro-grids.

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PLENARY LECTURE 2 | 10.45 – 12.15 | THURSDAY 30TH AUGUST

THE FUTURE OF DEPENDENCY: SHELL'S FORESIGHT AND THE PETROCULTURAL PENUMBRA

Jeff Diamanti, *University of Amsterdam*

Charles Wilson Lecture Theatre

In 2016 the US Energy Information Administration (EIA) made a startling claim about the challenge of transitioning to a renewable future: by 2040 the globe will need 48% more energy than it did in 2012 to support continued economic development, three quarters of which will come from fossil fuels (IEO2016). What are the economic, political, and cultural forms of dependency that telegraph our entanglement with fossil fuels well into the new century? This presentation isolates the transition from the era of posted energy prices to our current spot (or futures) markets that began in the 1970s in order to theorize the spectre of our collective, petrocultural penumbra: those blindspots, shaded logics, and indirect forms of entanglement that require new ways of looking to see. The emergence of futures trading in the energy sector—representing roughly five percent of energy traded in 1970s and rising to a staggering eighty-five percent by 1989—is key to unpacking our dependence on fossil fuels, 1) since it marks a key moment when fossil fuels saturate economic and cultural spheres not conventionally responsive to the energy sector, and 2) because it indexes a shift in the very concept of futurity—and by extension the parameters of the postindustrial business environment—immanent to the energy sector's self-image. I locate the lineaments of this self-image in the archive of Shell's foresight program before returning to the practical and theoretical problems it poses to petrocultural mediation today.

Jeff Diamanti teaches Literary and Cultural Analysis and Comparative Literature at the University of Amsterdam. In 2016-17 he was the Media@McGill Postdoctoral Fellow in Media and the Environment where he co-convened the international colloquium on Climate Realism. His work tracks the relationship between fossil fuels and media and has appeared in the journals *Postmodern Culture*, *Mediations*, *Western American Literature*, and *Reviews in Cultural Theory*, as well as the books *Fueling Culture* (Fordham UP) and *A Companion to Critical and Cultural Studies* (Wiley-Blackwell). Diamanti has edited a number of book and journal collections including *Contemporary Marxist Theory* (Bloomsbury 2014), *Materialism and the Critique of Energy* (MCM' Press 2017), and the forthcoming *Energy Cultures* (West Virginia University Press 2018) and *Bloomsbury Companion to Marx* (2018), as well as a special issue of *Reviews in Cultural Theory* on "Energy Humanities" and a double issue of *Resilience: A Journal of the Environmental Humanities* on "Climate Realism." He is working on a book called *Terminal Landscapes: Media Ecologies of Postindustrial Energy Cultures*.

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PANEL SESSIONS 2 | 13.30 - 14.45 | THURSDAY 30TH AUGUST

2A. MODALITIES OF TRANSITION

Charles Wilson Lecture Theatre

Speaker Organised Panel

ON ENERGY IMPASSE: CULTURAL AND SOCIAL BARRIERS TO ENERGY TRANSITION

Mark Simpson & Imre Szeman

“Energy transition”—a shift from dirty to clean energy—has become one of the phrases denoting our response to the impact of fossil fuel use on the planet. But energy impasse is actually the defining condition of our time. Despite overwhelming scientific consensus about the environmental consequences of oil societies and a growing political will to enact energy transition, petroculture persists and—with every new ring road, pipeline, and fracking rig—redoubles. In “Energy Impasse: Cultural and Social Barriers to Energy Transition,” we offer a taxonomy of how contemporary culture deals (or does not deal) with the sedimented, intensifying condition of energy impasse. How has and does culture narrate and respond to energy impasse? What cultural challenges and possibilities attend the prospect of energy transition? What shifts in contemporary life need to occur to enable meaningful passage from fossil fuels to new forms of energy? What makes the prospect of such shifts difficult, discouraging, or even unimaginable for publics today?

The larger project of “Energy Impasse” has three overarching objectives: (1) to conduct a multi-faceted analysis of the ways in which contemporary societies represent and narrate energy impasse in prominent cultural forms and practices, spaces and places; (2) to illuminate through such analysis of impasse the socio-cultural challenges and consequences of energy transition; and (3) to forge genuinely new ways of thinking and talking about energy, with relevance not just for academics but also for policy makers and publics in Canada and beyond. In our presentation at Petrocultures, we intend to offer an introduction to our study of impasse—an outline and overview of the epistemological, ethical, and ontological limits to transition. Why is there an impasse to energy transition? What are the different forms that this impasse takes? And what interventions into impasse can take place in culture?

Imre Szeman is University Research Chair and Professor of Communication Arts at the University of Waterloo. Most recently, he is author of *On Petrocultures: Globalization, Culture and Energy* (2019) and co-author of *After Oil* (2016), and co-editor of *Energy Humanities: An Anthology* (2017) and *Fueling Culture: 101 Words for Energy and Environment* (2017). With Sheena Wilson, he is co-founder of the Petrocultures Research Group.

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Mark Simpson is Professor in English and Film Studies at the University of Alberta, where he specializes in US culture, cultural studies, materialist theory, and mobility studies. He is the author of *Trafficking Subjects: The Politics of Mobility in Nineteenth-Century America* (Minnesota, 2004), co-author of the multi-author handbook *After Oil* (W Virginia, 2016), and co-editor of *Literary/Liberal Entanglements: Toward a Literary History for the Twenty-First Century* (Toronto, 2017) as well as special issues on “Resource Aesthetics” (Postmodern Culture 26.2 [2016]), “Transition” (English Studies in Canada 43.2-3 [2018]), and “Traffic” (English Studies in Canada 36.1 [2010]). He has essays in journals such as *Radical Philosophy*, *Cultural Critique*, *English Studies in Canada*, and *The Canadian Review of American Studies*, and in collections from presses such as Oxford, Fordham, McGill-Queen’s, and UBC. With Imre Szeman, he runs “Transition in Energy, Culture and Society,” a multi-year research project with Future Energy Systems.

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HOW TO READ A NOVEL IN LIGHT OF CLIMATE CHANGE

Bob Johnson

This paper argues that to cultivate a critical energy consciousness in literary studies we do not need to build out an energy canon, comprised of the likes of Upton Sinclair's terrible novel *Oil!* or even Abdelrahman Munif's *Cities of Salt*, so much as we need, as Patricia Yaeger and Graeme Macdonald have proposed, a new way of reading the literature we already have, an interpretative model, and set of skills, more finely attuned to material context, and specifically to the deep ecological (or bioenergetic) infrastructure of our culture, a model that helps to extract and carry into view the "energy unconscious" buried in those narratives, and in our identity and praxis.

This paper proposes an energetic heuristic comprised of six modalities that can be used to reinterpret texts and to explore the sense of habitus, the affective and material context, of those texts. It models a method for teasing out an ambience and infrastructure anchored in fossil combustion that tends to operate un-interrogated as a sort of second nature in our texts. I argue that energy appears in six modalities in our literature: as propulsive energy (i.e. work), as ambient energy (i.e. heat, refrigeration, etc.), as congealed energy (i.e. steel, concrete, etc.), as embodied energy (i.e. food and reproduction), as polymerized energy (i.e. synthetic fiber, plastic, etc.), and as entropic energy (i.e. waste); and I contend further that our literature from Jane Austen to Cormac McCarthy, Nathaniel Hawthorne to Toni Morrison, can be read differently when we start to understand how this unseen energy fuels affective attachments and drives narrative on page after page.

Bob Johnson is Chair of the Department of Social Sciences and Professor of History at National University in San Diego, California; and author of *Carbon Nation: Fossil Fuels in the Making of American Culture* and the forthcoming *Mineral Rites: An Archaeology of the Fossil Economy*.

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GENRE, ENERGY AND COMMUNITY IN THE TRANSITION

Rhys Williams

This paper will outline the intersection of contemporary fantastic genres as social tools for meaning-making, on the one hand, and the urgent need for transition to an alternative future, on the other. It will frame itself through two questions that approach this intersection from opposite directions: Firstly, how do the historical structures of popular genres – their traditions, the narrative and symbolic strategies that they make available, their meaning-making affordances – shape efforts to imagine alternative energy futures? And secondly, how is the real-world crisis – the urgent need for transition – transforming these popular genres? The paper will discuss examples from science fiction, fantasy, weird, eerie, comedy and utopian fictions, before taking a deep-dive into the world of Solarpunk, considering the communities that have aligned themselves with the genre, how it coordinates their activities and helps to organise their sense of energy transition and their own place within that narrative, how the genre acts as a meaning-making tool for them, and how it frames alternative energy futures.

Rhys Williams is Lord Kelvin Adam Smith Research Fellow in Fantasy at Glasgow University. His work is broadly concerned with the relationship between fantasy and social change, energy and the environment, radical utopianism, and pedagogy.. He has published in journals including *Science Fiction Studies*, *Foundation*, *SFFTV*, *Paradoxa*, and *Utopian Studies*, as well as co-editing the special issue of *Paradoxa* 26, 'SF Now'. He is currently working on a theory of energy and the fantastic genres, and a monograph about the Solarpunk movement.

2B. DOCUMENTING/COLLECTING OIL AND ENERGY IMAGINARIES

101, 4 University Gardens

Speaker Organised Panel

EXHIBITING, COLLECTING, AND RESEARCHING (ENERGY) TRANSITION AT THE CCA

Kim Förster

The Canadian Centre for Architecture in Montréal has been concerned with issues of (energy) transition for some time. As the effects of climate change and global warming become apparent, the CCA as a museum, archive and research institution applied different curatorial strategies, be it with exhibitions such as “1973: Sorry out of Gas” (2007) and “It’s all happening so fast” (2016), or with subsequent acquisitions, to communicate architectural responses and claim architectural agency with regard to the depletion of resources and environmental degradation. Most recently, the question of transition, both as a historical object and a political claim, emerges again in the multidisciplinary research project, “Architecture and/or the Environment”, which not only tackles energy sources and systems, but represents a new form of collaboration and community in research. Within a group of eight researchers, four in their individual research projects focus on e.g. coal as commodity in C19 UK; the concealment of oil in architecture; courses on environmental control systems taught in North America; the rise of air conditioning in Singapore and Doha. This presentation discusses the role of the museum with regard to (energy) transition, along the curating of new stories, archives, and interpretations.

Kim Förster is an architectural historian. Since 2016, he is Associate Director of Research at the CCA in Montréal, where he is currently directing the multidisciplinary research project “Architecture and/or the Environment” and coordinating other research programs. Having studied English and American Studies, Geography, and Pedagogy, he holds a PhD in architecture from ETH Zurich, where he taught as a postdoctoral lecturer. He received grants from the Swiss National Science Foundation and the Graham Foundation. Current research interests include the institutionalization, professionalization and economization of ecology and debates on sustainability, as well as agency at different scale with regard to energy transition. He has published in various architectural magazines and journals, as co-editor of *An Architektur*, member of common room, and currently guest editor of *Candide*. His first monograph on the Institute for Architecture and Urban Studies (New York, 1967-1985) is forthcoming.

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ANIMATING OIL: MEMORY, NARRATIVE, AND THE BLIND FIELD IN RENA EFFENDI'S *LIQUID LAND*

Karla McManus

In her 2012 monograph, *Liquid Land*, Azerbaijani photographer Rena Effendi complicates an easy reading of documentary realism by juxtaposing two bodies of work. The first, by Effendi, profiles the people and communities living in the oil-polluted Absheron Peninsula. Many of them refugees of war, the subjects of her photographs make their homes in the abandoned factories and oil fields of a contaminated landscape. The second photographic project is by Effendi's deceased father, Rustam, an entomologist who specialized in the butterflies of the Soviet Union. According to his daughter, some fifty photographs of butterflies, are the remaining visual evidence of the thousands of specimens he collected throughout his career. The dynamic relationship between the two projects narrates what Barthes called a “blind field,” which helps the viewer to move the image beyond its factual frame and imagine the complicated relationship between past and present and between the human and non-human. By following his “butterfly journal” and retracing his travels with her camera, Effendi creates a moving homage to her father's memory and passion, while animating the legacy of oil production, scientific exploration, and the troubled legacy of Soviet environmental justice.

Karla McManus is an art historian who specializes in the study of photography and the environmental imaginary. Her writing and research considers how historic and contemporary concerns, from wildlife conservation, to

environmental disasters, to anxiety about the future, are visualized photographically. Her scholarly writings can be found in many publications including: the *Journal of Canadian Art History*, *Imaginations*, *Captures*, the *Journal of Canadian Studies*, and *Intermédialités*. Karla is a Limited Term Assistant Professor at Ryerson University's School of Image Arts. She received her PhD from Concordia University in 2015 and was a SSHRCC Fellow at Queen's University from 2015-2017.

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SOCIOTECHNICAL IMAGINARIES OF OIL IN FINLAND IN THE 1950S

Tanja Riekkinen

In the study I analyse sociotechnical imaginaries related to oil in Finland in the 1950s. My study is set within the emerging field of petrocultures research, which aims at looking at the political, cultural and social aspects of oil. As such, it contributes to discussion about post-fossil futures. The focus is on postwar years because this is when oil culture made its breakthrough in Finland. The research questions include: what kind of sociotechnical imaginaries did the national and global oil companies and the associations for nature conservation present about oil in Finland in the 1950s? Why did they present images like they did? The study also considers how the phenomenon was connected to its historical context. The sources of the research include annual reports of major oil and petrol companies, statements of the Finnish Association for Nature Preservation and advertisements. The research methods are both qualitative and quantitative. Biographical statement

Tanja Riekkinen is PhD student at University of Oulu. She received both her bachelor's and master's degree in history at the same university. Her research interests include the history of oil and other energy sources and consumption culture.

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2C. NANO, LOCAL, PLANETARY, TEMPORAL: SCALAR PREDICAMENTS IN ENERGY GEOPOLITICS I

202, 4 University Gardens

Session Organiser: *David Thomas*

Discussant: *Jeff Diamanti*

“Scale” is a fundamental and yet unexamined fixation in both technocratic and critical conversations on the political economy of energy and the possibility of transition. The apparent vastness of the global hydrocarbon system at once baffles bureaucrats and grounds leftists’ metonymy of energy transition with broader social transformation. Market-based solutions to decarbonization live and die on the promise that they will someday “scale up.” Arguments as to the political significance or insignificance of various “local” energy struggles seem irresolvable and infinite. Countless aesthetic projects attempt to visualize energy infrastructures said to otherwise dwarf habitual frames of human spatio-temporal perception. And so on.

Scale, we suggest, is less a factual quality of energy systems than a basic idiom of political judgment about power, action, and efficacy inside the second natures of industrial modernism. This panel stages interdisciplinary concept-work on the question of scale. What do we talk about when we talk (qua historical beings, theoreticians, and artists) about scale? What is the emerging political grammar of scale at a moment of overlapping energetic, ecological, and economic crises? And with what conceptual and aesthetic resources might we scale differently, beyond the official world-pictures of liberal politics and capitalist economy?

SPEAKING BACK TO SCALE: ON IMPLEMENTING “THE ENVIRONMENTAL” IN INDIA

Nandita Badami

In May 2011, the Indian Ministry of Environment and Forests circulated an interdepartmental office memo clarifying that large scale solar projects were exempt from the country’s Environment Impact Assessment (EIA) notification. Eight years later, India has increased its commitment to solar energy five fold—up from 20 gigawatts to a targeted installation of 100 gigawatts by 2022. It is already home to some of the world’s largest solar zones. The EIA exemption has, however, continued to be in effect, making large renewable energy projects in India justifications in themselves: categorized as “environmental”, they become recursive loops that render externalities or environmental impacts meaningless.

This presentation discusses the EIA exemption for large scale solar projects as an example of how the Indian state implements “the environmental” not as a set of processes, but as an abstract category—an end in itself. I propose that the concept of “the environmental”, while implemented through specific schemes, is experienced as an abstraction through systematic policy disengagement from the specificities of the environments in which such projects are carried out. I consider a reading of “the environmental” in this sense as an aesthetic category, that which shares in the logic of beauty as reason in itself, rooted in a “universal validity.” Reading the postcolonial state’s mobilization of “the environmental” as an aesthetic ideal in this manner allows me to explore abstraction as a tool that mimics and speaks back to the expectations of scale enfolded in contemporary global environmental policy concerns.

Nandita Badami is a PhD Candidate in anthropology at the University of California, Irvine. Her dissertation focuses on the geopolitics of sunlight as a modern energy source, following its logics as it emerges as a crucial component of contemporary economic and political systems. Her fieldwork has been based in both urban and rural sites across India, where she has spent most of her life, and obtained her previous degrees.

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SCALE CRITIQUE AND ECOTECHNOLOGY: THE CASE OF STEWART BRAND

Derek Woods

Scale critique points to cases where the non-scaleable becomes scaleable in discourses that collapse *qualitative* differences of scale into a single homogenous space. In relation to technology, what Zach Horton calls “scale collapse” imagines that we can shrink or enlarge designs without encountering thresholds across which they need to be changed in order to be feasible. Scale critique can also be applied more broadly to illuminate some of the conceptual and ideological structures at work in contemporary green technology discourse. My paper narrows this topic to the re-scaling of the eco of ecotechnology, which takes place between the 1960s and the early twenty-first century. One major example of this pattern is the work of Stewart Brand. His *Whole Earth Catalog* (1968-1972) avowed a “small is beautiful” approach to technology as an answer to fossil capitalism. As indicated by the subtle title *Whole Earth Discipline: Why Dense Cities, Nuclear Power, Transgenic Crops, Restored Wildlands, and Geoengineering Are Necessary* (2009), Brand’s later work scales ecotechnology to the global and the corporate. In my paper, his reinvention as an “eco-modernist” centers a discussion of the concepts and rhetoric of scale at work in texts about what alternatives to fossil capitalism—including capitalist alternatives—might look like.

Derek Woods is a postdoctoral fellow in the Dartmouth Society of Fellows. His book project ‘What Is Ecotechnology? The Artificial Ecosystem in U.S. Cultures of Science’ is a contribution to Anthropocene political theory and a discussion of technology’s role in the formation the ecosystem, as scientific concept and literary worldview, during the twentieth century. His publications include the essays “Scale Critique for the Anthropocene,” “Corporate Chemistry: A Biopolitics of Environment,” and “Accelerated Reading: Fossil Fuels, Infowhelm, and Archival Life.”

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WELL, FACTORY, SYSTEM: TOPOLOGIES OF THE SHALE ECONOMY

Cameron Hu

Social theory has paid considerable attention to the so-called “externalities” of the extractive economy—to its patterns of externalization and “expulsion” (Sassen 2015). But by what means does petro-capitalism now incorporate the Earth? How does the oil corporation bring the Earth into its official world, above and beyond the generic work of “abstraction”? Drawing on fieldwork on the shale economy in West Texas’ Permian Basin, this paper sketches the scalar logics of unconventional oil. Under conditions of hyper-volatility, the oil corporation now choreographs a hierarchy of territorial/productive units—among them the well, the cube, the factory, and the system—whose total arrangement makes oil’s future newly thinkable amidst an indefinite crisis in the value of hydrocarbon molecules. Here, to “scale” is not merely to drive toward expansion but, more precisely, to establish novel idioms of qualitative and quantitative relationship across a distribution of geopolitical situations. These scalar idioms, further, are distinct from those of conventional oil; they ultimately point to peculiar new dynamics of the global political economy of fossil fuels.

Cameron Hu is a doctoral candidate in cultural anthropology at the University of Chicago. His dissertation, a sustained essay on the political and economic grammar of “global volatility,” builds on long-term ethnographic research into shale (or “tight”) hydrocarbon production in West Texas and Indonesia. His recent essays—on the history of economic geology, the global disaster management complex, contemporary architecture, and video art—have appeared or are forthcoming in *Migrant, Environment and Planning D: Society and Space*, *Scapegoat*, *C*, and *Tactical Media*.

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2D. PLASTIC TRANSITIONS? STABILITY AND CHANGE IN OUR CONTEMPORARY PETRO-PLASTIC ORDER

203, 4 University Gardens

Session Organisers: *Tobias Dan Nielsen, Johannes Strippel & Gay Hawkins*

Discussant: *Matthew Paterson*

Plastics are a quintessential petroculture. The definitive material of modernity: omnipresent and infrastructural in everything from food, to building, to health services. Economies of plastic range from the disposable to the durable and are made up of diverse industries and distinctive markets; from massive transnational petrochemical, industrial complexes to biobased start-ups. Plastic production is intertwined with fossil fuel production. Non-fossil fuel based plastics (bioplastic) make up less than 1% of global plastic production, while the recent shale-gas boom has accelerated “petro-plastic” production investment, which is likely to lead to a 40% increase in production over the next decade. Despite this, the challenges of ‘decarbonising’ the plastic system have received relatively little attention.

This panel grapples with stability and change in the contemporary petro-plastic order. More analysis is needed of what makes plastic worlds so robust. What kinds of material and political forces hold petro-plastic orders together? Which institutional systems and everyday practices create and maintain stability around plastic economies? We also urgently need better investigations of potential transitions. What kinds of interventions have begun to take place with potentially disruptive consequences? While there is no intergovernmental plastic treaty, attempts to govern plastics consumption (e.g. bans, taxes, information) are emerging all over the world. What is the significance of such interventions? How could new kinds of materials (e.g. bioplastic) and new forms of consumption (no straws) spur new transformative pathways? And does placing the burden on consumers let plastic producers avoid responsibility? What kinds of plastic transitions are feasible or even desirable?

READING THE PLASTIC CRISES THROUGH CONTEMPORARY ART

Sara Ullström, Moa Petersén (presenter), Johannes Strippel & Karl Homborg

Johannes Strippel is an Associate Professor at the Department of Political Science, Lund University (permanent, 100%). Johannes’ research is concerned with the critical politics of climate change and its governance through a range of sites, from the insurance industry to carbon markets; from the UN to the urban and the everyday. Johannes has published over 40 books, papers and articles, including two recent edited volumes; Strippel, J., and H. Bulkeley (2014) *Governing the Climate: New Approaches to Rationality, Politics and Power*, and Bulkeley, H., M Paterson and J Strippel (2016) *Towards a Cultural Politics of Climate Change: Devices, Desires and Dissent*, both at Cambridge University Press.

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Moa Petersén is a Senior Lecturer at the Department of Arts and Cultural Sciences, Lund University. Her research themes include: Swedish biohack and grinder culture, how historical artistic depictions of future climate scenarios relate to the history of climate research (as part of Narrating Climate Futures, Lund University), and is currently writing a biography about American photographer Jerry N. Uelsmann. In 2013, she defended her doctor’s thesis, ‘Impure Vision: American staged art photography of the 1970s’ and has since written a series of academic articles, book chapters, and newspaper articles.

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Sara Ullström is a research assistant at the Department of Political Science, Lund University. She is part of the collaborative initiative 'Narrating Climate Futures' and the interdisciplinary research project 'Climaginarities'. Her research interest includes: climate politics and policy, environmental justice, cultural representations of climate change, and the intersection between climate change and art.

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Karl Homberg is an MSc Student in Global Environment, Politics, and Society at University of Edinburgh and a research Assistant at the Department of Political Science, Lund University through the research project: STEPS - Sustainable Plastics and Transition Pathways. He has in his position as a RA also been involved in the projects REINVENT 'Realising Innovation in Transitions to Decarbonisation' and Climaginarities under the leadership of Johannes Strippel, Associate professor at Lund University. Karl has a particular interest in environmental studies in relation to quantitative research, comparative politics, material politics, plastics and politics, and party politics. Karl together with five other students recently pushed the University of Edinburgh to change its disposable cup scheme from a discount to a 'negative tax' arrangement.

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PATHWAYS TO SUSTAINABLE PLASTICS? A NARRATIVE ANALYSIS

Tobias D. Nielsen (presenter), Ellen Palm, Stine Madsen & Lars J. Nilsson

Few would disagree that we need to ameliorate the multiple problems of plastic and begin transitioning towards a sustainable plastic system. However, what sustainable plastics is and how get there is much more controversial. This is becoming increasingly evident, since the EU Commission launched its "A European Strategy for Plastics in a Circular Economy" in 2018. Using a combination of sociology of expectations and policy narrative analysis, we analyse five key narratives that present different pathways to sustainable plastics: *bioplastics*, *biodegradable plastics*, *recycling*, *fewer types of plastics* and *less plastics*. We also identify key actors that adhere to these narratives within discussions at an EU level. Each narrative present different perspectives on what the key problems and solutions are in relation to sustainable plastics. We identify the synergies and trade-offs between these narratives and argue that the policy process needs to reflect on these trade-offs to a larger extent. We also find that the recycling narrative has become a dominant narrative within the EU discussion and highlight how this presents certain opportunities, but ultimate neglects others. We conclude by discussing the complexities in governing this transition at the EU level and how plastic governance much like its material characteristics cuts across and is influenced by a number of other political domains. A key challenge for the EU Plastic Strategy, and indeed for governing a sustainable transition of the plastic system more generally, lies in orchestrating the complexity of the plastic system and further integrating the different stages of the value chain.

Tobias Dan Nielsen is a post-doc at the Department of Political Science, Lund University. He is part of the interdisciplinary research program "Sustainable Plastics and Transition Pathways" (STEPS). His research areas include: sustainable plastics, biodiversity off-setting, carbon embodied trade, UN climate negotiations, and "Reducing Emissions from Deforestation and forest Degradation" (REDD+). He obtained his PhD in 2015 from Lund University, and has five publications, as well as a number of popular science articles.

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Ellen Palm is a doctoral candidate in Environmental and Energy Systems Studies, in the Department of Technology and Society, Lund University, Sweden.

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Lars J. Nilsson is Professor at Environmental and Energy Systems Studies, in the Department of Technology and Society, Lund University, Sweden.

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Stine Madsen is a doctoral candidate, part of the MISTRA funded program STEPS (Sustainable Plastics and Transition Pathways) in the Centre for Innovation, Research and Competence in the Learning Economy, Lund University, Sweden

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AMBIENT PLASTIC: MAKING AND UNMAKING PLASTIC INFRASTRUCTURES

Gay Hawkins

Plastic is at the heart of the rise of fossil fuel and petro-chemically dependent economies and cultures; it is the definitive material of petrocultures. In the 21st century it has become both infrastructural and ambient; essential to the functioning of many industries and often backgrounded and invisible. How then to configure an effective politics of plastic in the face of its disturbing ubiquity and power? This paper takes up Isabelle Stengers (2011) claim that materialism loses its meaning when it is separated from relations of struggle. Using examples from the complex and various histories of plastic it explores how plastic's synthetic materiality, its plasticity, made it able to blend into and reconfigure socioeconomic, infrastructural and cultural environments with relative ease. However, what is often absent in these histories is how plastic's potency as an anti-environmental object emerged. Contemporary activism around plastic highlights how this material has become deobjectified and ambient, everywhere present in atmospheres, oceans, bodies and foodchains. These struggles show that the world has not accommodated plastic rather, this material is remaking environments entirely on its own terms. How then to contest this reality and develop a different and better shared future with plastic?

Gay Hawkins is a Professor at the Institute for Culture and Society, Western Sydney University. Her research interest includes: economic sociology, nature/culture relations, political matter, materiality, and the relations between culture and governance. Gay's work on environments, natures and cultures has been internationally recognised. In 2006, she published *The Ethics of Waste* (Rowman & Littlefield), in 2013 she published the edited book *Accumulation: the material politics of plastic* together with M Michael and J Gabrys (Routledge), and in 2015 she published *Plastic Water: the social and material life of bottled water* (MIT Press) together with E Potter and K Race.

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2E: POLICY AND TRANSITION IN SCOTLAND AND THE UK

203, 10 University Gardens

Speaker Organised Panel

BREAKING THE 'CLIMATE SILENCE': NARRATIVE STRATEGIES FOR SUPPORTING LOW-CARBON POLICY IN SCOTLAND

Hannes Stephan

Scotland has long been regarded as a leader on climate change policy. However, Scotland's target of reducing greenhouse gas emissions by 80% until 2050 is undermined by modest low-carbon policies. The literature points to a 'governance trap': citizens regard climate action as the task of policy-makers, while the latter do not act decisively due to fears about electoral backlash sparked by disruptive policies. Nor is the long-term role of fossil fuel extraction in the country's economy being questioned, signifying 'petro-cultural' continuity rather than transformation. Boosting public concern over climate change impacts and interest in low-carbon policy and lifestyle changes would help to generate more political support for a low-carbon transition. Based on a review of existing literature on framing techniques, this paper explores ideas around narrative power and resonance – linked to the effects of narrative transportation and identification – as potentially superior alternatives to conventional communication approaches. It conceptualises and illustrates both top-down and bottom-up narrative strategies which could help to break the pervasive 'climate silence' in society. Top-down narratives should be crafted by coalitions of civil society organisations. Bottom-up narratives will emerge from offering opportunities for citizens to engage with climate change on their own terms.

Hannes Stephan is a lecturer in environmental politics and policy at the University of Stirling, Scotland. Over the last few years, he has focused on several strands of energy research: (1) the conceptualisation of energy justice perspectives; (2) interdisciplinary approaches to low-carbon transitions involving arts and humanities and the social sciences, (3) the politics of new fossil fuel 'frontiers', in particular the governance of and debates over shale gas in the Scottish/UK context through an analysis of discursive strategies and evidence-based policy-making, and (4) the strategic use and effects of narratives in energy policy-making and societal transition.

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REPORTING LIQUID ECONOMIES: JOURNALISM WORK AND FOSSIL TRANSITION IN ABERDEEN, SCOTLAND

Dominic Hinde

Exploring the notion of transition as it relates to both the energy industry and the economy at large, this paper recounts the process of reporting on oil decline and economic realignment in Aberdeen, Scotland from a reflexive journalistic perspective. Using the idiom of liquidity developed by Zygmunt Bauman to address twin processes of economic desolidification and precarity in both journalism and wider society, alongside the looming uncertainty of climate change, the paper examines the challenges of constructing mainstream transition narratives bound by genre constraints and issues faced by media practitioners seeking to operate within the existing structures of genre and the news market.

To do so the commercial writing of a newspaper feature for a major US publication is re-framed as reflexive ethnographic fieldwork. Inspired by what the media scholar Kari Koljonen characterises as the need to carve out 'moments of action', the article recounts both the newsgathering and editing processes prior to publication, asking how resistance and resilience is possible on the part of newswriters. Ultimately, it speculates on whether or not transition narratives and 'moving on' are possible within contemporary media structures, and how an understanding of the universal aspects of liquidity can better inform presentation of questions of energy and economic transition.

Dominic Hinde is lecturer in media and communication at Queen Margaret University and former newspaper journalist. He was recently Postdoctoral Fellow at the Institute for Advanced Studies in the Humanities at the University of Edinburgh, where he worked on the overlap between journalistic practice and the environmental humanities. He wrote his doctoral thesis jointly between the University of Edinburgh and Uppsala University, Sweden on the rhetorical creation of environment and modernity in Swedish media and has worked as a foreign correspondent and culture writer in the Nordics, Scotland, the US and Brazil. In 2018 he was awarded a Carson writing fellowship to finish his forthcoming book *Journalism in the Anthropocene: on media and the human earth*.

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THE ROLE OF GREEN CULTURAL POLICY IN THE TRANSITION FROM FOSSIL FUELS

Matt Brennan

Cultural policies are written by political parties to articulate, among other things, a vision for the role of the arts and humanities in society. But this vision has often been constrained, both in its rhetoric and recommendations, by the tendency to equate the arts and culture with the creative industries. Likewise, existing cultural policy research has tended to focus on the range of areas currently covered in the cultural policies of governing political parties (e.g. arts, heritage, sport, broadcasting / media, and the creative industries). Surprisingly, there is almost no research whatsoever analyzing the need to consider environmental sustainability – including the cultural transformation required to reduce oil and energy consumption - within cultural policy (what I am terming “green cultural policy”). This is despite a growing trend among policymakers to describe human culture (and urban cultures in particular) using ecological metaphors (Holden 2015). Drawing on the author’s experience as an advisor on the Scottish Green Party’s cultural policy for the 2016 Holyrood election, this paper considers the current state of “green cultural policy,” as well as what role it might play in mobilizing cultural transition away from fossil fuels.

Matt Brennan is an Arts and Humanities Research Council Leadership Fellow working on “New Directions in Music and Sustainability Research.” He has served as Chair of the UK and Ireland branch of the International Association for the Study of Popular Music (IASPM). He has authored, co-authored, and edited several books, including *When Genres Collide: Down Beat, Rolling Stone and the Struggle between Jazz and Rock*, which was named as one of Pitchfork’s “Favourite Music Books of 2017.” He is the editor of the Bloomsbury book series, *Alternate Takes: Critical Responses to Popular Music*.

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THE U.K.’S NEW ENERGY MUNICIPALISM: ENERGY DEMOCRACY OR LIBERALISATION LITE?

James Angel

A number of local authorities across the UK have in recent years established new municipal energy companies seeking to supply energy on a not-for-profit basis. These initiatives have been celebrated by many, often described as a disruptive challenge to the privatisation of the energy sector and heralded by Labour Party leader Jeremy Corbyn as issuing in the rebirth of municipal socialism. Meanwhile, new activist coalitions have crystallised attempting to integrate demands around municipal energy into a radical agenda for “energy democracy”. This paper seeks to interrogate the emerging politics surrounding this “new energy municipalism” in the UK, exploring the potential of municipal energy schemes to live up to their supposed radical promise. Deploying insights from state theory and approaching the municipal state as a set of contested social relations, I argue that the transformative potential of municipal energy is been restrained by the process of market liberalisation which, ultimately, existing municipal energy schemes fail to challenge.

James Angel is a PhD candidate in geography at King’s College London. His research explores contestation around urban energy networks in London and Barcelona through the lens of energy democracy. He attempts to

develop a scholar-activist approach, and participates in UK-based and international energy activist networks. James holds a Masters degree in Environment, Politics and Globalisation from King's College London and an undergraduate degree in philosophy from the University of Cambridge.

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2F. PRIMARY (RE)SOURCES: HOW TO WRITE A HISTORY OF ENERGY

205, 4 The Square

Session Organiser: *Marta Musso*

Throughout the 20th century and since the first oil shocks of the 1970s, data and statistics on energy have multiplied, in a strong and international effort to gather information on energy consumption, production, and prices. Previously left mostly to companies' research centres and sporadic government assessments, data gathering on energy has strongly developed in social sciences as well as in the humanities. Energy history, for example, is emerging as a specific discipline, with dedicated courses and research centres opening in universities around the world. At the same time, energy companies have opened up their archives, more and more aware of the added value that their historic records can bring to the company, as well as to society.

This workshop aims to gather scholars of energy studies from different disciplines, together with archivists and records managers, to discuss best practices and methodologies in the field of energy history, which applies tools from different social sciences (such as sociology and economy) to historical dataset. Scholars conducting research in energy history will present their methods and discuss the difficulties encountered in research; archivists and record managers will present their collections and contribute to the debate of how to best analyse records on energy. While the workshop will have a historical perspective on the analysis, it will be open to scholars who work on present data. The workshop will be organised by **Eogan, the Oil and Gas Archives Network**, which gathers scholars of energy studies from different disciplines and archivists from business and institutional archives working on energy. After the presentations, the table will be open to a collective discussion on methodologies and limitations on energy history, with the aim of establishing specific guidelines on the study of energy history which will be made freely available online on the website of Eogan and elsewhere.

A TALE OF TWO TRANSPARENCY INITIATIVES: THE SOCIAL LIFE OF EXTRACTIVES DATA IN NORWAY AND NIGERIA

Marta Musso

This paper intends to explore the history, politics, and social life of extractives data. Firstly, it will analyse the development of practices such as voluntary and legal disclosures and institutions dedicated to the management of oil data, such as the EITI (Extractive Industries Transparency Initiative). Secondly, the research will analyse the data on oil taxation in two specific producer countries, which are archetypical case studies: Nigeria and Norway.

Marta Musso is a historian and archivist. She is President of Eogan and Teaching Fellow in the Department of Digital Humanities, King's College London. Dr Musso writes about the history of international energy policies, particularly the oil and gas industry. She also works extensively on history methodologies, particularly in a digital environment. She is the curator of the section on methodologies for the newly-launched *Journal of Energy History*.

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CONDEEPS – THE DINOSAURS OF THE NORTH SEA. WORLD INDUSTRIAL HERITAGE AS A METHODOLOGICAL SOURCE

Finn Harald Sandberg

The paper gives a brief historical overview over the history of concrete and why Norwegian engineers were in a good position to enter the stage when oil was found on the Norwegian continental shelf in 1969. The different installations and design are described, and a suggestion for a World Industrial Heritage monument is presented and a reason for which candidate is the best is included.

Finn Harald Sandberg is Curator at Norwegian Petroleum Museum in Stavanger. He is a MSc from the Norwegian University of Science and Technology majoring in Naval Architecture and Marine Engineering. He has been working for several years at different shipyards and has more than 25 years in the Norwegian petroleum industry as an employee of Statoil (now Equinor). At the museum he has been responsible for and contributed to the special internet projects "Industrial Heritage" with emphasis on the technology.

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THE LIFE IN THE OILFIELDS: SOURCES AND METHODOLOGY FOR SOCIAL HISTORY OF FRENCH OIL INDUSTRY IN ALGERIA

Radouan Andrea Mounecif

This paper aims to present the sources for energy history conserved in Total historical archives, highlighting their importance for the emergence of a social history of energy as a sub-discipline of the historical science. We will explain how these sources have been used during our ongoing research on Social History of French oil industry in Algeria underpinning the importance of the archivist-historian relationship for the creation of new sources for energy history.

Radouan Andrea Mounecif is CIFRE Phd candidate in history at Sorbonne University and archivist at Total Historical Archives. Graduated MA in History and Social Sciences, he studied at Università degli studi di Padova, Université Paris 8 and Holy Spirit University of Kaslik in Lebanon before continuing his specialization in Archival and Record Management. He worked in public and private historical archives being in charge of the archival processing and the valorization of different collections on contemporary social history. His main area of research interest is related to colonial and post-colonial economic history with a particular emphasis on social history of energy industry and sociology of work.

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EXPLORING ENERGY AND EVERYDAY LIFE: MOVING FROM THE ORGANIC TO THE MINERAL ENERGY REGIME, CANADA, 1860-1960

Ruth Sandwell

My research explores the energy-related practices of everyday life in the late-nineteenth and early-twentieth centuries in order to understand how Canadians experienced, and made sense of, the transition from the organic to the industrial or mineral energy regime. This scale of analysis – family, household, individual, and community – arguably expands beyond "the particular" to provide key insights into the contexts, causes and consequences of national and even global energy transitions that can be difficult to see from the vantage point of the industry, or the state. Drawing on two of my recent research projects – *Heat, Light and Work in Canadian Homes*, and *The Canadian Clearances: Land, Energy and the Transformation of Rural Canada, 1940-1980* -- my paper will discuss some of the archival challenges and some of the archival sources that have been particularly revealing in my examination the local, the vernacular and the everyday within energy history.

Ruth W. Sandwell is a historian at the University of Toronto, and has written widely about the social history of energy and everyday life in Canada. She is the editor of the *Powering Up Canada: A History of Power, Fuel and Energy from 1600* (McGill-Queen's University Press, 2016) and author of *Canada's Rural Majority* (University of Toronto Press, 2016). She will be a Visiting Fellow at the Rachel Carson Centre for Environment and Society in Munich in 2019, finishing her manuscript *Heat, Light and Work in Canadian Homes: A Social History of Energy 1860-1960*.

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2G. ENERGY AND WORLD LITERATURE

205, 5 University Gardens

Speaker Organised Panel

FROM CIVIL RIGHTS TO ENVIRONMENTAL JUSTICE: WORKING BODIES AND BLACK FEMININITY IN TONI CADE BAMBARA'S *THE SALT EATERS*

Demet Intepe

This paper focuses on energy extraction and its detrimental effects to ethnic and racial minorities in the U.S. Specifically, the paper studies African American writer and activist Toni Cade Bambara's seminal novel *The Salt Eaters* (1980) from a combined lens of environmental justice and world-ecology.

The Salt Eaters has been studied with focus on black feminism, selfhood, and nuclear power issues. This paper's approach to this important work is grounded in Bambara's strong emphasis on working class environmentalism. The paper argues that, although the novel's publication predates environmental justice—both as a movement and a field of study—Bambara understood that the black liberation movement, as an increasingly patriarchal and institutionalized form of activism, failed to respond to women's and workers' issues as well as the rise of environmental inequality after the neoliberal turn. Hence *The Salt Eaters* is, at its heart, Bambara's critique of activist organisations.

Through formal and thematic strategies, the novel shows that new forms of activism are needed to address simultaneously the exploitation of racialized cheap labour and environmental racism. The paper emphasises that an eco-justice approach to Bambara's work that is informed by world-ecological discussions of cheap labour is especially pertinent now, at a time when a return to environmentally destructive and exploitative forms of extraction are offered as incentives to create energy jobs, opening artificial rifts between the working class and environmental justice activists.

Demete Intepe is a third-year PhD candidate in English and Comparative Literary Studies and seminar tutor at the University of Warwick, UK. She earned her BA at Bogazici University, Turkey in Translation Studies and her MA at Leiden University, the Netherlands in Literary Studies. Her PhD project studies the multi-ethnic North American literary configurations of environmental justice through a world-ecological framework, and formulates the "writer-activist" as a sociocultural position.

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EXTRACTION AND EXTRACTIVISM: TOWARDS A WORLD-LITERARY UNDERSTANDING OF THE FISH-OIL DIALECTIC

Michael Paye

In 2011, the *Guardian* newspaper commissioned a series of stories, entitled *Oil Stories*, an attempt to see if "fiction [can] change the way we think – [. . .] change the way we feel – about oil," in the words of the series editor, Richard Lea. No one, sadly, has called for any fish stories, despite the fact that fish will run out before oil reserves do (2048 for the former is the current estimate).

Using literatures from Britain, Ireland, North America, and the Niger Delta, I will demonstrate how the fish(ery) story, though hampered by nostalgia and chauvinism, conflicts with representations of oil and fossil-fuel extractivism. The paper shows how a fishery-centric lens understands oil and fish extraction and extractivism on a dialectic. A dialectical reading allows the literary critic to interpret representations of localist, community-centred fishing regimes as not only imaginaries of pastoral fishery culture that draw from traditional practice, but also as critiques of the epistemologies and practices of fossil-fuel regimes. Ultimately, the paper interprets the fusion of fish and oil aesthetics and affects as the literary representation and re-composition of world-ecological food, energy, and labour struggles.

Dr Michael Paye is a Marie Skłodowska-Curie WIRL-COFUND Postdoctoral Fellow (2018–2020) at the Institute of Advanced Study, University of Warwick. He completed his PhD in UCD's School of English, Drama and Film in 2017. His project theorised the depiction of North Atlantic coastal fishing communities through novels based in Ireland, Scotland, and Canada, and is at the intersection of world-ecology analysis and energy humanities. His WIRL-COFUND project expands this work towards the Global South, outlining the interrelated aesthetics, forms, and affects around literary depictions of inshore fishery crisis, industrial fishery extractivism, and oil shock, with a particular emphasis on Nigeria and the Caribbean. During his PhD research, he was an IRC Doctoral Scholar at University College Dublin (2013–2015), and a Dobbin Scholar at Dalhousie University, Nova Scotia (October 2015). From January–June 2017, I was a Fulbright Visiting Researcher at Princeton University. His articles have appeared or are under review/forthcoming in 'Green Letters', 'Atlantic Studies', 'Briarpatch', 'Irish University Review', and 'Humanities'.

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PETRO-INDUSTRIAL TRANSFORMATIONS IN ABDELRAHMAN MUNIF'S *CITIES OF SALT*

Sara Alotaibi

This paper explores the inexpressibility of the encounter with oil in the Arab peripheries through a reading of the violent and abrupt transition into oil industrialism illustrated in Abdelrahman Munif's *Cities of Salt*. The rupture produced by the entry into petromodernity is expressed as a narrative tension that appears on both a thematic level, through nostalgic reconceptualizations of history and culture and on a formal level, in the negotiation between traditional Arabic forms of narration—namely, realist narrative style—and modernist techniques. These juxtapositions indicate two different forms of life: a nomadic semi-agrarian life and a way of life centered around petroleum production. I argue that the representation of the transition into the age of oil produces two notions of time in the narrative: one that is seasonal and organically linked to nature, in which the narrative uses nostalgia to evoke a mystified sense of place and history, and another form that represents “the accelerated time of petromodernity's primitive accumulation” and uses the language of mystery and uncertainty about change. Ultimately, I demonstrate how the valorization of oil producing land creates new patterns of movement—of commodities, people, and ideas—and new structures of feeling linked to the change in the relation between time and space.

Sara Alotaibi is an assistant professor at King Saud University in Riyadh, Saudi Arabia, who specializes in modernism and transnational studies. She received a PhD in English literature from SUNY Albany in 2017. In her dissertation, “Mystical Oil: Mapping the Oil Narrative in Fiction,” Sara discusses the effects of the transition into oil production and consumption, particularly in undermining older temporalities and transforming space, through a study of the two central tropes in oil fiction: oil's alteration of the time-space dialectic and supernaturalism as an expression of oil's logic.

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PANEL SESSIONS 3 | 15.15 - 16.30 | THURSDAY 30TH AUGUST

3A: ENERGY DEMOCRACY: A NEW AGENDA FOR THEORY AND PRACTICE

Charles Wilson Lecture Theatre

Session Organisers: *James Angel & Franziska Christina Paul*

Under the broad theme of 'transition', this session seeks to explore different dimensions of emerging energy democracy research, activism and practice. Energy democracy is a recent concept and increasingly important imaginary for more socially just, democratically accountable as well as ecologically sustainable energy futures. Calls for energy democracy have been taken up by a wide range of actors across the global North and South including workers and trade unions, social movements, political parties, environmental activists, religious groups and indigenous communities. The session aims to explore energy democracy as an emerging concept and set of practices to understand past, present and future transition efforts from a variety of actors across multiple sites and places. We are interested in how energy democracy has been interpreted and mobilised by different actors and which, if any, transition trajectories have begun to emerge. We have selected contributions from those working both inside and outside the academy, including theoretical, empirical, strategic and case study interventions.

Franziska Paul is a PhD student at the University of Glasgow, Scotland, researching the political geographies of energy democracy. Interested in emerging labour environmentalist coalitions and trade union responses to climate change, she completed her empirical data collection in New York City, USA, and Geneva, Switzerland, where she worked with the global labour network "Trade Unions for Energy Democracy". Franziska has a background in Geography and Sociology, and completed her undergraduate and postgraduate degrees at the University of Aberdeen and the University of Glasgow respectively.

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James Angel is a PhD candidate in geography at King's College London. His research explores contestation around urban energy networks in London and Barcelona through the lens of energy democracy. He attempts to develop a scholar-activist approach, and participates in UK-based and international energy activist networks. James holds a Masters degree in Environment, Politics and Globalisation from King's College London and an undergraduate degree in philosophy from the University of Cambridge.

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THEORISING ENERGY DEMOCRACY: AGENCY, EMERGENCE AND TRANSFORMATION

Steven Harry

Energy democracy (ED) is an emerging concept that is increasingly being used to frame energy and climate struggles (Angel 2017) and integrate energy-transition coalitions (Hess 2018) around calls for more just, democratic, and sustainable energy systems. In this paper, I am interested in how the concept – both in terms of its normative goal of decarbonisation and its actually-existing energy initiatives – relates to anti-/post-carbon/capitalist imaginaries.

An intentional transition to a new energy (social) system is premised on agency, mobilisation and collective stewardship (Petrocultures Research Group 2016): its outcome will largely depend on how it will be brought about, by whom and on whose terms (Abramsky 2010). Drawing on recent studies of emergence (Elder-Vass 2010, Gillet 2016), I explore transition narratives and pathways through an ED-framing using Anderson's

tripartite scheme of agency (1980), which moves from the routine reproduction of social relations associated with pursuing 'private' goals, to the pursuit of 'public' goals by a collective agent, through to conscious programmes aimed at remodelling whole social structures (see Malm 2018).

Through a theoretical exploration rooted in agency, I aim to help assess ED's transformative potential in bringing together key groups of actors across multiple levels and scales, including urban dwellers, energy workers and rural communities, and for fostering collective social struggles against fossil capital (see Kinder 2016).

Steven Harry is a researcher currently undertaking an ESRC-funded PhD in geography at King's College London, supervised by Alex Loftus. I have a professional background in music, training and research, librarianship and ecological-NGO work, and an academic background in social policy and environmental planning. My MA research focused on climate change and sustainability, and my published work investigates the linkages between mitigation, adaptation and sustainable development. I am now investigating the intricate relations between energy and society to explore the opportunities for movement-building among social and environmental movements, networks, and post-capitalist transitions practices. My current work centres around renewing class struggles through the political geographies of energy transition.

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ENERGY DEMOCRACY AND PUBLIC ENERGY FUTURES

Ben Aylott & Jonathan Atkinson

Following the deep cuts in renewable subsidies by the current UK government many community, municipal, and local (Public) energy groups in the UK have struggled and are now exploring a range of alternatives in an attempt to sustain the sector. Their efforts have exposed a lack of coherent vision around the future of the sector and its place in the wider energy transition. In this presentation we problematise several emerging narratives and Futures in UK Public Energy using the concepts of Energy Democracy and Energy Justice using examples of practice and scholarship in and around the European public energy sector and use this to construct an alternative Future based on the principles of subsidiarity, equity, and cooperation.

Jonathan Atkinson is a Project Manager at Carbon Co-op and part of the Energy Democracy Greater Manchester campaign, with experience in the delivery of innovative community energy schemes in retrofit and energy systems.

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Ben Aylott is an Energy Engineer and Systems Developer at Carbon Co-op and part of the Energy Democracy Greater Manchester campaign, working on Nobel Grid - a Horizon 2020 research project developing smart grid technology for public and co-operative energy across Europe.

Carbon Co-op is an energy services co-operative based in Greater Manchester working in the areas of retrofit and energy systems.

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GOVERNING TRANSITIONS TO A LOW CARBON CITY: A CASE STUDY OF GLASGOW, SCOTLAND

Katherine Sugar

Urban areas are home to more than half of the world's population, and as a result account for 60 to 80 per cent of global energy consumption and 75 per cent of carbon emissions. Within recent years, it has been increasingly recognised that all levels of government, particularly at the municipal level, are key actors in contributing to emissions reductions and have a central responsibility in tackling climate change. Glasgow City Council in its role as a local authority has committed to a 40 per cent greenhouse gas reduction by 2030 and to making the city one of Europe's most sustainable cities within 10 years. Using the case study of Glasgow, empirical research conducted in 2016 investigated the approaches taken to transition towards a low carbon society from a local authority perspective. The findings reveal that whilst there is evidence of political will to transition to a low carbon city, there are fundamental challenges in implementation which are evidently thwarting low carbon transitions from a local government level. This paper contributes to this session by drawing upon evidence in Glasgow to illustrate the role of state actors within energy transitions and the wider issues facing energy democracy in progressing low carbon transitions.

Katherine Sugar is a PhD student at the University of Glasgow undertaking research on low carbon transitions in cities. She has a postgraduate MSc in Ecological Economics from the University of Edinburgh, and undergraduate MA Honours degree in Geography and Polish from the University of Glasgow. She has conducted research on low carbon transitions in Scottish contexts, and has a particular interest in renewable energy, climate change politics, environmental justice and the role of alternative models of ownership. Prior to undertaking her PhD, Katherine has also gained professional experience within the renewable and energy sector.

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3B. NANO, LOCAL, PLANETARY, TEMPORAL: SCALAR PREDICAMENTS IN ENERGY GEOPOLITICS II

101, 4 University Gardens

Session Organiser: *David Thomas*

“Scale” is a fundamental and yet unexamined fixation in both technocratic and critical conversations on the political economy of energy and the possibility of transition. The apparent vastness of the global hydrocarbon system at once baffles bureaucrats and grounds leftists’ metonymy of energy transition with broader social transformation. Market-based solutions to decarbonization live and die on the promise that they will someday “scale up.” Arguments as to the political significance or insignificance of various “local” energy struggles seem irresolvable and infinite. Countless aesthetic projects attempt to visualize energy infrastructures said to otherwise dwarf habitual frames of human spatio-temporal perception. And so on.

Scale, we suggest, is less a factual quality of energy systems than a basic idiom of political judgment about power, action, and efficacy inside the second natures of industrial modernism. This panel stages interdisciplinary concept-work on the question of scale. What do we talk about when we talk (qua historical beings, theoreticians, and artists) about scale? What is the emerging political grammar of scale at a moment of overlapping energetic, ecological, and economic crises? And with what conceptual and aesthetic resources might we scale differently, beyond the official world-pictures of liberal politics and capitalist economy?

AN ORDERING OF SOME PETRO-TIMESCALES (WITH AN APPEAL FOR A BOGOLOGIC MODE)

Eliot Storer

Late industrialism makes use of heterogeneous timescales, such as, the authoritative deep time of geology, the vanguard project time used in corporate scenarios, and the ascetic involutory time routinized by sustainability institutions. Figuring these timescales within the renewed anthropology of character (Reed and Bialecki 2018, Faubion 2018), this paper provisionally diagrams such artefactual timescales across a meta-field of petromodernity’s evaluative regime. Respecting critical demands for ethnography to encounter and concretize the abstract depth of geologic scales (Irvine 2014), we then turn to the figure of the bogologic as a substantive spatio-temporal addition to scalar topology. Field data collected on blanket bogs in Scotland’s Flow Country shows a timescale not deep, but floating. Rather than indifferent geoforms, we find ourselves in a spongiform acidic moss of insubordinate tenderness (Adorno 2001). Bog time traverses the scalar manifold. Insubordinate to any prioritization, it tenders an alternate temporality.

Eliot Storer is a PhD candidate in sociocultural anthropology at Rice University, predoctoral fellow at CENHS (Center for Energy and Environmental Research in the Human Sciences), and visiting research student at Durham University. Broadly, his research is on the cultural politics of environmentalist vanguardism emerging within anthropogenic responses to global warming. His dissertation investigates carbon sequestration and novel “negative emissions” regimes in Euro/American contexts, and his ethnographic fieldwork focuses on peat bog restoration projects in northern Scotland.

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SOCIAL LAB, SOCIAL STRUGGLE: POLITICIZING THE SOCIAL INNOVATION PARADIGM

David Thomas

Isabelle Stengers has long posed searching questions concerning the possibility of “another science”—a science pried free of the grip of monopoly capital, and rendered answerable to “the test of general interest” (Stengers 2018). Doing so, she has highlighted the French experiment with “citizen juries” as prefiguring one possible approach. My paper proposes that the policy-driven rollout of a global network of public-private “city labs” might provide Stengers’ questions a more efficacious set of institutional entry points.

Fundamental to the strategies of the social lab is the concept of scalability—the notion that localized experiments might be conducted in such a way as to render their results systemically disseminable. Adopting the prototyping tactics of industrial R&D labs, and applying them to the problem of megacity systems change, proponents of social innovation theory claim to apply an “iterative” approach, one whose recursive flexibility allows them to steer a course beyond the longsighted rigidity of planning paradigms and the flexible but myopic strategies of marketization theory. In particular, they suggest that the lab’s freedom to attempt local, real-time prototyping responses will equip it to deal with the unpredictable cascade effects and feedback loops that characterize anthropogenic climate change. I see the virtue of this logic, but worry that without a broader-based public understanding of these objectives, left to its own devices the social lab could easily come to serve as the staging ground for of a new batch of greenwashing schemes and kleptocratic land-grabs. How to cut this eventuality off at the pass? In probing this question, my paper asks what role humanists and social scientists might play in catalyzing a vital civic struggle, one that will entail making the social lab’s experimental practice answerable to the test of general interest.

David Thomas is a Joseph-Armand Bombardier Canada Graduate Scholar in the Department of English at Carleton University. In dialogue with contemporary sci-fi and speculative fiction, his dissertation analyzes the real-world impact of “social innovation” policy, and tracks international governance’s ongoing efforts to “integrate the Social Sciences and Humanities with Science and Engineering.” His work on social history, climate change, and energy infrastructure has been published in a variety of peer-reviewed and open-access venues including *Boundary 2*, *Jacobin*, and *Textual Practice*. His current research explores how social scientists and humanists are navigating the policy-made demise of academia’s “two cultures.”

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SEA LANES: MESOPOLITICS OF LOST TIME IN THE ATLANTIC

Edith Brunette & Francois Lemieux

Having travelled to Glasgow from Montreal by container ship, we will present an aesthetic phenomenology of capitalist circulation today: a document of bodies, machines, fuels, and waste in motion; scenes from our passage across the Atlantic.

We are told there is no position outside the scalar operations of global capital, no critical vantage beyond Capital’s all-encompassing project of equivalorisation. But are we afforded a new vantage if we inhabit the seaborne commodity chains that sustain this planetary-scale enterprise? We want to dwell in the idiosyncratic space-time of oceanic logistics, to develop a tactile understanding of a planetary economy in relentless motion. We want to take up Isabelle Stengers’ call to a mesopolitics (Stengers 2008)—in attempting to think and act from the middle of that which we would critique.

Edith Brunette is an artist and writer whose body of work has reflected on surveillance, popular protest, and the narratives of transition under capitalist globalization. A PhD student in Political Science at the University of Ottawa, her current research reflects on neoliberal cultural policy-making, and critiques its impact on artists’ political agency. She has presented work at the Banff Centre, Axeneo7, and Skol, and her writing on art and politics has been published in a number of North American and European journals and art magazines, including *ESSE*, *ETC media*, and *Cassandra/Horschamp*. She is a cofounder of the collective Journée sans culture.

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François Lemieux creates installations, documents, and public situations that prompt collective reflection on value, commonality, and normativity. His work been presented at VOX - Centre del’image contemporaine, Musée d’art contemporain de Montréal, the Banff Centre, Springhill Institute (UK), 1646, Walden Affairs (Netherlands), Leipziger Kunstverein, Künstlerresidenz Blumen and Kunstwerk galleries (Germany) and at

Fabbrica del Vapore and Fondazione Antonio Ratti (Italy). He was the host and founder of We left the warm stable and entered the latex void (2008–2010) — a Montreal residency and lecture series — and co-edits the journal *Le Merle, Cahiers sur les mots et les gestes*. He is a cofounder of the Journée sans culture, Action Indirecte and Entrepreneurs du Commun collectives.

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3C. PETROMODERNITY, MARINE PLASTIC, ART

202, 4 University Gardens

Session Organiser: *Alexandra Campbell & Treasa De Loughry*

This panel brings together artists and critics to examine both the representational difficulties of depicting plastic's hazards, and its reality as an index of petro-modernity, despite its weirdly distant relationship from its origins in crude oil. Although claiming 4% of global oil production, the relationship between plastic and petroculture is often one of obscurity and invisibility. As Barry Commoner notes, by its own internal logic each new petrochemical process generates a powerful tendency to proliferate products and displace pre-existing ones. While oil is embedded in our energy intensive culture and is described as the "ur-commodity," we have accultured energy's role in determining material and social life, in part due to the immediately alienating affects of dispersed petro-cultures and materials. The profusion of derivative products, like plastic, operates at a remove from such energy ontologies.

However, plastic is now second only to climate change in its threat to human and non-human life. It makes up to 80% of marine debris from the ocean surface to the deep-sea, and is found in all UK beaches. But plastic's damaging effects are also invisible. It does not biodegrade—plastic retains its molecular structure for aeons, especially in deep sea and polar environments, and breaks down into smaller pieces that are ingested by animals and humans into bodily tissues. Once in the body plastic is an endocrine disruptor and a biomagnifier, attracting surface floating contaminants in water which are then transferred into the food chain. Significantly, the majority of plastic waste ends up at sea, accumulating in vast 'garbage gyres' swirling around ocean vortices in the Pacific and Atlantic oceans, washing up as debris on every coastline across earth, and polluting the remotest recesses of life: from Arctic oceans and deep sea troughs, to invisible micro-plastics contaminating the tiniest sea creatures.

Artistic and literary representations of plastics thus not only offer us a means of contemplating the strangely distant ontologies of oil, but provide us with ways through which to consider wider discourses of exchange, visibility, consumption, and circulation which characterise the expansive and malleable politics of petro-modernity. This interactive panel examines critical and aesthetic ways of examining and bringing to light the links between environmental destruction, plastic and petro-modernity, and the problems of effective action against a material that is indefinitely enduring, infinitely transmutable and systemically entangled in wider energy-consumption networks.

Note on Panel: This proposed workshop-style panel brings together a series of artists and critics to examine the relationship between plastics and petro-modernity. The panel will take the form of 10 minute position papers followed by more open round-table discussions and interactive art-based activities which will engage both our panel members and the wider conference audience.

HYDROPOETICS, PLASTIC, PETROL AND PERCEPTION AT SEA

Alexandra Campbell

Ecological catastrophe at sea often enters public consciousness through spectacular and unsettling images of all-consuming oil spills, or the brightly coloured vortices of plastic gyres. However recent studies have suggested that 99% of marine plastics are in fact no longer on the ocean's surface.[1] In a similar vein, it has been found that while the spectacle of the surface often dominates narratives of offshore oil spills, the real damage lies much deeper as 'only a relatively small amount – between 2 and 28 percent' of released oil ever reaches the surface.[2] The visual politics of oceanic pollution thus presents a particular problem with regards to the actual legibility of marine crisis. This paper considers the ways in which contemporary ecopoetic engagements with marine environments might not only allow us to fathom the true depths of oceanic contamination, but that poetic texts further provide a means of accessing the obscure relationships that permeate between offshore oil production and plastic pollution.

- [1] Erik van Sebille and others, 'A Global Inventory of Small Floating Plastic Debris', *Environmental Research Letters*
- [2] Peter Galison and Caroline A. Jones, 'Unknown Quantities', *ArtForum*, 49.3 (2010), 49-51, (p.51).

Dr Alexandra Campbell is an ECR Fellow in English Literature at the University of Edinburgh. Her research arises at the intersection of several critical discourses including critical ocean studies, the environmental humanities and world literature perspectives. She is particularly interested in ecologies and poetics of the sea and is currently working on her first monograph, provisionally titled 'Hydropoetics: North Atlantic Literature and the Techno-Ocean', which examines discourses of oceanic extraction, disposal and transmission in contemporary poetry from across the Atlantic.

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PETRO-PLASTIC POETICS: WASTE, NEGATIVE VALUE AND THE WORLD-ECOLOGY

Treasa De Loughry

This paper's starting point is the premise that paying attention to the complex global history of plastic can "make visible a stratigraphy of oil capital" (Boetzkes and Pendakis). We now live in a "plastisphere", one of several synthetic petrochemical ecosystems that characterize the Anthropocene. But plastic—unlike the miraculous transformative potential of oil, is immune to the value making potential of previous waste frontiers. The irony of plastic is that the destructive conditions for its initial appearance—as a substitute for raw materials, as a means of fuelling petro-frontiers, and of expanding consumer markets—are now the conditions for its demise and that of human and non-human life. This paper examines experimental literary works that grapple with the temporal and spatial distensions of plastic waste, and how plastics are bound up with toxic forms of capitalist environment-making and destruction.

Dr Treasa De Loughry is Lecturer in Global and World Literatures at the University of Exeter in 2018. She is particularly interested in the convergence of world-literature, petro-modernity, plastic waste, environmental racism and the uneven impacts of toxicity. She has articles published or forthcoming in the *Journal of Postcolonial Writing*, the *Journal of Commonwealth Literature* and *Green Letters*, and chapters in various edited collections. Her monograph, tentatively titled *The Global Novel and Capitalism in Crisis - Contemporary Literary Narratives* is under contract with the Palgrave Macmillan Series "New Comparisons in World Literature," and examines how global novels register epochal crises of the world-system.

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OIL – PLASTIC – SUSTAINABLE TRANSFORMATION

Ernst Logar

The presentation will focus on my artistic research practice and specific art works, which deal with different aspects of plastic. On the one hand I will talk about selected works of my "Invisible Oil" project (Aberdeen, 2008), which engage specifically with oil and plastic, on the other hand works which examine the matter plastic in the context of ecology and economy. The presentation will be concluded with current art pieces, which explore the recalcitrant properties of plastic.

Ernst Logar is a photographer and grew up in Carinthia the southernmost province of Austria. Having engaged subjects as diverse as the Austrian resistance movement in World War II (The End of Remembering – Carinthian Partisans), space and power (Non Public Spaces) and the resource oil (*Invisible Oil*), his art work tries to reveal the hidden layers of modern society. Most of his work is based on an extensive research process and the subject matter of each body of work determines the materials and the forms of the work. In his presentation, Ernst Logar will focus on his art practice which is related to the resource of oil.

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PLASTIC TEMPORALITY: AN ARTIST'S PERSPECTIVE

Jo Atherton

In 2018, the zeitgeist abounds with advice on living plastic-free, and the catastrophic impact this pervasive material is having on the environment. This paper draws on my experience as an artist working with found objects gathered on the British coastline and serves to contextualise dialogues around everyday plastic and our detachment from its crude oil origins. The notion of the 'tideline tourist', emergent online beachcombing communities and the peculiar value attributed to plastic tideline treasures by these groups will invite discussion around object agency. The ubiquity of this material, undoubtedly destined for the museum cabinets of the future, will signify stories of our time, deeply embedded within both Petro-Modernity and the geological record.

Jo Atherton is an artist who scours the British coastline for flotsam, collecting fishing line, netting and other orphaned objects to interpret the stories of our time. Jo has exhibited her unique weaving and printing around the UK and beyond, including the National Maritime Museum Cornwall and the University of Edinburgh. This year, Jo has been invited to The Harbour Gallery on the island of Jersey to deliver a week of flotsam inspired workshops. Jo is a creative advisor to University College London for their plastic-free campaign and will spend World Oceans Day with The National Maritime Museum inspiring the public with her collection of orphaned objects. Jo has a BA (Hons) in English Literature and MA in Cultural & Critical Studies, and is currently writing www.fifty-things.com, an anthology of objects collected on the UK coastline.

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3D: LABOUR AND THE IMPACT OF ENERGY

203, 4 University Gardens

OIL ENGINEER/POET: THE ENERGY UNCONSCIOUS OF S.C. ELLS'S NORTHLAND TRAILS

Melanie Dennis Unrau

Sidney C. Ells is remembered in Canada as the “father” of the tar sands, the stubborn engineer who first investigated the deposits near Fort McMurray, but he was also a writer of poems and short stories about the North. Debra Davidson and Mike Gismondi read Ells's oil-work memoir and conclude that he had only a vertical (extractive) view of nature and Indigenous people (47), but Jon Gordon finds signs in Ells's poetry epilogue that he loved the land—that he wanted both to conquer it and to know that it would “persist unchanged” (57). In Ells's literary collection *Northland Trails* (1938; 1956), which has received no scholarly attention to date, I find further signs of a contradictory “energy unconscious” (Yaeger). Ells's own labour is strikingly absent from this collection that romanticizes the land and the labour of trappers, trackers, women, and scientists. Whereas the other oil-worker poetry collections I study are “insider” work poetry, written from inside the experience of work (Wayman 79), *Northland Trails* does little to document the experience early Canadian oil work. Ells could not resolve the contradictions between his work and his affection for Northern ecosystems and ways of life that were threatened by oil development.

Melanie Dennis Unrau is a PhD candidate in English at the University of Manitoba, a Sir Gordon Wu Scholar, and a SSHRC Canada Graduate Scholar. Her dissertation focuses on Canadian petropoetics—in particular the poetry of oil work and the role of oil as a shaper (poet) of worlds and cultures. Her first poetry collection, *Happiness Threads: The Unborn Poems* (The Muses' Company, 2013), was nominated for two Manitoba Book Awards. She is co-editor of *Seriality and Texts for Young People: The Compulsion to Repeat* (Palgrave Macmillan, 2014), and former editor of *Geez* magazine, where she is now poetry editor.

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INVESTIGATIONS OF CULTURAL IMAGINARIES: EXTRACTION AND ISOLATION IN ALBERTA'S TAR SANDS

Siobhan Angus & Samantha Spady

This presentation will explore energy transitions in light of the question of proximity. Despite its scale, extractive labour is largely invisible, in the hinterlands of Northern Canada. We suggest that discussions about energy transition in Northern Alberta's tar sands are impossible without a deeper understanding of the tar sands themselves. Placing the environmental humanities into dialogue with critical place inquiry, we ask how cultural imaginaries of the tar sands are limited by both distance and closeness. For workers and the communities surrounding industry, immersion in these sites complicates narratives of damage and scarcity, as people experience booming production surrounded by a nature that is seemingly untouched. At the same time, distance from sites of extractions shifts discussions about transitions from the rooted and specific to abstractions that ignore the nuances of petrocultures. Our presentation how cultural production can both limit and deepen our understanding of remote, inaccessible sites and, in turn, how space-based inquiries can add new dimensions to questions about representation.

Siobhan Angus is a Ph.D. Candidate in Art History and Visual Culture at York University in Toronto, ON. She holds an MA in labour history from the University of Toronto. Her research archival photographs. She holds a SSHRC Joseph-Armand Bombardier Canada Graduate Scholarship and the Zdenka Volavka Research Fellowship.

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Samantha Spady is a Ph.D. Candidate in Social Justice Education at the Ontario Institute for Studies in Education, University of Toronto. Her research focuses on the tar sands in Northern Alberta. Talking to people employed in the oil extraction projects in this region, her project traces how labour in this industry shapes critical learning and relationships to land. She grew up in Fort McMurray, Alberta as a settler on Treaty territory and now lives and organizes in Tkaranto (Toronto), the Three Fires Confederacy, Haudenosaunee, and Huron-Wyandot territories.

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AN ITALIAN TEXAS: INTERNATIONAL DEVELOPMENT POLICIES AND SOCIAL CONFLICT AT GELA'S PETROCHEMICAL PLANT (1958-1970)

Elisabetta Bini

This paper examines the ways in which US oil companies transformed labor policies in Libya between the mid 1950s and the late 1970s, through an analysis of the experiences of oil workers and local communities in and around company towns and enclaves. It argues that through its expatriates US oil companies reproduced the gender, class and racial hierarchies that characterized other American camps across the world, based on racial and ethnic segregation, and on the elevation of white women to symbols and agents of America's corporate mission. Furthermore, it points out that after the establishment of Muammar Gaddafi's regime, Libyan workers increasingly challenged American oil companies' labor policies, by demanding the right to live in company towns and have access to the same services as their American and British colleagues.

Elisabetta Bini is Assistant Professor of Contemporary History at the University of Naples Federico II. She received her PhD in History from New York University and was a Max Weber Postdoctoral Fellow at the European University Institute. Her publications include: *La potente benzina italiana: Guerra fredda e consumi di massa tra Italia, Stati Uniti e Terzo mondo (1945-1973)* (Carocci, 2013); *Working for Oil: Comparative Social Histories of Labor in the Global Oil Industry* (with T. Atabaki and K. Ehsani) (Palgrave Macmillan, 2018); *Oil Shock: The Crisis of 1973 and its Economic Legacy* (with F. Romero and G. Garavini) (I.B. Tauris, 2016); "From Colony to Oil Producer: U.S. Oil Companies and the Reshaping of Labor Relations in Libya, 1951-1969," *Labor History*, forthcoming; "Selling Gasoline With a Smile: Gas Station Attendants between the United States, Italy and the Third World, 1955-1970," *International Labor and Working-Class History* (2012), 69-93.

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FROM THE "POVERTY LINE" TO "FUEL POVERTY": THE IMPACT OF PUBLIC HEALTH ON ENERGY NETWORKS

Rebecca Wright

Throughout the twentieth century energy systems have been closely entwined with understandings of health and wellbeing. Despite this interdependence, the history of energy remains a neglected subject within medical histories and the history of medicine rarely features in energy histories. This paper will bring these two histories together, to explore the importance of health in shaping energy networks. The paper will consider the role of public health in framing minimum standards of energy, and the impact this had on the shape of energy systems in the U.S. over the twentieth century. Tracing the contours of this debate from the early articulations of the 'poverty line' in the Progressive Era, through to the New Deal relief programs, and ending with the designation of 'fuel poverty' in the 1980s, the paper will present key moments in which health was used as a pressure point to intervene in energy policy and shape the development of the energy industry. By demonstrating the ways in which the emergence of specific energy networks was bound to social understandings of health and wellbeing, the paper will consider what the medical humanities could bring to debates about sustainable energy transitions.

Rebecca Wright is a Research Fellow at the Centre for Future Health, University of York. Her current project, 'Powering Health', examines the intersecting histories of energy and health in the U.S. between 1900 and 1970. Since completing her PhD at Birkbeck College, University of London, in 2015, she has held positions as a Research Fellow in Mass Observation Studies at the University of Sussex and on the AHRC collaborative project, 'Material Cultures of Energy' at Birkbeck College (2013-2016).

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3E: TRANSITION, RESOURCE FRONTIERS, AND GENRE

203, 10 University Gardens

Session Organisers: Brent Ryan Bellamy & Myka Tucker-Abramson

By transition, we mean the practical shift from one dominant energy source to another, as in water-power to coal-fired steam power or the much-needed transition away from fossil fuels to a future energy source or depowered social reality. In this sense, resource frontiers stand in for the looming possibilities associated with new energy sources and the borders and extraction sites that form in order to bring them online. Covering historical ground, this panel looks to different times of transition, to different resource frontiers, and the cultural output associated with them. The panelists approach the problematic of genre mediated transition from three distinctly different moments: the transition to peat as energy-source in Ireland and the work of Flann O'Brien; in the American south, William Faulkner's apprehension of the rise of automobility in his narrative history leading up to the present; and the contemporary popularity of cinema noir in the wake of the late-twentieth-century shift to a postindustrial oil economy. Genre and its protocols play a key role in each case, and these panelists periodization of energy resources and frontiers will bring those roles to light.

COAL, CONDESCENSION, AND THE 'COMPRADOR CLASS' IN IRELAND

Robert Kiely

'heaven forbid that the time should come when Ireland mines her own coal': Peat and Energy-Tourism This paper will look at the social and cultural significance of peat in Ireland, paying attention to how energy intersects with identity in the newly fledged Irish republic, during and immediately after World War II. This focus will allow us to see the ways in which the distinction between peat and coal structures unevenness within and between nations – two nations in particular, Britain and Ireland. If the attempt to transition to peat as a domestic fuel source may have been justified through pseudo-protectionist discourses on energy security and job creation, one newspaper columnist would lacerate manoeuvres with biting satire. My presentation will clarify the ways in which Myles na Gopaleen, a pseudonym of the Irish modernist Brian O'Nolan (also known by the name Flann O'Brien), expressed concerns about peat as a fuel in his newspaper columns in the 1940s and 50s. These concerns reflect his uncertainty about whatever 'Irishness' is. Looking at the figure of the tourist in his columns and his Irish-language novel *An Béal Bocht* (1941), I will show that na Gopaleen proposes that energy is an integral factor in the condescension of those who visit not only from elsewhere, but more importantly from above.

Robert Kiely is a writer living in London. He has published articles in *Journal of Modern Literature*, *The Parish Review*, and *Samuel Beckett Today/Aujourd'hui*. His *Incommensurables: An essay on Irish Poetry and the Financial Crisis* is forthcoming in 2018. Also a published poet, his chapbooks include *How to Read* (Crater, 2017) and *Killing the Cop in Your Head* (Sad, 2017).

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ON THE ROAD WITH FAULKNER: SATURATING THE NEW SOUTH

Myka Tucker-Abramson

This paper argues that a reading of William Faulkner through the lens of oil can help reorient his role in American studies. Faulkner's post-World War II fiction has become synonymous with Cold War modernism and American liberalism with its complexity, stylistic individualism, and growing acceptance of racial liberalism. This paper reorients such readings of Faulkner's post-war fiction, notably *Intruder in the Dust*, his short stories, and the *Snapes Trilogy*, arguing that these works don't herald Cold War liberalism, but rather critique and theorise the still emergent fossil-fuelled forms of neocolonialism that came to underpin US hegemony. Faulkner was in an ideal place from which to examine this process. As Hosam Aboul-Ela argues, the "post-Reconstruction South experience" acted as a model for "coloniality's specific character after World War II" and the creation of the

“New South” continued this practice and relationship. Examining Faulkner’s engagement with the oil-saturated landscapes of this regime—from the subdivisions, the highways, to the filling stations—and its ur genre, the road novel, this paper will argue for the importance of Faulkner’s fiction in plotting the tangled relationship between the fantasies of oil based ways of life and freedom, widespread militarisation and war making, and ecological destruction.

Myka Tucker-Abramson is an assistant professor of American Literature at the University of Warwick. Her work has appeared in *PMLA*, *Modern Fiction Studies*, and *Edu-Factory*. Her book *Novel Shocks: Urban Renewal and the Cultural Origins of Neoliberalism* is forthcoming with Fordham University Press (2018).

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SOLAR ACCUMULATION: THE WORLDS-SYSTEMS THEORY OF THE EXPANSE

Brent Ryan Bellamy and Sean O'Brien

In the Syfy television series *The Expanse* (2015–), adapted from a series of novels written under the *nom-de-plume* James S.A. Corey, a form of interplanetary combined and uneven development recalibrates the motivational urgency behind the most rudimentary metabolic categories. *The Expanse* envisions a colonized solar system, replete with a United-Nations-controlled Terra and Luna, a military dictatorship on Mars, and a densely populated asteroid belt. This paper proposes that *The Expanse* offers an image of a *worlds-system*, by which we mean an interplanetary system of capital accumulation that reproduces the structure of twentieth-century geopolitical economy at the level of the solar system. At one and the same time, *The Expanse* imagines a new cycle of accumulation founded in the planetary system and premised on ecological crisis on Earth and it provides a re-narration of the end of the cycle of accumulation that has been called the long twentieth century or the American century, which exasperated the climate crisis in the first instance. *The Expanse* is a pivotal narrative that promises a new interplanetary cycle of accumulation and its decline all at once, a fantasy of continuity that simultaneously dramatizes the contemporary crisis of futurity.

Brent Ryan Bellamy is a Canada Research Chair Postdoctoral Fellow at the University of Alberta. He studies the fraught influence of energetic and technological path dependency in representations of the future, turning from texts that imagine surviving the end of the world to those that envision society powered by unique forms of energy. You can read his work in *Mediations*, *Paradoxa*, *Western American Literature*, *Reviews in Cultural Theory*, and the book *After Oil* (www.afteroil.ca).

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Sean O'Brien is a PhD candidate in the Department of English and Film Studies at the University of Alberta. His thesis “Precarity and the Historicity of the Present: American Literature and Culture from Long Boom to Long Downturn” sets out to historicize the conditions under which precarity emerges as a political and aesthetic problem at the beginning of the twenty-first century. With Imre Szeman and Eva-Lynn Jagoe, he is guest-editor of *Demos: We Have Never Been Democratic*. His research is forthcoming in *Cultural Critique*, *Discourse*, and Bloomsbury’s *Companion to Marx*.

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Speaker Organised Panel

GREENING OUR RIDES? MAKING SENSE OF DIESEL-GATE AND THE PUSH FOR FUEL-EFFICIENT VEHICLES

Brian Black

What is the connection between green culture and our energy transition? Can consumer patterns have an impact on largescale energy choices?

These basic questions mark the essential starting point for scholars of historic energy transitions as we try to understand the transition that currently goes on around us. In fact, the emergence of green consumerism has impacted many sectors of the human economy. Particularly in the U.S., the existence of this alternative economic paradigm has broadened the market for sustainable products, including food, alternatively-generated electricity, and energy-efficient appliances. In recent years, green consumption has evolved to the point that it may be capable of impacting one of the most historically-regressive sectors of American consumption: our rides—the cars that we drive.

I propose a thought-piece that uses my historic research on this topic to argue that, in fact, the American market place for personal transportation can be—and, indeed, has been—impacted by green-minded consumers. From icons of the “sharing economy” such as ride-share apps to the availability of Hybrid and Electric Vehicles (HEV), the economy of personal transport in the U.S. has changed radically in the 21st century. These changes have not yet been appreciated for their ability to fuel the very transition from which they originated.

To support this argument, my paper will emphasize the international Volkswagen scandal of 2015, often referred to as Diesel-gate, in order to explore trends and patterns in the current market place. How does this differ from the energy crisis of the 1970s? Does this trend help us to delineate an energy transition going on around us? My paper will respond to these questions and strive to expand our understanding of energy transitions in general.

Brian Black is Distinguished Environmental Studies and History at Penn State Altoona, where he also currently serves as Head of the Division of Arts and Humanities. He is the author or editor of several books, including the award-winning *Petrolia: The Landscape of America's First Oil Boom* (Johns Hopkins, 2003) and *Crude Reality: Petroleum in World History* (Rowman & Littlefield, 2014). In addition, he served as one of the editors of the Spring 2012 special issue of the *Journal of American History* on “Oil in American Life,” which was inspired by the 2010 Gulf Oil Spill. He is the editor of the *Energy and Society* book series published with West Virginia University Press.

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AN ENERGY TRANSITION IN TORONTO: LIFTING THE FOSSIL FUEL HAZE

Karl Schmid

The Greater Toronto Area (GTA) is a metropolitan region of some six million people now actively planning a transition to a post carbon future. How is this transition represented in the energy related planning documents of the municipalities that make up the GTA, including dense urban centralities, and diffuse outer suburbs? This paper unravels the cultural making of the future by planners and politicians, revealing low engagement with potential social and economic challenges. It asks what this tells us about the cultural complexes associated with petroculture, and how petroculture powers conceptions of a post carbon world. Using energy informed theories and cautionary narratives of transition, it outlines the ways that the fossil fuel haze can be lifted to find better paths to urban resilience.

Karl Schmid's research has focused on the urban spatial politics of exclusion and dispossession. In Egypt, this including an examination of dispossession in tourism within the World Heritage Site of Ancient Thebes (Luxor), and an exploration of the relationships between informality and exclusive suburbanization in Cairo. His current research examines urban energy transitions and social vulnerabilities in the Greater Toronto Area. He is a faculty member in the Department of Anthropology at York University.

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THE JOURNALISTIC TREATMENT OF MAJOR ENERGY PROJECTS' RISKS IN THE QUEBEC PRESS: A CASE STUDY OF THE TRANSCANADA ENERGY EAST PIPELINE SETBACK

Angie Landry & Marie-Ève Carignan

The idea of an oil sand pipeline crossing 650 km of Quebec's territory, envisioned by Alberta-based TransCanada with its Energy East pipeline project, prompted strong reactions from the population as well as extensive media coverage (Pineault, 2015). Studies show that the discursive context in which environmental issues and risks are presented "has an important impact on public opinion and policy-making processes" (Miller & Parnell Riechert 2000). In light of the total abandonment of the Energy East pipeline project in Canada in October 2017 (Wolde-Giorghis, October 5th, 2017), what was the dedicated content about TransCanada's petroleum project in the Quebec press?

To investigate this topic, we will examine the media coverage of the Energy East pipeline project from its public announcement in 2012 to its official termination by the company in 2017. This paper will begin by discussing the main results of a content analysis of three major Quebec daily newspapers: *Le Journal de Montréal*, *La Presse* and *Le Devoir*.

Our findings will contribute to the advancement of knowledge by shedding light on how media coverage of the Energy East Pipeline Project was constructed and what impact it may have had on public perception, while also offering up related tools and proposing a transition in terms of objectively treating pipeline project risks and impacts in the media.

Angie Landry is a master's student in communication at the University of Sherbrooke. She is currently working on her thesis entitled "The treatment of the Energy East pipeline project in the Quebec press," while pursuing a career as a journalist with the Canadian Broadcasting Corporation (CBC) since 2015. Her research interests are mainly focused on journalistic practices and ethics, media coverage, risk and social acceptability. Ms. Landry also serves as a board member for the Fédération professionnelle des journalistes du Québec (FPJQ), an organization that defends freedom of the press and the public's right and access to information in Quebec.

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Marie-Eve Carignan, PhD, is Professor of Information and Public Communication at the University of Sherbrooke, where she also acts as Co-Director of Communications Graduate Programs. She holds a doctorate in Information Sciences and Communication from the Institut d'études politiques d'Aix-en-Provence and a doctorate in Communication from the joint PhD program of the University of Montreal, the University of Quebec in Montreal, and Concordia University. Professor Carignan focuses her research on cultural industries, media content analysis, journalistic practices and ethics as well as on strategic communication, including public relations, crisis communication and risk.

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3G. SOLAR TECHNOLOGIES

205, 5 University Gardens

Speaker Organised Panel

URBAN AGRICULTURE: PASSIVE SOLAR HEATED GREENHOUSES AS CLIMATE CHANGE ADAPTATION AND URBAN RESILIENCE

Ian Clarke

This paper will present current interdisciplinary design research into the use of passive solar heated greenhouses as a strategy for creating resilient, low carbon, urban food production systems. Increasingly, there is a public awareness of the need for a healthier, more resilient and sustainable model of agriculture. The globalized industrial agriculture system is one of the largest contributors to greenhouse gas emissions. In addition, the control of food distribution by a very few large corporations has led to so-called “food deserts” in many major metropolitan areas. The desire for more local control of food systems has led to rapid expansions of farmer’s markets, community supported agriculture, community gardens and urban agriculture. However, in areas with cold winters, there is little or no ability for individuals or groups to produce their own fresh produce during the winter months without very high carbon emissions. This paper will describe a multi-year project to design and optimize small-scale passive solar heated greenhouses for urban food production in cold climates (Toronto, Canada). This project has led to partnerships with community organizations where these designs are being utilized for social enterprises to provide high nutrient greens to under serviced neighborhoods and job skill training for at-risk youth.

Ian Clarke is the Associate Dean of Research and Academic Affairs in the Faculty of Liberal Arts and Sciences and School of Interdisciplinary Studies at OCAD University. He received his Ph.D. in Biochemistry from Queen’s University in 1993 and has a diploma in Fine Art (printmaking). Until 2013 he was a cancer stem cell researcher at the Hospital for Sick Children Research Institute in Toronto. He is a Biomimicry Fellow at the Biomimicry Institute in Montana and is active in Biomimicry Design and Sustainable Design education and consulting. His research at OCAD University focuses on Climate Change, Sustainable Design, Urban Ecology and Urban Agriculture

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SOLAR-POWERED AIRPORTS

Melinda Barnard

Energy innovation is usually treated as the province of the Global North. Economies and geographies of the South are reciprocally seen as high consumers of carbon and/or as possible beneficiaries of richer countries’ policy and technology interventions. These presumptions all too often lead us to overlook the ways in which innovation actually happens in Southern contexts, as well as the South-South networks of transmission and collaboration that disseminate these advances. My current research concerns the dissemination of plans for solar-powered airports, in a network that has spread from Kerala in India—the site of the world’s first purely solar airport—to several other Southern countries, including, on the African continent, South Africa and Ghana. In this paper, I look at the different combinations of institutional and cultural enablement that have made these transitions to solar power both desirable and feasible. I focus particularly on the construction of innovation in a range of Southern contexts where there are different combinations of private and public ownership.

Melinda Barnard is Mellon PhD Fellow at the University of the Witwatersrand, in Johannesburg, South Africa, based in Anthropology and in the Centre for Indian Studies in Africa. Her doctoral research focuses on shifts in worldview which have facilitated the adoption of green technologies by corporations, and their developmental sustainability across the Global South, through comparative research on the transfer to renewable energy

in large-scale infrastructure projects (namely airports). Her previous research, for her MA in Anthropology, focused on the ways foreign corporations seek to embed themselves in African contexts, through a study of an Indian company's mining compound in Mozambique.

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KINGDOM OF THE SUN: A CRITICAL, MULTISCALAR ANALYSIS OF MOROCCO'S SOLAR ENERGY STRATEGY

Roberto Cantoni

Over the last decade successive Moroccan administrations, favored by international lending schemes, have devised a daring energy strategy, which plans for a large increase in renewables. In this paper we study the implementation of the Moroccan solar plan by adopting a multiscalar and multidisciplinary approach. As for the former aspect, we focus our analysis on both the transnational and local scales, by addressing the connections between the Euro-African Desertec Project and the Moroccan Solar Plan, to subsequently scale down first to the national level to examine the latter's implementation, and then the regional level to investigate local dynamics of land acquisition. As for multidisciplinary, we employ a hybrid STS-critical geography approach allowing us to reflect on both the construction of land marginality and the technological choices involved in the solar plant. We argue that the shape that the plan eventually took was influenced not only by directives given by the multilateral development banks but also by Morocco's political centralism; and that the process of land acquisition can be likened to a 'soft' green grabbing, in which citizens were first divested of decision-making power, and then made into 'objects of development.'

Roberto Cantoni (History of Science and Technology PhD, University of Manchester) is JFZ-funded visiting professor at the Universität Augsburg, and research associate at EHESS Paris. He is the author of *The Enemy Underground: Oil Exploration, Diplomacy, and Security during the Early Cold War* (Routledge, 2017), on the French and Italian oil technopolitics from the late 1940s to the early 1960s. In recent years, he has conducted research in the history of technology and in STS. His current works focus on the sociology of shale gas in France and Poland, and on renewable energy policies in Africa.

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PLENARY LECTURE 3 | 17.00 – 18.30 | THURSDAY 30TH AUGUST

“OIL WAS THE HIDDEN ACTOR”: GENDER, SEXUALITY AND RESOURCE IMPERIALISM IN WORLD PETRO-FICTION

Sharae Deckard, *University College Dublin*

Charles Wilson Lecture Theatre

Sheena Wilson has recently called for a lens of “critical petro-intersectionality” through which to “expose how the inequities of race, class and gender are not only perpetuated in our current petroculture but also actively deployed as rhetorical strategies to literally and figuratively buoy and sustain existing power sources. The mainstream media in capitalist cores in Northern America and Europe often instrumentalizes rhetorics that invoke women’s rights as a justification for colonial extraction politics and that position female bodies as sites of spectacularized petro-politics with consumer aims, while erasing or marginalizing the agency of women in acts of petro-resistance. This talk will seek to expand a critical petro-intersectional approach to world oil literature, by exploring examples of global feminist petrofiction from sites of resource extraction and oil domination by writers such as Nawal El Saadawi, Laura Restrepo, and Latife Tekin in which questions of gender, sexuality and the political and economic dimensions of women’s work are explicitly foregrounded in relation to the political ecology of oil.

Dr. Sharae Deckard is Lecturer in World Literature at University College Dublin. Her research interests intersect energy humanities and world-systems approaches to world literature, ecology, and resource culture. Her monograph, [Paradise Discourse, Imperialism and Globalization](#), was published by Routledge in 2010, and she is a co-author with the Warwick Research Collective (WReC) of *Combined and Uneven Development: Towards a New Theory of World-Literature*, a monograph published by Liverpool UP in 2015. She has edited and co-edited special issues of *Ariel*, *The Journal of World-Systems Research*, *Green Letters* and *The Journal of Postcolonial Writing* on world literature and world-ecology.. Her book, *Capitalism’s Ecologies: Culture, Power and Crisis in the Twenty-First Century*, co-edited with Jason W. Moore, Michael Niblett, and Diane Gildea, is forthcoming from PM Press in 2018.

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PANEL SESSIONS 4 | 09.00 - 10.15 | FRIDAY 31ST AUGUST

4A. PROTEST AND RESISTANCE

Charles Wilson Lecture Theatre

Speaker Organised Panel

OIL, DEMOCRACY AND CONSENT: A POLITICAL ECOLOGY OF VOICE (PEV) EXPLORATION INTO PERU'S FREEDOM OF VOICE FOR HYDROCARBON IMPACTED CITIZENS

Adrian Gonzalez

This paper sets out to evaluate the freedom of voice for Peruvian stakeholders affected by hydrocarbon development. This occurs through the utilization of a political ecology of voice (PEV) theoretical framework based upon the theory of voice by Albert Hirschman and political ecology. PEV can be defined as the study of economic, political, social, and geographical factors over a specific time period and their impact upon the use of voice by stakeholders. Peru's case-study was focused on its main oil-producing Loreto Region and incorporated evaluation of hydrocarbon voice mechanisms (prior consultation and environmental impact assessments) supported by interview testimony of stakeholders and state officials. PEV analysis reveals a political environment which is dangerous, inflexible and intolerant of Peruvian stakeholders voicing over hydrocarbon development. This is due to the state's zealous pursuit of its "selva (rainforest) hydrocarbon and development vision" which severely undermines Peruvian stakeholder's freedom of voice.

Presentation paper based on 2018 journal article entitled: "A salute to the bandido": a political ecology of voice (PEV) exploration into Peru's freedom of voice surrounding hydrocarbon development,' *Society & Natural Resources*, 31(6): 649-665 (free e-copy available)

Adrian Gonzalez is an Associate Lecturer in Human Geography and Environment at the Environment Department, University of York. He has a long-standing interest in natural resource extraction and management, particularly oil, in Latin America and Africa and how this impacts the relationship between State, society and business. Underpinning this research is the intention to explore the social injustice created through natural resource extraction and environmental pollution events. His Human Geography PhD at Royal Holloway, University of London was focused on an investigation into the causes of increased oil pollution in Peru's Loreto Region via the political ecology of voice (PEV) theoretical framework. Other published research has explored corruption, natural resource governance, underdevelopment and the relationship between corporate social responsibility (CSR) and the state in Nigeria's Niger Delta.

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PETROCULTURES AND THE PRACTICE OF PROTEST: THE IMPORTANCE OF BEING EXTREME

Verity Burgmann

The importance of extremism is confirmed in the history of social movements. Their limited, but not insignificant, attainments have been won through utopian postures, shifting the spectrum of political debate so less extreme demands of the same movement seem eminently reasonable. From the experience of the American civil rights movement, political scientists developed the concept of the "radical flank effect" to explain the political efficacy of having a dream: the phenomenon whereby extremism brings reforms more effectively than reformists are otherwise able to achieve. Are there lessons here for the climate movement? Critiquing capitalism, especially fossil fuel industries, for causing climate change, and demanding a different, safe climate economy is more likely to result in governments enacting minimalist mitigation measures in order to legitimate capitalism. Such reforms are more likely to be achieved when the climate movement challenges the existing system by insistence on a post-capitalist future that has abolished dependence on fossil fuels. However, for the first time in social

movement history, reforms might be valueless. Given the danger of 'tipping points' triggering catastrophic runaway climate change, the climate movement, unlike previous social movements, might need to achieve its Utopian, maximum program to save the world from catastrophe.

Verity Burgmann is Adjunct Professor of Politics in the School of Social Sciences at Monash University. Until 2012 she taught in Political Science at the University of Melbourne and became its first female professor in 2003. In 2013 she taught at the Free University in Berlin, before retiring to her current honorary position. She researches labour movements, protest movements, radical ideologies and environmental politics. Her most recent book is *Globalization and Labour in the Twenty-First Century* (Routledge, London and New York, 2016). Other books include: *Power, Profit and Protest* (2003); and *Climate Politics and the Climate Movement in Australia* (2012).

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RESISTING (GREEN) ENERGY INJUSTICES IN WESTERN SAHARA AND EQUATORIAL GUINEA

Joanna Allan

The academy has explored how "dirty" energy has led to violence, environmental destruction and poverty. We know how the renewables sector, in some contexts, reflects neoliberal modes of power (Klein 2014) and can subsume social outcomes to environmental ones (Davies 2014). But we still lack a clear picture of how green energy is implicated in human rights abuses in some (post-)colonial settings. In this paper, I show that the green energy industry is, in the contexts of Western Sahara and Equatorial Guinea, in danger of replicating the neocolonial and violent culture of the fossil fuels industry. I use Critical Discourse Analysis to show how authoritarian regimes and their Western corporate and state allies greenwash the formers' external-facing images, thus increasing their power over oppressed citizens. At the same time though, said citizens of Western Sahara and Equatorial Guinea challenge energy injustices (such as indigenous lands being appropriated for multinational-run, large scale solar and wind farms), often using the arts as their weapons. In the second part of my paper, I analyse Saharawi and Equatoguinean resistance poetry and short stories, which, I argue, can help us imagine a green energy transition that serves justice for marginalized communities as well as for the environment.

Joanna Allan will begin a Leverhulme Early Career Fellowship in the School of Modern Languages and Cultures, Durham University, in March 2018. She has taught at the Universities of Durham and Leeds, and completed her PhD in Hispanic Studies at Leeds in December 2016. Her monograph, *Women, Resistance and Genderwashing: Feminist Challenges to Authoritarianism in Western Sahara and Equatorial Guinea*, is forthcoming with Wisconsin University Press. She has volunteered with Western Sahara Campaign and Western Sahara Resource Watch since 2007, and acted as Chair of the latter 2015-2017.

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IMAGINARIES OF THE SOUTH: FOSSIL FUELS AND CONTESTED NARRATIVES IN PATAGONIA

Paula Serafini

In the last year, the southern region of Patagonia has been increasingly present in the Argentine public eye. The high-profile deaths of Santiago Maldonado and Rafael Nahuel, which took place in the context of state repression of protests and land claims by the indigenous Mapuche people, have brought the previously invisibilised issue of indigenous rights to the forefront of public debate. The coverage of this conflict has been contentious: while oppositional and alternative media as well as human rights organisations have spoken out for the rights of indigenous peoples and an end to the expansion of extractive projects and the accompanying forms of state violence, the hegemonic media has perpetuated a stigmatising narrative of Mapuche people as violent, crooks, and 'not Argentinian'. This, coupled with the current government's furthering of an economic model based on

mining, non-conventional fuel extraction, and monoculture agriculture, signals to an increasingly heated clash between two irreconcilable paradigms: extractivism and decolonisation.

This paper will present an analysis of mainstream media reporting on the current conflicts in Patagonia countered by an analysis of politicised, decolonial art interventions that aim to challenge hegemonic discourse. Through this exercise I intend to deconstruct two opposing narratives and visions of Patagonia and the country at large: a promise land for development that needs to be conquered, and a bastion of resistance against extractivism.

Dr Paula Serafini is a Research Associate at CAMEo Research Institute for Cultural and Media Economies, University of Leicester. Her research is in the field of cultural politics, and she is currently working on a project on extractivism and cultural resistance in Argentina. Paula is co-editor of the volume *artWORK: Art, Labour and Activism* (Rowman & Littlefield International, 2017), and author of the forthcoming book *Performance Action: The Politics of Art Activism* (Routledge, 2018).

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4B: ENERGY TRANSITION: SITES AND SUBJECTIVITIES [ROUNDTABLE DISCUSSION]

101, 4 University Gardens

Session Organiser: *Derek Gladwin*

Moderator: *Imre Szeman*

This roundtable hopes to continue and enhance discussions about energy transitions while focussing on the theme of 'sites and subjectivities'. The three discussants approach topics of energy from different perspectives and experiences, but all three agree that questions around places and peoples are key to transition conversations. Thus, our moderated discussion will begin with three very short presentations (7 minutes each) that will open up the room to further ideas. The questions we will address (drawing on social, legal, and cultural examples) include:

- What are potential challenges and/or tensions that energy transitions create within certain sites or bearing on specific subjectivities?
- How do we imagine subjects and/or objects when transitioning into a different type of energy paradigm?
- How do we use and/or value cultural texts to represent or speak on behalf of subjects and/or objects of energy transition?
- Which subjectivities are (in the main) dominating these conversations about transition?

Danine Farquharson is Associate Dean of Graduate Studies and an Associate Professor of English at Memorial University. Her research and teaching began in Irish and postcolonial studies; namely, studies of masculinity and violence in fiction and film. Her focus now is on energy humanities and she works with her colleague, Fiona Polack, on the research project Cold Water Oil (www.coldwateroil.ca).

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Patricia Barkaskas is the Academic Director of the Indigenous Community Legal Clinic and an Instructor at the Peter A. Allard School of Law at University of British Columbia. She has worked closely with Indigenous peoples in their encounters with the justice system and has worked for Residential school survivors as an historical legal researcher for the Indian Residential Schools Settlement Agreement. Her teaching and research interests include access to justice, clinical legal education, decolonizing and Indigenizing law, particularly examining the value of Indigenous pedagogies in experiential and clinical learning for legal education, and Indigenous laws. Patricia is Métis from Alberta.

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Derek Gladwin is a Banting Postdoctoral Fellow at the University of Waterloo. He has previously held visiting research fellowships in the environmental humanities at the University of Edinburgh and Trinity College Dublin. His research explores the intersection between environmental and cultural studies with authored and co-edited books including *Unfolding Irish Landscapes*, *Eco-Joyce*, *Ecological Exile*, and *Contentious Terrains*, which was a finalist for the ASLE Ecocriticism 2016 Book Award.

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4C. OIL AND MEDIA / OIL AS MEDIA

202, 4 University Gardens

Session Organiser: *Jordan B. Kinder*

This panel will serve as a launch of a special issue of the open access journal *MediaTropes*, co-edited by Jordan B. Kinder and Lucie Stepanik, that examines the relation between oil and media by figuring oil as media. In this special issue, the editors asked contributors to consider the ways in which oil can be represented as a mediating presence or as an object that is mediated. The works in the issue are prompted by the following central questions: how is oil (trans)formed in media within an increasingly interconnected and globalized Western society? How have various forms of media mediated the cultural construction of oil and oil-related events in the Western social imaginary? And in what ways can or does media and/or investigating media impact the cultural, social and political production of energy in the future?

Framed around recent special issues that aided in initiating the kind of work this issue builds on (2012's *Journal of American Studies* on oil cultures, edited by Ross Barrett and Daniel Worden and a special issue of *Imaginations: Journal of Cross-Cultural Image Studies*, "Sighting Oil," edited by Sheena Wilson and Andrew Pendakis), the diverse contributions range from developing an understanding of oil as a form of "elemental media" (Vargas), to a reading of billboards in South-West Texas (Frigo), to a critique of the ways in which "ugly" petro-aesthetics contribute to our dependence on oil (Welling). More important, however, is that in this panel we aim not simply to summarize the pieces that appear in the journal, but rather ask the panelists to relate their work to the conference's main theme of transition.

BILLBOARDS AND PETROCULTURES IN SOUTH-WEST TEXAS

Giovanni Frigo

This paper tells a story about petrocultures in South-West Texas. It is based on a "scholarly" road trip to the Trans-Pecos Pipeline (TPPL) area, which aimed at studying the protests surrounding TPPL and more generally the controversial nature of transnational energy projects. Driving West from Dallas on Interstate 20 the landscape made of grasslands, shrubs and anonymous suburbs slowly gives way to semi-desert open prairies. The horizon filled with pump jacks and dispersed cattle ranches progressively mixes with extensive wind farms, suggesting the idea that an energy transition is in front of your own eyes. In the vast and desolate landscape of West Texas billboards can be found along this road which crosses what has been affectionately called "Oil Country." In this paper, I will present photographic examples of billboards along with a commentary to suggest novel ways to make sense of both the visible (e.g. billboards, trucks) and the invisible (e.g. hundreds of miles of hidden pipelines) reality of oil and gas. Given their necessary conciseness, clarity and effectiveness, billboards contain profound subliminal and cultural references that are helpful to understand the complexity of petrocultures. It is in this sense that billboards can be seen as media that mediate and are mediated, artefacts capable of illustrating not just the obvious pervasiveness of fossil fuel extraction in the region, but also telling surprising stories about ghost cities, struggles and policy-making.

Giovanni Frigo is a Ph.D. candidate in the Department of Philosophy & Religion at the University of North Texas (UNT), in Denton, TX. His interdisciplinary research focuses on the fundamental links between energy, ecology, ethics, justice studies, and policy. Born and raised in the Italian Alps, Giovanni became passionate about energy issues by working at the construction of a passive house in Italy. He pursued his B.A. and M.A. at the University of Verona, Italy, and at the École des Hautes Études en Sciences Sociales in Paris, France where he mostly studied philosophy, anthropology and ethics in relation to environmental and energy issues. Giovanni is an outdoor enthusiast, rock climbing and hiking devotee, and mediocre chess player.

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LUBRICATED SUBSTRATES: DOMESTICATING EARTH INFRASTRUCTURE TO MANUFACTURE LIGHT

Elia Vargas

Crude oil is media. Lubricated Substrates reconnects the materiality of oil—specifically the hydrocarbon paraffin—with its early history steeped in mysticism, mythology, and medicine. This essay re-mythologizes oil as elemental media, an amalgam of hydrocarbons, decomposed bodies, latent solar radiation, other molecules reconfigured over time, and in relation to the electromagnetic spectrum. Such a reading reshapes the genealogy of oil history, and re-interprets contemporary western culture as an expression of crude oil. This refiguring is speculative and historical—a relational oil ontology—with an aim to illuminate unobserved power structures embedded within the particular mythology of crude oil as an agent of industrial capitalist energy extraction. This essay explores crude oil as a network of ideological formulation, enabling certain pathways of enunciation.

Following infrastructure theorist Keller Easterling, the meaning of this network is revealed through its disposition—not what it does, but how it does it and what its tendencies are. In this way, oil does not mediate culture, but rather co-produces cultural formulation. Crude oil is a relational ontology; there is no culture-without-oil separate from culture-as-an-expressive-potential-of-crude-oil. Contemporary culture intra-acts with crude oil as the lubricated substrate of matter's ongoing differentiation of the world. The material and metaphorical feedbacks of crude oil inform the material substrate amidst which the world expresses itself. "Lubricated Substrates" refigures crude oil as an agent of cultural formulation that requires rethinking relationships of deep time, media archaeology, embodiment and network path dependencies.

Elia Vargas is an Oakland based artist, curator, and researcher. He works across multiple mediums, including video, sound, and projection. He is co-founder and co-curator of the Living Room Light Exchange, a monthly salon on new media art and digital culture; half of improvisational modular synthesis duo systemritual; board member of the Soundwave Biennial; and a PhD student in Film and Digital Media at UC Santa Cruz. He is currently investigating the materiality of crude oil and light transmission in relationship to temporalities, flows, and cultural formulation.

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WORKING IN HYDROCARBONS: A BRIEF SURVEY OF PETRO-AESTHETICS

Bart Welling

What could be uglier, less artful, than fossil fuels? If our goal is to transform our petrocultures into alternative energy cultures, keeping as many hydrocarbon deposits as possible in the ground, then we clearly need not only different ways of seeing fossil fuels themselves (as something more than either magical substances or paragons of awfulness) but different ways of seeing how we see in petrocultures—how fossil fuels constitute the largely unacknowledged medium through which we currently see (and hear, touch, taste, smell, and know) virtually everything. "Petro-aesthetics" might seem like a contradiction in terms. At every stage of their unnatural journey from underground deposits through human culture and out into the biosphere, petroleum and other hydrocarbons repel the human senses and defile what most of us consider beautiful. In this paper, after briefly demonstrating how traditional, ugly petro-aesthetics paradoxically contribute to our continued dependence on hydrocarbons, I survey works by several literary and visual artists committed to grappling honestly with the strange materialities of fossil fuels at the levels of theme and form. What the artists have in common is a shared interest in challenging both the reigning aesthetic of petromodernity and its chief alternative, the ugly aesthetic, opening up space in the process for new ways of seeing, and living with, fossil fuels.

Bart Welling teaches classes in environmental literature and film, ecocriticism and animal studies, and rhetoric and narrative at the University of North Florida in Jacksonville. He has delivered papers at two Petrocultures conferences and is currently writing a book titled *No Blood for Hydrocarbons: Rethinking Energy, Reinhabiting the Modern World*.

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STANDING UP FOR CANADIAN OIL & GAS FAMILIES”: TRACING GENDER, FAMILY, AND WORK IN THE ALBERTA PETRO-ECONOMY

Alicia Massie

Drawing on the social media content of four pro-oil Facebook groups, we argue that these ‘subsidized publics’ play an increasingly critical role in facilitating oil and gas companies’ continued accumulation of fossil capital. We adopt O’Shaughnessy and Krogman’s (2011) analytical framework to reveal material-discursive contradictions obscured from view in the pages of these online groups. Through deploying gendered and familial discourses, these subsidized publics celebrate traditional gender roles, present oil as a ubiquitous and benevolent force, and blur the divide between oil and gas workers on the one hand, and absentee transnational employers on the other. In an era of advanced neoliberal petro-capitalism, these quasi-public entities are masking the inherently unequal power relationship that exists between the two. Moreover, in projecting a working-class ethos, we argue that these familial and gendered discourses create a homogenizing narrative, advancing the false notion of a “classless and horizontally beneficial” industry (Gaventa, 1982, p. 58). Our analysis disrupts neoliberal representations of de-gendered extraction and highlights the extent to which gender remains a key axis within resource communities.

Alicia Massie is a PhD Student in the School of Communication at Simon Fraser University and a Joseph-Armand Bombardier CGS Doctoral Scholar. She received her Master of Arts from Carleton University from the School of Linguistics and Languages, where her thesis focused on a critical discourse analysis of Enbridge’s legitimization of the Northern Gateway Pipeline. Her doctoral research interests center on issues of gender, labour, and race in the Alberta Oilsands. Her current work investigates the reproductive labour of women and people of colour underpinning the Albertan petro-economy. Some areas of scholarly interest include feminist theory, political economy, energy humanities, environmental communication, and labour histories.

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4D: BEFORE AND AFTER OIL: SPECULATIVE ENCOUNTERS WITH TIME, ENERGY AND FUEL I

203, 4 University Gardens

Session Organiser: Kevin MacDonnell & Clint Wilson III

As devastating before and after images flooded the media cycle in the aftermath of Hurricane Harvey, those of us living in Houston realized just how powerful the “before and after” trope could be for underscoring the collateral and temporal logics of climate change. This double panel takes seriously its call toward speculation by resisting claims to or analyses of the present, as such. Following Karen Pinkus’s *Fuel: A Speculative Dictionary* (2016), these panels conceive broadly of how forms of “energy” or “fuel” existed before and after a cultural period of literal use: that is, how they *transition* into and out of the present. In a moment defined by transition—what Dominic Boyer has called “energopolitical rupture” (2017) or the “anticipation of disaster” diagnosed by Imre Szeman (2017)—one can hear the temporal charge underpinning discussions about fuel. These papers may examine watershed scientific texts or apocalyptic literatures, but they will resist thinking in terms of “origin stories” or “disaster stories,” Edenic utopias or Atwoodian dystopias. Yet, to eschew the present is by no means to bypass our complicity, just as for Alexis Shotwell (2016) thinking “against purity” is to reframe environmental protections and outcomes. Restricting ourselves to the before and after of present fuel logics, therefore, we offer new maps that challenge where we think we’ve been, and where we fear we might be heading.

BEFORE AND AFTER THE BLACKOUT: FICTIONAL BLACKOUTS AND ENERGY FANTASIES

Jennifer L. Lieberman

This talk will engage with the “before and after” theme of the panel by examining the blackout as a fictional trope in various works of literature. I will trace the theme of power outages from Mark Twain’s 1889 novel, *A Connecticut Yankee in King Arthur’s Court* through more recent examples, such as Emily St. John Mandel’s 2014 novel *Station Eleven*. While these texts are not explicitly *about* climate change, I will argue that they can help present-day readers imagine the affects of large-scale socio-technical changes that would result from climate disasters. The blackout is most commonly depicted as a dystopian trope. In this way, it demonstrates how our naturalized dependence on electricity makes us vulnerable. Building on Amitav Ghosh’s *The Great Derangement* and other studies of climate and literature, I will demonstrate the limits of these fictional representations: even as they draw attention to our dangerous reliance on electrical systems, they also idealize electricity and often draw attention away from the environmental impacts of power generation. My talk will put these fictional narratives into conversation with materialist studies of actual electrical systems in order to propose how we might modify the trope of the blackout and the energy consumption that this trope promotes.

Jennifer L. Lieberman is an assistant professor of English at the University of North Florida (UNF), and author of *Power Lines: Electricity in American Life and Letters, 1882–1952* (MIT Press). Jennifer was a 2016–2017 Community Scholar in the Center for Community Based Learning, a 2017 Fellow for the Florida Blue Center for Ethics, and a 2017 recipient of UNF’s Presidential Diversity and Inclusion Award for her exceptional work in the classroom and community.

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BEFORE AND AFTER TURNPIKES: FOSSIL FUELS AND THE “TRANSPORT REVOLUTION” IN EIGHTEENTH-CENTURY BRITAIN

Kevin MacDonnell

The cultural imaginary surrounding mobility, motion, and speed has long been associated with fossil fuel-powered transportation technologies. And while Amitav Ghosh and Imre Szeman have both discussed the way energy sources like oil so often evade representation, fossil fuels are most readily visible in art, film, and literature in the appearance of the planes, trains, and automobiles they power. Such an inextricable relationship is fitting given the near- contemporaneous emergence of the first steam-powered transportation technologies and the first economic system entirely dependent upon fossil fuels—what Andreas Malm calls the “fossil economy.” This paper will explore the prehistory of the inextricable relationship between fossil fuels and transportation technologies by looking at how the development of the coal industry contributed to a sociocultural fascination with mobility and speed decades before the first vehicles were powered by steam. In particular I will look at the development of the turnpike system in Britain throughout the eighteenth century, which occurred mostly through acts of Parliament advocated for by figures ranging from Daniel Defoe to Adam Smith. The construction and renovation of the highway infrastructure through these “Turnpike Trusts” had the dual effect of making the distant, isolated coal mines of northern England and Wales more accessible, and thus more profitable, while also allowing newer, exceptionally faster carriage models to travel across British roads—a process referred to by economic historians as the “transport revolution.” It thus becomes possible to read the fascination with mobility and speed that characterizes mid-century novels like Susan Smythies’ *The Stage-Coach* (1753) and Laurence Sterne’s *A Sentimental Journey* (1768), among others, as products of an emerging fossil fuel infrastructure, built up around the need to transport coal—which had become a ubiquitous fuel source in England by the turn of the eighteenth century—quickly and efficiently.

Kevin MacDonnell a PhD student in English at Rice University studying seventeenth- and eighteenth-century literature, science, and technology. He is a pre-doctoral fellow at Rice’s Center for Energy and Environmental Research in the Human Sciences (CENHS).

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ELECTRIC POUND: READING ENERGY IN THE PISAN CANTOS

Veronica Belafi

Critics have spent a century interpreting Ezra Pound's "In a Station of the Metro" (1913): "The apparition of these faces in the crowd; / Petals on a wet, black bough." What is always neglected is the fact that this short poem is the product of a built environment utterly defined by energy. And yet, it is in Paris' electricity-powered metro that Pound defines the crux of his poetics—his rubric for making—as reaching "the point of maximum energy." In 1945, Pound drafted part of his *Cantos* inside an open-air cage on the grounds of an Italian work-camp. From this vantage point, he drew inspiration from another energy environment: "8 birds on the wire / or rather 3 wires," rearrange themselves on nearby power lines like a sky-writ musical score. Throughout the (eventually) typewritten *Pisan Cantos*, these bird-notes rearrange themselves across the page, forcing an interplay between energy and aesthetics in poetry and material culture. My reading of Pound, then, takes "energy" *literally*—not just metaphorically. How does poetry engage in and perform a poetics of energy? And what can poetry convey about its environment—natural or political—that other genres perhaps overlook?

Veronica Belafi is a PhD candidate in English Literature at Columbia University. After completing an MA at the University of Alberta, she moved to New York to pursue her interests in 20th-century poetry and the emerging field of the energy humanities. Her thesis, "Carbon Connectives: Reading Charles Olson's Energy Poetics," was awarded Columbia's Wetzsteon MA Essay prize.

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POETICS OF PLASTICS AND PLASTICITY: ADAM DICKINSON'S PETRO-POETRY

Molina Klingler

Ever since Leo Baekeland's development of Bakelite, the first synthetic plastic, in 1907, plastic has become an indispensable material that significantly shapes our planet's natural and cultural settings. From once being a celebrated icon of colorful Pop Art to becoming a symbol of ecological contamination, the relatively short history of plastic is marked by almost as many transformations of its reputation as of its physicochemical structure, appearances, and its cultural dissemination. Roland Barthes has already pointed out plastic's plasticity, its "very idea of its infinite transformation," as a reason for the substance's "success" and persistent place in our lives (*Mythologies*, 1957). Polymers do not only build the core for most synthetic as well as natural plastics, they also form principal structures of organic life forms, e.g. genetic coding via RNA polymerase. The macromolecules therefore embody the tension between what we regard as natural and/or synthetic. My presentation will scrutinize this uneasy relationship between Nature, science and language and provide an analysis of the poetics of plastic and plasticity in Adam Dickinson's poetry collection *Polymers* (2014). The contemporary Canadian poet understands plastic as "emergent expression of the petrochemical age" (*Polymers*, 7). I will investigate Dickinson's biosemiotics of petrochemical poetry, the molding of scientific language into poetic expression, and finally explore the epistemological potential of the creative process of translating plastic from material to metaphor.

Molina Klingler is a graduate student of English-Speaking Cultures and German Studies at the University of Würzburg (JMU Würzburg), Germany. She also completed a degree in pedagogy and worked as teaching and research assistant at the JMU Würzburg. She spent an academic year at the University of Teesside, UK, and one year at Eastern Illinois University, USA. Currently, she works as lecturer for the University of Würzburg-English-Language Program, co-organizer of the EASLCE webinars (European Association for the Study of Literature, Culture and the Environment) and assistant to the executive director of the GAAS (German Association for American Studies). Her research interests include literary theory, poetry and ecocriticism.

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OFFSHORE: POETICS, CATASTROPHE, PEAK OIL (7 YEARS ON)

Jonathan Skinner

Seven years ago I edited "Offshore: Poetics, Catastrophe, Peak Oil," a guest feature for *Interim Magazine*: <https://issuu.com/interimmag/docs/interimvol29issuu> The dossier gathered work by poets and artists responding to the 2010 BP offshore oil drilling catastrophe in the Gulf of Mexico. I asked contributors if they would be willing to make an appointment with their congressional representative, to read a poem on the catastrophe, have a conversation and document the exchange. Nearly forty poets answered my call, about a quarter of whom would engage with their elected officials. The bill we targeted, HR 501: Implementing the Recommendations of the BP Oil Spill Commission Act, disappeared amidst partisan gridlock. But many of the feature's poets have sustained their engagement with the petroculture, producing research-based, experimental work, with an activist edge. The ecopoetics of plastic, a possible stratigraphic indicator of the Anthropocene, has become epochal. As the Trump Administration opens public lands and offshore waters to an unprecedented wave of prospecting and extraction, and as the control of US Congress hangs in the balance of the 2018 midterm elections, I revisit Offshore, to consider how poets have continued to write in relation to the petroculture, and to ask if poetics might, once again, intervene.

Jonathan Skinner founded the journal *ecopoetics*. His poetry collections include *Chip Calls* (Little Red Leaves, 2014), *Birds of Tiff* (BlazeVOX, 2011), *Warblers* (Albion, 2010) and *Political Cactus Poems* (Palm Press, 2005). Recent essays on ecopoetics appear in *American Literature in Transition, 2000-2010* (Cambridge UP, 2017), *Ecopoetics: Essays in the Field* (Wesleyan UP, 2018), *Ecocriticism - Environments in Anglophone Literatures* (Anglistik & Englischunterricht, 2017), *Big Energy Poets: Ecopoetry Thinks Climate Change* (BlazeVOX, 2017), and *Writing the Field Recording: Sound, Word, Environment* (Edinburgh UP, 2018). Skinner teaches in the Department of English and Comparative Literary Studies at the University of Warwick.

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4F. THEATRE

205, 4 The Square

Speaker Organised Panel

“I DON’T REALLY FEEL I BELONG AT A CONFERENCE CALLED ‘WHAT THE FRACK’”: THE ‘ENERGY TRILEMMA’ IN BRITISH ‘PETRODRAMA’

Christiane Schlote

As Rahman Badalov has observed, the spectacle of “blazing oil gushers make marvelous cinematographic material” (1997) and studies of the representation of fossil fuels in film, literature and the visual arts have flourished in the field of energy humanities. However, what has garnered less critical attention is drama’s increasing interest in petrocultures. Drawing on Douglas Holmes’s notion of ‘fast capitalism’ and Rob Nixon’s conceptualisation of ‘slow violence’, this paper traces the trajectory of British ‘petrodrama’ from John McGrath’s ‘ceilidh play’, *The Cheviot, the Stag, and the Black Black Oil* (1973), to Alistair Beaton’s *Fracked: Or Please Don’t Use The F Word* (2016) and Ella Hickson’s *Oil* (2016), and examines the latter two plays’ generic, gendered and localised engagement with post-oil imaginaries and their concomitant economic, ecological and socio-cultural effects and the plays’ respective staging of the ‘energy trilemma’ (energy security, energy equity and environmental sustainability), in particular.

Christiane Schlote teaches drama and postcolonial literatures and cultures at the University of Basel. She has published extensively on transnational literatures, British theatre and drama, war and commemoration, Anglophone Arab writing, postcolonial cityscapes and Latina/o American and Asian American culture. She is the author of *Bridging Cultures: Latino- und asiatisch-amerikanisches Theater in New York* (1997) and co-editor of *New Beginnings in Twentieth-Century Theatre and Drama* (with Peter Zenzinger, 2003), *Constructing Media Reality. The New Documentarism* (with Eckart Voigts-Virchow, 2008) and *Representations of War, Migration and Refugeehood: Interdisciplinary Perspectives* (with Daniel Rellstab, 2015).

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‘THE HACIENDA MUST BE BUILT’: IN PRAISE OF THE DÉRIVE –A DIFFERENT KIND OF FLOW

Carl Lavery

Of all avant-garde groups, the Situationist International (SI) (1957-72) was the most vociferous in its denunciation of the larger social, artistic and political consequences produced by the Global North’s post-1945 investment in ‘petroculture’. Against the flows of oil that transformed Paris into an enormous motorway, spatially and temporally addicted to ‘automobility’, the SI offered the *dérive*, a way of drifting on foot through urban space that celebrated collectivity, random encounters, and the city as a space of play and discovery. While much has been written about the *dérive* (or drift) in geography, literature and urban studies, no one has yet attempted to think about its ecological affordances, the sense in which, by going back to the 1950s, one might discover a different form of living that already contested the expanded and pernicious consequences of petroculture: most notably, its production of privatised space, empty, commodified time and creation of a spectacular economy. Instead of the motorway, the SI proposed to build a Hacienda in a New Babylon, and, by so doing, to encourage a more sensual, democratic and environmentally progressive mode of urban existence. This paper seeks to address the SI’s clinical and creative critique of a nascent petroculture in France in the 1950s by focusing on the performative aspects of the *dérive*. In line with Guy Debord’s decidedly ‘riverine’ notion of revolutionary history – ‘the rivers of revolution go back to when they came in order to flow again’ – my argument is based on a drifting historiography. One that does not imprison the *dérive* in history, but, by contrast, seeks to allow it to flow again in our present.

Carl Lavery is Professor of Theatre and Performance at the University of Glasgow. His recent publications include, *Rethinking the Theatre of the Absurd: Ecology, Environment and the Greening of the Modern Stage* (2015), 'On Ruins and Ruination', *Performance Research* (2015) and a special issue of the journal *Green Letters: Studies in Ecocriticism*, 'Performance and Ecology: What Can Theatre Do?' (2016). The latter was reissued in book form by Routledge in 2018. He is currently working on a new project *Theatre and the Earth: Interrogating the Human*.

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TWO KUWAITI THEATRICAL PRODUCTIONS –KUWAIT IN THE YEAR 2000 (1965) AND THE CLOCK HAS CHIMED (1984)

Faisal Adel Hamadah

This paper will look at two Kuwaiti theatrical productions – 1965's *Kuwait in the Year 2000* and 1984's *The Clock Has Chimed*. The first play, a fantastical fiction, imagines a Kuwaiti society over-saturated with oil wealth. The characters do no work, import all their food, and spend their time jet-setting to global capitals in their personal rockets, prophetically anticipating the 'rentier state' literature that has come to define political economic approaches to Kuwait's state-society since the 1970s. At the end of the first half of the play, the oil 'runs out', and the characters try and fail to revert to their pre-oil modes of subsistence. The second play, which is much more contemporary and naturalistic in its vision, is an ostensible restaging and updating of the first starring much of the same cast. It imagines a similar scenario, but instead of placing oil as the source of the characters' limitless wealth, the play imagines the wealth as rooted in Kuwait's *Souq al-Manakh*, the unregulated stock market that boomed on the back of post-dated checks and dramatically crashed in 1982, leaving over \$94 billion in IOUs and necessitating a state bailout. I will tease out the link between oil and speculative finance implicit in these two plays' imaginaries, and read them by focusing on Kuwait's oil-fueled social, economic, and institutional developments. I will give specific focus to the Kuwaiti state's interventions, and the myriad popular movements that attempted to check its autocracy. To do so, I will develop a parallel between Kuwait's vital state-funded theatrical movement and its regionally unique parliamentary democratic tradition, drawing on Timothy Mitchell's arguments on the link between fossil fuels and democracy. Finally, I will situate the plays as registrations of the uneven development of Kuwait's political sphere, both locally and regionally, by analyzing how two decades of theatrical practice shift the Kuwaiti theatre's approach to mimesis and the representation of social types, and how oil, once the resource at the heart of Kuwait's social and political imaginary, is obscured as Kuwait becomes fully integrated into the capitalist world-system.

Faisal Adel Hamadah is a translator, researcher and associate lecturer based at Queen Mary University's School of English and Drama. He is currently completing his PhD on the history of theatre in Kuwait with Nicolas Ridout.

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4G. WORLD LITERATURE AND OIL

205, 5 University Gardens

Speaker Organised Panel

OIL AND PUERTO RICAN LITERARY AND VISUAL CULTURE AFTER 1975

Kerstin Oloff

What does it mean to think oil from an island with no oil production, in which infrastructure and industry is based heavily on imported oil? Luis Rafael Sánchez's *La guaracha del Macho Camacho* (1976) - an allegorical novel about a debilitating traffic jam in San Juan - is one of the most prominent texts to think through this question: published at crucial moment in Puerto Rican and world history, it has been seen as symptomatic of the crisis of Operation Bootstrap and its established heteronormative tropes of narrating the nation. The novel highlighted the centrality of oil to the island's infrastructure and society as a whole - despite the lack of derricks. It is thus perhaps no surprise that within Puerto Rican literary and visual culture, oil has been relatively prominent and often surfaces through a range of tropes: cars, fumes, tv screens and fast food. In this paper, I will examine a range of literary and visual texts, arguing that because of Puerto Rico's oil-suffused colonial relation to mainland United States, Puerto Rican culture has long shed light on oil's centrality to the related phenomena of de-ruralisation, food de-localisation and, since the late 20th century, deindustrialisation.

Kerstin Oloff is Assistant Professor at the University of Durham. She has published on Caribbean, Mexican and U.S. literary and visual culture, with a focus on gothic aesthetics and ecological change.

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THE OIL BOOM IN TRINIDAD

Natasha Bondre

This paper will examine the oil boom in the Caribbean island of Trinidad during the 1970s, focusing on the specific problems of the period through the lens of two novels: *Is Just a Movie* by Earl Lovelace and *Guerrillas* by V. S. Naipaul. Emphasising the oil-led economic development that Trinidad underwent throughout this decade, whilst remaining mindful of its history as a peripheral commodity frontier, this paper will examine the responses of these two literary works to the events that marked the decade, most notably the Black Power and NUFF guerrilla movements, which opposed the PNM government, and the oil-boom which led to an unstable, unsustainable prosperity. Considering the themes of petro-capitalism as ecological regime, this paper will examine the literary reactions of Naipaul and Lovelace as they chart the problems thrown up by the presence in Trinidad of what Eric Williams called 'Emperor Oil', while also making links to the rest of the 'expanded Caribbean's' imbrication in contemporary petro-capitalist global networks.

Natasha Bondre is a second year PhD student at the University of Warwick, working jointly in the Yesu Persaud Caribbean Centre and the Department of English and Comparative Literary Studies. Her doctoral thesis examines the ecological and social nature of petro-capitalism in what has been termed the 'expanded Caribbean,' through studying the literatures, in Spanish and English, of specific nation-states in the region. Her general research and teaching interests consist of (but are not limited to): post-colonial literature and theory, eco-criticism, global Anglophone and Hispanophone literatures, disaster studies and theories on capitalism as ecological regime.

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ANTHROPOCENE ART: APOCALYPTIC REALISM AND THE OIL IMAGINARY IN THE NIGER DELTA

Philip Aghoghovwia

The Niger Delta represents in the global public mind the extremely negative impact of extractive capitalism. The region evidences the apocalyptic future promised by climate change, the devastation of which is already a quotidian reality for local communities. This paper reads across literary genres that trope on the Anthropocene as one marked by apocalyptic realism in the River Delta. It shows how the petro imaginary reframes Anthropocene discourse not as abstract processes captured and charted by means of scientific modelling. Rather, as actual lived events happening in real time: the oil spills and blowouts, which pollute water bodies, the visible oil sludge rendering vast farmlands and coastal plains wastelands, the gas flares that light up the skies denying surrounding communities the respite of twilight. In a sense, literary apocalypticism vivifies environmental challenges of our time by mobilizing metaphor to frame climate change as a profound actuality of place and to untether its discourse from the stasis of scientism (and its antithesis) within which it is trapped. Anthropocene art, shot through with material textures of the quotidian, offers insights that push against the limits of the “energy Eschaton” which fossil fuel presents, so long as one is able to track the extant dimensions of its present impacts.

Philip Aghoghovwia holds a PhD in English from Stellenbosch University, and teaches English and Cultural Studies at University of the Free State, South Africa. A fellow of African Humanities Programme of the American Council of Learned Societies (ACLS), he is completing a book manuscript titled “Reading Petrocultures in Nigeria’s Niger Delta.” His most recent essays appeared in *Social Dynamics: a Journal of African Studies*, *Safundi*, and in *Fueling Culture: 101 Words for Energy and Environment* (Eds. I Szeman & J. Wenzel. New York: Fordham UP, 2017).

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RESOURCE CURSES AND RESOURCEFUL RESISTANCE: GENDER VIOLENCE AND IRREAL OIL ENVIRONMENTS IN TWO POSTCOLONIAL WOMEN’S NOVELS

Susan Comfort

The story arc of the resource curse has long dominated the narrative trajectories of global neoliberal petroculture. Endemic political corruption, criminality, ecological catastrophe—all are familiar colonial allegories that mask and mystify capitalist imperialism’s devastating extraction regimes imposed on postcolonial peripheries. For example, a 2012 World Bank report on Iraq, *The Unfulfilled Promise of Oil and Growth*, constitutes a veritable model of neoliberal petrocultural knowledge-production. Even as the report provides voluminous data analysis to account for the catastrophic declines in health, education, employment in the midst of country’s recent wars, the report is entirely concerned, as the report’s title suggests, with the country’s internal failures to realize the development of an economy based on oil. Indeed, the report characterizes recent events in Iraq as a “series of divergences” from a ‘natural’ course of market commodification. Similarly, traces of the resource curse story are discernible in recent World Bank web reports on Nigeria that correlate economic stagnation to “oil dependency” and “corruption.” As Michael Watts has argued, “What is striking in so much of what passes as ‘resource politics’ is the total invisibility of both transnational oil companies . . . and the specific forms of rule associated with petro-capitalism” (113).

Two postcolonial women’s novels, Buchi Emecheta’s *Destination Biafra* (1982) and Betoool Khedairi’s *Absent* (2005)—which feature two different peripheral sites in the world-system of oil, Nigeria and Iraq—contest the hegemonic narrative of the resource curse. They both trace its ideological protocols, especially those that attribute environmental degradation to racialized, gendered constructions of sexual promiscuity and moral corruption. Instead, both novels repeatedly link devastated socio-ecological conditions to an uneven world-system. Typically read as a feminist contribution to the tradition of Nigerian Civil War Literature, Nigerian writer Buchi Emecheta’s *Destination Biafra* may also be read as an account of oil capitalism’s attempt to re-impose hegemony over West African oil after decolonization. Regularly cited as a feminist depiction of Iraq

during the first Gulf War and the 1990s sanctions, Iraqi-Scottish writer Betoool Khedairi's *Absent* may also be considered an important dramatization of oil imperialism in an era of hegemonic instability, specifically from the end of the Cold war to the beginnings of neoliberalism.

This articles explore how the two novels represent the effects of an uneven world-system of oil on peripheral postcolonies, especially how these novels register the devastating tolls on gender relations and women's lives, particularly through their focus on socio-ecological changes in daily life. Both novels feature the increased burdens on women's labor and ecosystems as earlier systems of provisioning and reproduction break-down and struggles emerge to find substitutions. What most interests me is how both novels use what the Warwick Research Collective has called "peripheral aesthetics" to represent the terror and fear felt by women in insecure and violent socio-ecological conditions. In doing so, both novels are also keenly focused on the "irreal" ironies and contradictions emerging from these conditions, as they portray the cruel logics of extractive conditions but also the possibilities of a shared life of environmental justice cultivated around the fulfillment of human and non-human needs.

Susan Comfort is an associate professor of English at Indiana University of Pennsylvania, where she teaches Postcolonial and Third-World Studies, and Feminist and Queer Environmental Justice Studies. Her publications in these areas include research on Ken Saro-Wiwa and environmental justice struggles around oil, which appeared in the now widely cited 2002 *Environmental Justice Reader* edited by Rachel Stein, Joni Adamson and Mei Mei Evans. She has also served as guest editor for a special double issue of the cultural studies journal, *Works & Days*, entitled *Invisible Battlegrounds: Feminism in the Global Age of War and Imperialism*. In recent years, she received a Fulbright to study in India, where she researched feminist agents of environmental change in Indian culture and literature. Currently, she serves on the boards of the IUP Center for Northern Appalachian Studies and also on the steering committee for the new IUP Interdisciplinary Program on Sustainability Studies, for which she is one of the co-founders.

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4H. ALTERNATIVE REALITIES, GAMING AND THE NEOLIBERAL SUBLIME

101, 5 University Gardens

Speaker Organised Panel

JUST HOW CAN WE TELL ALTERNATIVES TO PETROREALITY? KALADESH: AN INSTRUCTIVE FAILURE

Francis Gene-Rowe

In 2016, games company Wizards of the Coast released *Kaladesh*, an expansion to their popular trading card game, Magic: The Gathering. *Kaladesh* depicted—via card art, online stories, game mechanics, etc.—the world of Kaladesh, a place of boundless technological creativity, vibrant metropolitan culture, and harmony between civilization and nature. *Kaladesh*'s politics were progressive, its world centred around non-white culture and featuring same-sex relationships and postbinary lifeforms, whilst its storyline revolved around political conflict between heterotopian communities of artificiers and a colonial Consulate. Underpinning these elements was Kaladesh as a world brimming with aether, a ubiquitous and seemingly limitless source of fuel, serving as inspiration for artificiers' inventions and shaping the world's biosphere. *Kaladesh*'s flagship mechanic (and in-game depiction of aether) was "energy," and the majority of cards featuring it were aesthetically aligned with either the rebel artificiers or Kaladesh's animal species, rather than the Consulate.

Kaladesh, then, depicted a quasi-utopia of boundless energy, seemingly antithetical to oil capitalist reality. However, *Kaladesh*'s progressive politics collapse under closer scrutiny, whilst the energy mechanic was considered "parasitic," contributing to oppressive, homogeneous gameplay. So long as your deck revolved around accumulating and consuming energy, the mechanic outstripped any alternative. Ultimately, aether/energy behaves like oil, and both the gameplay it engenders and the fictive world it overflows are extensions of petromodernity. This paper sets out to evaluate both the shortcomings and the possibilities of transmedia storytelling and worldbuilding systems as avenues for creating alternatives to petroreality.

Francis Gene-Rowe is a doctoral candidate at Royal Holloway, University of London. He co-directs the London Science Fiction Research Community (LSFRC), and co-edits *Fantastika Journal*. He was the recipient of the 2017 Science Fiction Research Association (SFRA) Best Student Paper Award.

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VIDEO GAME ENVIRONMENTALISM: REGISTERING THE ANTHROPOCENE IN INTERACTIVE MEDIA

Steve Harvie

We assume interactive media such as video games show no interest in ecology, resource management, or questions of sustainability, but the opposite is often true. While many video games embed problematic assumptions about resource production and consumption through their game mechanics, recent developments in game design show an appreciation and concern for the ways humanity interacts with the environment. For instance, *Cities: Skylines* (2015) by Paradox Interactive is a city simulation game in which the player designs and constructs cities by zoning land, planning infrastructure systems and building communities. Last year Paradox released a 'green cities' expansion to the game, tasking players to build a city in line with green politics. Or consider David O'Reilly's experimental art game *Everything* (2017), in which the player inhabits a universe without humans, and whose only purpose is to exist as all the various objects which populate our planet (and beyond), from pianos and tables, to rocks and stars. By excluding the human, *Everything* places the environment at the centre of its game world, combating mainstream game design which is decidedly anthropocentric. This paper therefore proposes to show how video games can facilitate the practical and philosophical reorientation required for the period of transition.

Steven Harvie has graduated from the University of Glasgow with an undergraduate degree in English Literature, and a Masters degree in Glasgow's Mlitt Fantasy course, a programme which traces the history and development of the nebulous fantasy genre. He is now looking to pursue a PhD in Information Studies, to research the interactions between video games and neoliberal capitalism, and how games can be used to question and subvert systems of oppression.

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"AN ENTERPRISE OF EPIC PROPORTIONS": THE ALBERTA OIL SANDS AND THE NEOLIBERAL SUBLIME
Richard Kover

While the Alberta Oil sands are often presented as purely a matter of pragmatic common sense, commentators have often pointed out that the enormous potential economic, political and environmental costs involved call into question its straightforward necessity and humdrum utility and noted that promoters of the oil sands frequently couch their defence of the project in very hyperbolic, transcendental and sublime terms. Nor is this surprising, for as Philip Blond has noted, in our largely secular culture the sublime remains one of the last remaining vestiges of transcendence that still has emotive force in our society. This presentation will look at how much of the argumentative force of neoliberalism can be seen to rest upon what may be termed the 'neoliberal sublime.' Drawing on the writings of Friedrich Hayek and Milton Friedman, this presentation will argue that neoliberalism presents the market as a sublime object which conforms both to Kant's conception of the mathematical and dynamic sublime. It will then examine how the rhetoric of this neoliberal sublime informs much of the current justification for the Alberta Oil sands.

Richard Kover holds a PhD in philosophy from the Katholieke Universiteit Leuven, Belgium, and is currently a lecturer with the Office of Interdisciplinary Studies at the University of Alberta. He is also the managing editor of *The Trumpeter* and the author of a number of peer reviewed publications. He specializes in environmental philosophy and ethics, philosophy of technology, philosophical anthropology, political and cultural theory, and contemporary Continental philosophy. He is particularly interested in the aesthetic, cultural and symbolic dimensions of the petroleum industry, both globally and in Canada.

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PLENARY LECTURE 4 | 10.45 - 12.15 | FRIDAY 31ST AUGUST

MELT/RISE: A SONG OF FLOOD AND ICE

Dominic Boyer & Cymene Howe, Rice University
Charles Wilson Lecture Theatre

Global warming is the petrocultural gift that keeps giving. The melting of glaciers and ice sheets appears to be accelerating, as is the thermal expansion of the oceans, and these vectors together virtually guarantee that sea level rise by 2100 will meet or exceed the highest projections of UNFCCC scientists. Rising surface temperatures likewise guarantee new conditions of drought and flood, exacerbated by a slowing jet stream that will tend to stall weather systems in unpredictable ways. Our changing cryospheres and hydrospheres promise misery to millions across the planet. But they also reveal forms of material connectivity that could potentially be mobilized in the struggle against climate change and the petroculture that produced it. In this keynote, we juxtapose Cymene's research on the loss of glaciers in Iceland with Dominic's new project on Houston area flood victims' recovery from Hurricane Harvey to explore a concept we're terming "hydrological globalization," the sociomaterial connections and cultural impacts that follow from the redistribution of water across the planet. We discuss in particular how glaciers are being reconceptualized as vulnerable beings and how Houstonians are coming to terms with the more common presence of floodwater. And we introduce a new tool from NASA-JPL that allows us to better understand what specific water sources are contributing to sea level rise in which parts of the world and thus to visualize hydrological globalization in action. Our hope is to build interest in a Melt/Rise research network that will study the effects of hydrological globalization across the world.

Cymene Howe is Associate Professor in the Department of Anthropology at Rice University and founding faculty of the Center for Energy and Environmental Research in the Human Sciences (CENHS). She is the author of *Intimate Activism* (Duke 2013) and *Ecologics: Wind and Power in the Anthropocene* (Duke, forthcoming), which analyzes the social and environmental effects of renewable energy development in Southern Mexico. She is co-editor of *The Anthropocene Lexicon* (Punctum 2018), a collection of keywords that speak to anthropogenic impacts on Earth's bio-, litho-, aqua- and atmospheres. Her current project, *Melt: The Social Life of Ice at the Top of the World*, aims to understand cryohuman interrelations and the implications of rapidly warming conditions in the Arctic and beyond. The *Melt* project serves as the basis for a documentary film, currently in production, which narrates the story of Iceland's first well-known glacier to disappear due of climate change. Howe also serves as co-editor for the journal *Cultural Anthropology* and the *Johns Hopkins Guide to Social Theory*, and she co-hosts the Cultures of Energy podcast (available on itunes).

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Dominic Boyer is Professor of Anthropology at Rice University and Founding Director of the Center for Energy and Environmental Research in the Human Sciences (CENHS, culturesofenergy.org), the first research center in the world designed specifically to promote research on the energy/environment nexus in the arts, humanities and social sciences. He is part of the editorial collective of the journal *Cultural Anthropology* (2015-2018) and also edits the *Expertise: Cultures and Technologies of Knowledge* book series for Cornell University Press. His most recent monograph is *The Life Informatic: Newsmaking in the Digital Era* (Cornell University Press, 2013). With James Faubion and George Marcus, he has recently edited, *Theory can be more than it used to be* (Cornell University Press, 2015) and with Imre Szeman has developed *Energy Humanities: An Anthology* for Johns Hopkins University Press (2017). His next book, *Energopolitics*, is part of a collaborative multimedia duograph with Cymene Howe, which will explore the complexities of wind power development in Southern Mexico. With Howe, he also co-hosts the "Cultures of Energy" podcast (available on iTunes, PlayerFM and Stitcher).

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PANEL SESSIONS 5 | 13.15 - 14.30 | FRIDAY 31ST AUGUST

5A. JUST POWERS: ENERGY. FEMINISM. DECOLONIZED FUTURES

Charles Wilson Lecture Theatre

Session Organiser: *Sheena Wilson*

Featuring members of the *Just Powers* team at the University of Alberta, this panel will address the impact and importance of de-colonial feminist theory and practice for thinking through alternatives to petrocapitalism. *Just Powers*— funded by the Future Energy Systems Canada First Research Excellence Fund (CFREF), the Social Sciences and Humanities Research Council of Canada (SSHRC), the Francophone Secretariat of Alberta, and the Kule Institute for Advanced Study (KIAS)—involves thirty researchers from across Canada, at every level of the academy, from undergraduate researchers to full professors, from the arts and humanities to engineering and science, as well as Indigenous and non-Indigenous community members, government and policy makers. Just as our current society – this petroculture that we live in – has been shaped by oil, so too will our futures be shaped around *new energy systems and the networks of power that develop around them*. This panel will be organized around the central idea of the *Just Powers* research network: that energy transition is one of the most pressing intersectional feminist issues of our time.

JUST POWERS AS FEMINIST INTERCULTURAL INTERMEDIA INTERRUPTION

Sheena Wilson

This paper explores the relationships between the concepts of petrofeminism and deep energy literacy. Deep energy literacy demands meaningful reflection on how energy sources and systems are not only technological and infrastructural but also social. It requires an accounting of how oil-powered patriarchal colonial capitalism and the climate change that it has triggered have produced and continue to enforce extreme inequities built on histories of systemic violence that disadvantage the majority of the global population living on the margins of modern life, not to mention a whole host of species endangered on a warming and increasingly toxic planet. New energy sources will create new material conditions for the forms and habits of social life out of which new politics, new economies, and new ways of being and doing will arise. This talk will argue for feminist decolonial energy transition, with its political potential to resist and redress the ongoing inequities of the age of oil and fossil-fuelled power, and how intermedia interruption are part and parcel of a feminist project of resistance.

Dr. Sheena Wilson is Associate Professor at the University of Alberta, co-director of the international Petrocultures Research Group, and research-lead on *Just Powers*, an interdisciplinary and community- engaged initiative focused on climate justice organized around socially just energy transition for all. Funded by a Tri-Council SSHRC grant and the *Future Energy Systems'* Canada First Research Excellence Fund (CFREF), the research initiatives ongoing under *Just Powers* include, amongst others, *Feminist Energy Futures: Power Shift and Environmental Social Justice*; 2) *Speculative Energy Futures* 3) *iDoc* and 4) *Bigstone Cree: A Vision for the Future*. Dr. Wilson's monograph in process is titled *Deep Energy Literacy: Toward Just Futures*.

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SUBALTERNITY, THE FETISH AND ENERGETIC COMMON- BEING

Sourayan Mookerje

Feminist, decolonial and socialist environmental social justice movements confront a historical conjuncture marked by neo-fascist accumulated violence, on the one hand, and green passive revolution, on the other: racial-colonial capitalism's plan A and plan B for "business as usual". Regenerative practices of common wealth creation, however contradictory, are indispensable for egalitarian social justice interventions in cascading socio-ecological crises and their hot and cold proxy wars. Drawing upon the resources of intermedia theory, social reproduction feminism and post-Western Marxism, this paper engages this situation and theorizes the problematic of scale as it relates to the class and cultural politics of renewable energy transition, the fetish form and subaltern multitude social contradictions.

Sourayan Mookerjea is director of the Intermedia Research Studio at the Department of Sociology, University of Alberta where he specializes in decolonizing social theory, critical globalization studies, and intermedia research. His current projects include SSHRC funded research on The Commons and the Convergence of Crises, Toxic Media Ecologies: Critical Responses to the Cultural Politics of Planetary Crises and is co-director of Feminist Energy Futures and iDoc@Just Powers. He is a founding member of RePublicU, a critical university studies project, and of the Arts and the Anthropocene research creation CoLab at the University of Alberta.

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A CREE VISION FOR THE FUTURE: AN INDIGENOUS FEMINIST ANALYSIS OF MAINTAINING A LAND BASED CULTURE WHILE SURROUNDED BY AN OIL ECONOMY

Angele Allook/Bigstone

This paper describes a project between the Just Powers team and the Bigstone Indigenous Lands, Wildlife, and Environment Office to produce the Bigstone Vision for the Future - Video Project. The project involved the participation, collaboration, interviews and input from Bigstone Cree Nation elders, traditional knowledge holders, and land users, and community leaders. Using an Indigenous research methodology, the project was developed and designed to the benefit and needs of the community. The objective of this project is to provide, to a broad Indigenous and non-Indigenous audience, the perspective of Bigstone Cree Nation members on the resource extraction projects and activity within the First Nations traditional territory. The project also provides the perspective of Bigstone Cree Nation members on what it means to live in relationship to the land and to capture on film traditional land uses such as hunting, harvesting and cultural practices. Insights into the visions of the future are revealed by the community members, given the nation will remain on these territories well after these resource extraction projects are completed. This paper reveals the complex ways Indigenous peoples grapple with and resist the colonial, capitalist, and patriarchal history at the nexus of the oil sands region, within the context of reconciliation and consultation discourses by the nation state.

Dr. Angele Alook is proud member of Bigstone Cree Nation, an Indigenous labour researcher for the Alberta Union of Provincial Employees (AUPE), Staff Advisor on the Environmental Committee for AUPE, and steering-committee member for the Indigenous Labour History Project for ALHI (Alberta Labour History Institute). Dr. Alook also brings Indigenous and feminist perspectives and research methods to several Canada Tri-Council-funded initiatives concerned with climate and energy justice, including the Corporate Mapping Project and Just Powers.

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SENSING THE ANTHROPOCENE: AESTHETIC ATTUNEMENT IN AN AGE OF URGENCY

Natalie Loveless

In a time of unprecedented climate catastrophe and ecological genocide we are in desperate need of robust responses to global warming; this demands not only technological innovation, but social and cultural shifts, as well as political and economic reorganization to help us move beyond our toxic ways of doing life under capitalism. Artistic practices and forms have a role to play in achieving these goals. Art seeds the critical and speculative imaginations needed to trouble our current ways of living and dying. What art contributes, at this critical historical moment, is skill in creating aesthetic and affective spaces within which we not only reflect on *what is so*, but to work on imagining otherwise...on *modelling* things otherwise. This paper will describe an artistic research project that I am beginning that explores the distinction between art *on ecology* and art that is *formed ecologically*. As well as giving theoretical and art historical background for this distinction, I describe some of the artistic methodologies that I am exploring as a part of the project, each of which will result in a scholarly book chapter and an performance-based daily-practice project. Through this I argue for the importance of artistic practices, as practices of aesthetic micropolitical re-attunement, as ways of encouraging affective resilience and imaginative re-worlding.

Dr. Natalie S. Loveless is a conceptual artist, curator, and associate professor of contemporary art history and theory in the Department of Art and Design at the University of Alberta, where she also directs the *Research-Creation and Social Justice CoLABoratory*. She is co-lead of *Speculative Energy Futures*, a multi-year project that is part of the *Just Powers* initiative led by Dr. Sheena Wilson and funded by the Future Energy Systems CFREF, the Kule Institute for Advanced Study (KIAS) and a SSHRC Insight grant. Her book, *How to Make Art at the End of the World: A Manifesto for Research-Creation*, is forthcoming (2018) with Duke University Press.

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DOCUMENTING DESIGNS FOR THE FUTURE

Mary Elizabeth Luka

Understanding how and where civic engagement happens during social transformations is a key concern that can be addressed through interdisciplinary domains including technology, culture and the arts. Such research often requires collaboration with other researchers, participants and organizational partners. And it is often iterative. To do such analysis in my own work, I mobilize a concept I call *creative citizenship*. With iDoc, part of the \$75 million Future Energy Systems initiative at the University of Alberta, the intent was to document varied understandings of the social (and scientific) transitions required, through a limited series of interviews and related media shoots. However, the iDoc team quickly realized that we needed to involve policy makers, activists, and community members in the conversation, as well as scientists, especially since many projects were not explicitly seeking civic input. At iDoc over the last year, we have produced a vast digital collection of video and audio recordings including interviews, events, and edited reflections; the coming year promises an equally ambitious collection agenda. The goal remains the same: iDoc seeks to unpack how diverging—and converging—ideas about current and future societies are guiding the ongoing energy transition. As the project morphs from an academic documentary process to an open access digital archive, it becomes a site that materially mediates together competing and complementary visions, as we expected – but only if we can find yet more collaborators to help us parse that material, now and in the future.

Dr. Mary Elizabeth Luka is Postdoctoral Fellow for iDoc and Speculative Energy Futures at the University of Alberta. Dr. Luka is an award-winning scholar, activist and digital producer for arts, culture and digital media, as well as in social enterprise, broadcasting, telecommunications, and creative management policy, planning and practice. She studies modes and meanings of creativity and innovation in the digital age, to investigate how civic, science and business sectors are networked together. iDoc and SEF are funded under the banner of *Just Futures*, including Future Energy Systems CFREF and the Feminist Energy Futures SSHRC grants.

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5B. OIL HETEROTOPIAS. CONTINUITY AND RENEWAL IN TIMES AND SPACES OF TRANSITION I

101, 4 University Gardens

Session Organisers: Mara Benadusi, Douglas Rogers & Francesco Zanotelli

In Foucault's controversial yet inspiring text *Of Other Spaces* (1986), "heterotopias" are linked to concerns about time and space, notably time/space intervals, breaks, accumulations and transitions. Mutating at different points in history, the space/time nexus occupied by the fossil fuels industry is particularly suited for making use of this notion. Our panel explores the heterotopic character of energy transitions in which petroleum contradictory elements coexist: multiple overlapping visions of economic development, different forms of energy production combined, even incompatible imaginaries of the past, present and future, and their conflicting moral regimes. Paper presenters will scrutinize how energy politics of the past intersect and articulate with policy and politics of/for the future, and what specific historical paths contribute to forging these ambivalent spaces in different ethnographic sites. We will analyse transitions that never quite happened as in the case of transnational oil-into-food programs, as well as ongoing industrial changes as in the case of the move toward a low-carbon production or the renewing of oil extraction and transformation within the framework of sustainability or local linkages. Papers will also inquiry the moral economy governing the trading of specific oil by-products as well as the immaterial financial products derived from renewable energy sources.

PETROPROTEIN AND THE SPACES OF THE COLD WAR

Douglas Rogers

This paper explores an energy transition that never quite happened: the effort of the world's oil companies, starting in the late 1950s, to solve a projected global food shortage by growing protein on petroleum feedstocks. Beginning at BP facilities in France and extending quickly to the UK, Italy, Japan, the United States, and the Soviet Union, oil-into-food programs were a significant element of the planning and sales strategies of the mid-twentieth-century oil sector. In the West, this effort led to the establishment of subsidiaries like BP Protein and BP Nutrition and to the popular animal feeds Toprina, Fermosin, and others. In the Soviet Union, ongoing shortages of animal fodder encouraged planners to make massive investments in oil-into-food plants at refineries across European Russia. Ambitious plans to introduce petroleum-based protein products into the human diet were, however, derailed by environmental protests (in Italy and Japan) and the 1970s spike in global oil prices. With particular attention to Soviet and Western European competition, this paper argues that transnational oil-into-food programs—and especially the imagination of alternate human energy futures on which they rode—provide an unexplored and important window onto the energy utopias, dystopias, and heterotopias of the Cold War era.

Douglas Rogers is associate professor of Anthropology at Yale University. He is the author of *The Depths of Russia: Oil, Power, and Culture after Socialism* (Cornell, 2015) and a range of articles on post-Soviet energy and energopolitics. He is working on *Eating Oil: A Cold War History*, a book about the history and present-day reverberations of mid-to-late twentieth-century petroleum science in the Soviet Union, the United States, and Europe, including oil-into-food programs, the development of "oil-eating" bacteria, and debates about oil's biogenic and abiogenic origins.

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THE REFINERY AND THE MANGROVE: REFLECTIONS ON THE NEGATIVE ECOLOGIES OF CRUDE OIL IN THE CARIBBEAN

David Bond

This presentation links up the disastrous history of fossil fuels with the celebrated ecology of mangroves. Building on ethnographic and historical research in Puerto Rico and St. Croix, it outlines the often neglected but quite consequential place of crude oil in the Caribbean. Following the construction of what became the second largest refinery in the world, I describe how the imperial energy networks of the United States first came to the Caribbean. Imperial energy networks welcomed an unprecedented problem to the region: coastal oil spills. The scientific and legal response to these spills brought new attention to the vital relationality of mangroves. Rather perversely, the destruction of the mangroves in the Caribbean opened mangroves up to new forms of knowledge and care. While many claim that fossil fuels helped cultivate a modern disregard for the natural world, I show how the negative ecologies of fossil fuels also instigated new scientific and political appreciations for the liveliness of the natural world. Against scholarship that looks at the coming disaster of crude oil as an epochal break in thought and politics, this paper instead describes the long history of acknowledging and managing the disastrous qualities of fossil fuels.

David Bond is an anthropologist at Bennington College, whose research focuses on the scientific measurement and political management of the disastrous qualities of crude oil. He has conducted research on leaky refineries in the Caribbean, on the figure of the Keystone XL Pipeline, and the BP Oil Spill. Bond is currently developing a project on the ends of oil in northern Alaska. His publications have appeared in *Anthropology Now*, *Cultural Anthropology*, and *American Ethnologist*. He has taught on the environment and public action at Bennington since 2013 and is the associate director of the Elizabeth Coleman Center for the Advancement of Public Action.

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SMOKE AND MIRRORS: OIL ECO-FRICTIONS UNDER THE SCORCHING SICILIAN SUN

Mara Benadusi

Tucked away inside Europe's largest petrochemical hub, the thermodynamic solar plant ENEL opened in 2010 in the province of Syracuse is named Archimedes after the famous local scientist from the 3rd century B.C. According to the dominant account, Archimedes succeeded in driving off the Roman ships besieging the city by leveraging the reflective qualities of bronze and copper shields to direct the sun's scorching rays towards the enemy vessels. Taking advantage of the same qualities of parabolic mirrors, ENEL is currently the world leader in using molten salts integrated in a combined-cycle gas power plant to produce 'clean' energy in a site still burdened by the extensive pollution caused by oil refining and processing. In this paper, I seek to show how the instrumental use of both the past and the future in current industrial reconversion projects directed towards the green energy in Syracuse gives rise to a "temporal heterotopy", producing dystopian spaces invariably positioned outside of time; in the symbolic core of these spaces – like a parabolic mirror – there is a convergence of reflected images with the power to eliminate temporal distance and obscure the highly controversial nature of energy transitions taking place under the scorching Sicilian sun.

Mara Benadusi is associate professor of Anthropology at the University of Catania, in Italy. She carried out an ethnographic project in Sri Lanka following the Indian Ocean tsunami. Since 2015 she has been dealing with the long-term effects of industrial pollution in a petrochemical corridor in Sicily, and is local coordinator in the project "Eco-Friction: Sustainability and Heritagization in Processes of Industrial Reconversion," exploring energy transitions in southern Italy. She is just going to publish her new monograph entitled *On the Crest of the Tidal Wave: Hypertrophic Gifting in Post-Tsunami Sri Lanka*, and co-editing the book *The Poisoned Island: Oil, Industrialism and Violent Environments in Sicily*.

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5C. FILM AND ENERGY

202, 4 University Gardens

Speaker Organised Panel

CONFRONTING THEORETICAL BOUNDARIES OF ALTERNATIVE ENERGY REPRESENTATIONS IN *AVRIL'S EXTRAORDINARY WORLD*

Reuben Martens

Avril et le monde truqué (France/Canada, 2015, dir.: Christian Desmares & Franck Ekinci) is an animated, alternative history film that pictures a world where the World Wars have not happened, the Industrial Revolution has halted, and the transition from coal and steam to oil and petroleum as main resources of energy production never took place. The film's organizing conceit--a pre-oil society that (for contemporary viewers) at the same time also figures a post-oil one--requires the development of novel aesthetics, narratives, and representations of energy to move beyond petromelancholia (LeMenager). At the same time, like many such aesthetic and imaginative exercises (as Rick Crownshaw has shown), the film fails at certain moments to escape a petrocultural perspective. In my presentation, I will argue that the affordances and failures of this particular film are symptomatic of certain liabilities of the theoretical framework of 'resource aesthetics' more generally. Having originally emerged from within the energy humanities, the framework is arguably not fully capable to deal with depictions of alternative energy resources. Apart from pointing at these limitations, the case of *Avril* also suggests new opportunities for research regarding alternative energy in contemporary culture.

Reuben Martens started as a PhD Fellow of the Research Foundation – Flanders (FWO) in October 2017 and works in joint fellowship at Ghent University's Department of Communication Sciences and KU Leuven's Literary Studies Research Unit (Belgium). His research project wants to examine the cultural representation of alternative energy resources in contemporary Anglophone & European film and literature. Studying the values, narratives, and aesthetics that underscore these alternative resources, this project hopes to offer a valuable insight into newly developing ideas, discourses and narratives on energy in times of critical climate change and energy insecurity.

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JIMMY STEWART AND THE SWAMP MUMMY, OR HOW CAJUNS LEARNED TO STOP WORRYING AND LOVE BIG OIL

Sara Crosby

In July 2010, in the wake of the BP spill, Americans were perplexed by the behavior of my fellow south Louisianans, who had gathered in the thousands to protest—not the spill, not the industry that had poisoned our communities and left us impoverished, uneducated, and sick, but the temporary moratorium on offshore drilling. Why? The misdirected protest suggests, of course, a profound cultural and psychological “colonization” common to many other resource-rich regions, but how did we get here? How specifically were my people, the Cajuns, convinced to change themselves from a notoriously isolationist and iconoclastic people, resistant to the impositions of “big” anything, to defenders of Big Oil at any cost? This paper examines a pivotal moment in that process: a short but intense barrage of American films in the decade after WW2 when the oil industry was solidifying its capture of the state's politics, culture, and wetland ecosystems. These films appeared in a wide variety of genres from horror (i.e., *The Mummy's Curse*, 1944) to romance (i.e., Jimmy Stewart's *Thunder Bay*, 1953), but they all reproduced the same relentless industry narrative: modernity was here, and oil signified modernity's heroism and power. South Louisianans could either be “good Cajuns”—pliable, helpful, allied to the interlopers and their power—or they could play the role of the “bad Cajun” who resists, makes the wrong anti-modern alliances, and dies. That false Faustian bargain now imperils our survival, and we need to think through how we unmake that choice and decolonize our narratives and ourselves.

Sara Crosby grew up on an island off the coast of Louisiana and is currently an associate professor of English at a regional campus of the Ohio State University, where she teaches classes on American literature and pop culture, nature writing, and the literature of resource extraction. She has written two books on poisonous women in early American literature (one published, one in process) and various articles, including one for ISLE about early American ecohorror. She is currently working on a book about how ecohorror narratives have enabled extraction industries to exploit south Louisiana and have facilitated the national neglect that is allowing the region to literally wash away.

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MYSTIFICATION AND SATIRE IN JAN SVĚRÁK'S *OIL GOBBLERS*

Lenka Filipova

The paper discusses Jan Svěrák's documentary short *Oil Gobblers* (1988) as an example of mystification and satire mocking the official pseudo-scientific and twisted political discourse of resource extraction in Soviet Czechoslovakia. The film tells the story of a group of scientists who discover a new species – “*Petroleus Mostensis*” (the Latin for “oil gobbler”) that lives in industrial places, especially oil wells, mines and quarries, and feeds on toxic fumes and polyethylene. The film includes elements typically found in nature and science documentaries, such as the scientists' difficulties in finding the creatures, asking a local for information, the scientists' mistakes and their final success in filming the animals, and the animals' struggle for survival. Significantly, the efforts of the scientists are depicted against the destroyed landscape or ‘moonscape’ of Northern Bohemian coalfields, thereby drawing attention to environmental violation in the region. The film reveals the environmental consequences of indiscriminate resource extraction and mocks political and pseudo-scientific discourses which are disconnected from these consequences. This disconnectedness manifests itself in indifference and disregard of the natural environment. This lack of respect for the non-human is criticised by the film's satirical depiction of the scientists' fond relation to a non-existent animal. While the paper examines the film's satirical approach to environmental issues and draws parallels to the surrealistic and illogical tradition in Czech culture, it also discusses the reception of the ‘mockumentary’ both in Soviet and post-Soviet Czechoslovakia and the Czech Republic. Moreover, it places the film into a broader context of central European environmentalism, as well as what is sometimes referred to as the age of post-truth politics.

Lenka Filipova studied English, German and Czech languages and literatures and is currently finishing a PhD thesis in English literature at the Freie Universität Berlin where she is also an assistant lecturer. Her research interests include but are not limited to theories of place and space, theories of globalisation, environmentalism, post-colonialism, travel writing, World literature, and cosmopolitanism. She has recently co-organised a conference on travel writing and gender entitled “Encounters with Difference”.

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5D. BEFORE AND AFTER OIL: SPECULATIVE ENCOUNTERS WITH TIME, ENERGY AND FUEL II

203, 4 University Gardens

Session Organiser: Kevin MacDonnell & Clint Wilson III

BEFORE AND AFTER THE BOMB: "THIS IS NOT A DRILL"

Clint Wilson III

On January 13, 2018, terrified Hawaiians ran for cover after receiving what later turned out to be a "false alarm." The emergency alert read, "BALLISTIC MISSILE THREAT INBOUND TO HAWAII. SEEK IMMEDIATE SHELTER. THIS IS NOT A DRILL." This alert casts in relief those temporal logics that inform our sense of risk, danger, and toxicity under the regime of nuclear energy. The bomb is first and foremost a problem of time, and in fact the advent of nuclear weaponry forever changed "time." Few literary depictions of nuclear holocaust capture the paradoxical temporal categories of the bomb as poignantly as Aldous Huxley's *Ape and Essence* (1948), a novel about a lost Hollywood screenplay detailing the irradiated aftermath of World War III. The world of *Ape and Essence* raises questions about the status the human, the category of the "future," and—thanks to its narrative conceit—what role media and film play in constituting time and risk. In the context of *Ape and Essence*, "After the Bomb" is commensurate with "Before the Bomb," such that a screenplay straddling the past and future indefinitely displaces a Cold War present behind layers of literary imagination.

Clint Wilson III is a PhD student in the Department of English at Rice University. He is a Pre-doctoral Fellow with the Center for Energy & Environmental Research in the Humanities (CENHS) and a Diana Hobby Editorial Fellow for *Studies in English Literature, 1500-1900*. His work has appeared or is forthcoming in *Eighteenth Century: Theory and Interpretation* and *Modernism/modernity*, among others.

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BEFORE AND AFTER DROUGHT: TOWARD A FORENSICS OF RESOURCE RUIN

Matt Hooley

We typically narrate drought as an environmental agent whose effects we measure, endure, manage, or die from. However this habit obscures the ways drought is itself an effect, what Ann Stoler calls a condition of colonial "duress": both a hardship and a violent reframing of epistemology and temporality. Drought erases the colonial histories that produce it and incentivizes our desire for a future protected by the management infrastructures of settler states. This paper reads Fazal Sheikh's photographs of Bedouin dwelling places in the Negev during conditions of drought manufactured by Israeli water expropriation and afforestation projects. Here, the genre of the photograph dramatizes the problems of studying drought as an environmental present and the need to develop what Eyal Weizman might describe as an ecological "forensics": an analytical disposition that reconceives environmental presents (e.g. the photographable present of drought) as the experienceable constellation of a colonial "before and after." This paper develops this forensic approach and, using fieldwork I will do this coming June in Palestine, shows how the material and affective conditions of drought that we might mistakenly read as intrinsic to the Negev, have been distributed to urban Palestinian communities in the West Bank and Gaza.

Matt Hooley is Assistant Professor of Literature and the Environment at Clemson University. He works at the intersection of Indigenous, American, and Environmental studies, paying particular attention to the ways metrics of environmental use and well-being serve as aesthetic projects of settler empire. He is currently working on a book project titled *Ordinary Empire: Native Literary Modernism and the Infrastructures of Settlement* as well as a comparative study of the coloniality of drought in Palestine and Dinétah (Navajo Nation).

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OIL EVER AFTER: PETRO-MASCULINITY AND THE RISE OF FOSSIL AUTHORITARIANISM IN THE WEST

Cara Daggett

This article undertakes a feminist reading of the recent rise of fossil authoritarianism in the West. I advance the concept of petro-masculinity in order to highlight the historic entanglements—both conceptual and affective, ideational and material – between fossil fuels and white patriarchal rule in the modern West. Appreciating the historic relationship between fossil fuels and white patriarchy is helpful in terms of understanding the anxieties aroused by the notion of a world ‘after oil.’ Rather than treat climate denial and misogyny as separate phenomena that appear in new authoritarian movements, petro-masculinity highlights their psychological convergence. For many climate deniers, challenges to fossil-fueled systems, and more broadly to fossil-soaked lifestyles, become interpreted as challenges to white patriarchal rule. Visions of after oil, from this perspective, entail considerable gender trouble, and correspond to the extinction of white male privilege. When privilege is threatened, authoritarian, rather than democratic, modes of control become desirable. Gender anxiety has long been recognized as paramount among those deemed most vulnerable to authoritarian desires. By insisting upon a gendered reading of fossil fuels, this article helps to explain how ecological anxieties—and particular those surrounding the loss of fossil-fueled lifestyle—likewise animate desires for violent and hierarchical political orders.

Cara Daggett is an Assistant Professor of Political Science at Virginia Tech. Her research is situated in political ecology and feminist approaches to science and technology. She is currently finalizing her book manuscript, *Energy at Work: Fossil Ethics in the Anthropocene*, which is under contract with Duke University Press. The book traces the entangled industrial politics of work and energy following the ‘discovery’ of energy in the 19th century. Her work has also appeared in the *International Feminist Journal of Politics*, where it won the journal’s Enloe Award, and in a forthcoming volume, *Worldviews in Science, Technology and Art in International Relations* (edited by J.P. Singh, Madeline Carr, and Renée Marlin-Bennett).

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5E. INTERWAR LITERARY ENCOUNTERS WITH OIL

203, 10 University Gardens

Speaker Organised Panel

IN SEARCH OF ENGLAND: INTERWAR PETROCULTURE'S INVENTED TRADITIONS

Reid Echols

In the decades following Kenneth Grahame's 1908 bestseller *The Wind in the Willows*, Mr. Toad's exchange of the keys to his ancestral seat for those of an ill-fated motorcar became paradigmatic of an alarming shift in English values: the triumph of speed over substance. This anxiety towards the automobile was borne out not only in the writing of Grahame, Forster, and other major authors, but also in the material history of the twenties and thirties, when petroculture would utterly transform the land- and cityscapes of Great Britain, opening England's byways to unprecedented exploration by middle-class daytrippers armed with Shell-sponsored, John Betjeman-edited guidebooks. As industries sprang up around domestic tourism and suburban development, so did powerful critiques from preservationists of all political stripes, as polemical works emerged with titles like *Britain and the Beast* and *England and the Octopus*. The advent of these industries saw the countryside become a vast, hotly contested metaphor for Englishness itself.

This paper outlines several of the ways in which key texts of the 1930s—from guidebooks to polemical pamphlets to popular novels—attempted to manage interwar crises of national identity that rose up concurrently with the automobile. By doing so, I hope to highlight the fundamental role of petroculture in the production of English heritage in a decade of rapid transition.

Reid Echols is a PhD candidate at the University of Texas at Austin. His dissertation explores nationalism and ecology in interwar British literature, and his wider research interests include archival scholarship and pedagogy, Irish studies, and the environmental humanities.

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OIL DISCOVERIES IN THE FIELD OF LITERATURE. BERNHARD KELLERMANN'S *DIE STADT ANATOL* (1932)

Dariya Manova

The paper will track the social and aesthetic changes which accompany the discovery of oil in the literature of the German interwar period. Bernhard Kellermann's novel with both utopian and dystopian elements about the non-European city of Anatol will serve as a key example for my observations. The paper will locate Kellermann's novel and his work in a broader discourse of raw materials, especially oil and coal, in the German literature and press of the 1920's and 1930's, which arose from a much-feared transition. Coal as main energy resource for the industry was claimed to lose its importance, being substituted by the much more practical, cleaner and more efficient oil. After the lost world war, a crisis in the Ruhr district (1923) and the world financial crisis (1929), the sensitivity of literature for energy resources and raw materials (both in fiction and non-fiction as well as in the aesthetic debates on contemporary writing) rose significantly. Materialism and documentality thus gained fossil references. At the same time, the cultural and immaterial connotations of raw materials and oil, in particular, became striking. A substance without history, the mystical fluid appeared to promote and stabilize unfair working conditions and to widen the gap between the very poor and the very rich. Thus, it became a fossil materialization and a metaphor for the Other and the Foreign, the New World or the Orient.

Dariya Manova studied German Literature and Philosophy at Humboldt-University Berlin. She wrote her master thesis on the German-Mexican writer B. Traven and the importance of the notion of infrastructure for both his adventure novels and his own literary career. After research stays in Munich, Marbach, Berkeley and London she works on a PhD-Dissertation on raw materials and their narratives in the popular literature and press of the German interwar period. Her research interests include new materialisms, popular literature, the concept of adventure and narratology.

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AN OIL FIELD IN ENGLAND: FROM GRAVEYARDS TO GREEN CATHEDRALS

Michael Niblett

Writing in his 1935 novel *Last Cage Down*, former miner Harold Heslop describes the Durham coalfields as “the graveyard of a gigantic industry.” Heslop’s early registration of the long decline of the UK coal industry forms the starting point for my paper, which compares literary representations of the coal frontier with more recent depictions of the ongoing crisis of petromodernity and the imagination of a post-oil future. Offering a few thoughts on the history and significance of inland oil drilling in England, the paper then turns to the 2012 novel *Pig Iron*, by Benjamin Myers. Set, like Heslop’s text, in and around Durham, Myers’ narrative mines a distinct seam of alternative, ‘weird’ or ‘eerie’ writing about the English countryside. The novel evokes the decline of the coal frontier in the northeast, registering the socioecological impact of deindustrialization and economic deprivation. But in something like the ecological unconscious of the text, the haunting past of coal becomes enmeshed in competing visions of a post-oil future, pitting apocalyptic survivalism against a return to what the novel calls ‘the green cathedral’.

Michael Niblett is Assistant Professor in Modern World Literature at the University of Warwick. He is the author of *The Caribbean Novel since 1945* (2012) and co-editor of *Perspectives on the ‘Other America’: Comparative Approaches to Caribbean and Latin American Culture* (2009). His most recent book is the co-edited collection *The Caribbean: Aesthetics, World-Ecology, Politics* (2016).

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5F. WORLD LITERATURE

205, 4 The Square

Speaker Organised Panel

LITERARY REPRESENTATIONS OF THE REFUGEE

Sofia Ahlberg

I use Moretti's "distant reading" for literature dealing with the spatial reach of human subjectivity and agency in socio-cultural arrangements spanning the globe. My hypothesis is that this can yield insight into local possibilities for reforms specific to energy transition. For example, in my reading of Mohsin Hamid, a lion's share of available fuels provides the world's privileged few with security infrastructure for keeping countless others at a remote distance. In Hamid's *Exit West* (2017), the 2015 influx of refugees into Europe is a crisis for that self-protective economy. Against a backdrop of energy scarcity exacerbated by corporate capitalism, East-West tensions mount as this closed-door policy is repeatedly and inexplicably breached due to waning energy supplies. Refugees literally walk through doors directly into the West, asking for shelter. My research acknowledges new materialist emphases on human embodiment within complex systems though I resist aspects of the posthuman turn. I seek intersections between literature and energy that could task the human with attempting far-reaching interventions via local inflection points (Hayles). *Exit West's* enigmatic doorways are emblematic of such points. I speculate that abrupt and inexplicable proximity to refugees invites reflection on the global importance of hospitality.

Sofia Ahlberg: I am an Associate Professor of literature in the English Department at Uppsala University, Sweden. My first monograph *Atlantic Afterlives* (Palgrave Macmillan 2016) is about the impact of digital information on transatlantic literature. My present book project *Literary Perspectives on the Passing of Oil* develops an energy literacy for reading contemporary fiction. I am contributing to a series of workshops *Energy and the Left* organised this year by NYU with key participants such as Andreas Malm. Recent papers on energy humanities have appeared or are forthcoming in *The Comparatist*, *Loanwords to Live With* (Ed. Brent Bellamy), *A Handbook in Science and Literature* (Ed. Priscilla Wald) among others.

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MADE TO BURN: RACHEL KUSHNER'S RESOURCE AESTHETICS

Claire Ravenscroft

As Szeman and others have provocatively argued, the "world" of "world literature" first theorized by Goethe and Marx emerged by way of the fossil economy. My paper, "Made to burn: Rachel Kushner's resource aesthetics," examines the relationship between literary culture and fossil modernity using Kushner's 2013 novel *The Flamethrowers*. In my reading, the novel charts the development of modernist and postmodernist aesthetics across three moments of crisis in petroleum hegemony's long twentieth century: 1) the birth of Fordism and fascism, 2) the 1970s' twin emergencies of stagflation and energy resourcing, and 3) the novel's own conditions of production in the era of climate change. This trajectory foregrounds the mutually constitutive relationship among modern aesthetics, politics and energy use, highlighted in such scenes as Mussolini's corpse displayed at an Esso gas station, a motorcycle crash turned land artwork, and a conceptual art haven in Port Arthur, Texas. In this sense, the novel's organizing principle and protagonist is — rather than an individual within the oil economy or even oil's biophysical substance, as in Negarestani's *Cyclonopedia* — the oil economy itself. The result is a formally heterogenous novel incorporating and unsettling genres ranging from more to less explicitly fossil-fueled: futurist poetics, the road trip novel, the manifesto, conceptual performance art, land art, the bildungsroman and literary realism. A veritable archive of aesthetic production under petromodernity, *The Flamethrowers* is a bold rejoinder to the questions of method, periodization, scale and form asked by Ghosh's "petrofiction" and more recently Bellamy et al's "resource aesthetics." Kushner clarifies the "Oil Encounter" to be not an event so much as a condition of world modernity itself, one whose unmaking requires attendance to energy's simultaneously political-economic and, importantly, aesthetic dimensions.

Claire Ravenscroft is a doctoral candidate in English at Duke University. Her research and teaching interests surround energy, environment, contemporary fiction and film. Her dissertation, *Flexible aesthetics: Petrofiction, climate change and the endless 20th century*, examines formal correspondences among anglophone fiction, free market economic doctrine and contemporary ecological discourse, offering a fossil fueled picture of postmodernity.

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THE IBIS TRILOGY

Heidi Danzl

Amitav Ghosh recently stated at a book fair that he is daunted by current environmental developments; in spite of this, several characters in his *Ibis Trilogy* present readers with surprising coping strategies. The subplots emerging from those characters are of special interest in this analysis of resilience in fiction. The *Trilogy* consists of historical novels about the opium trade and war in the mid 19th century, nevertheless, as this paper argues, it also indirectly illuminates the omnipresence of the same patterns in contemporary unregulated capitalism and the contemporary “addiction” to oil. Stephanie LeMenager labels Amitav Ghosh the first petrocritic, because he often talks and writes about an addiction that probably has its origins in the slave and coolie trade. As its core is the aspect of scalability which is key to unregulated global capitalism. The analysis of this aspect will be based on, among other works, Anne Tsing’s *Mushroom at the End of the World*. Her anthropological exploration of the ruins of capitalism proposes a theory of non-scalability which promises resilience of a special kind. It aids critics who seek to explore how local communities deal with trauma experienced through slow violence; for example, in oil drilling zones, or in the hotpots of anthropogenic environmental disasters. This process is mirrored in *The Ibis Trilogy* through illumination of the devastating effect of the opium trade on communities and individuals over long periods of time. Questionable scientific and economic agendas are key to Ghosh’s work and will be explored through the lens of resilience.

Heidi Danzl is a PhD candidate, AbD, and a member of the doctoral collegiate “Aesthetic Communication” at the University of Salzburg, Austria. She received a Fulbright scholarship in 2011 and has since conducted research and/or taught at various local and international institutes, companies, and communities; among others the Leopold Kohr archive (related to the classic *Small is Beautiful*).

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5G. CREATIVE WRITING IN THE AGE OF DERANGEMENT

205, 5 University Gardens

Session Organisers: *Lisa Moore & Eva-Lynn Jagoe*

In his book, *The Great Derangement*, Amitav Ghosh argues that literature has not been able to incorporate the realities of climate change into its narratives. What, he asks, will subsequent generations think of the writers and artists who failed to address the crisis, who failed to imagine possibilities through their art? This panel engages creative writers in the challenge of writing our petrocultures and of imagining our transition. How do stories enhance our capacity to change and create the societies we so urgently need? What new forms and narratives must we imagine? The short stories that we will read are forays into narrating the Anthropocene present and imagining the future.

Lisa Moore is an Assistant Professor in the English Department of Memorial University in Newfoundland, where she teaches creative writing. Lisa has written two collections of short stories, *Degrees of Nakedness* and *Open*, and three novels, *Alligator*, *February* and *Caught*, as well as a stage play, based on her novel *February*. Lisa's most recent publication is a young adult novel called *Flannery*. Her new short story collection *Something for Everyone* is forthcoming, Fall, 2018. Lisa has selected and introduced *The Penguin Book of Canadian Contemporary Women's Short Stories*, and *Racket: New Writing Made in Newfoundland*. She was the co-editor, along with Dede Crane, of *Great Expectations: 24 True Stories About Childbirth*, and co-editor, along with Alex Marland, of *The Democracy Cookbook*, a collection of over 80 essays about governance in Newfoundland.

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Eva-Lynn Jagoe is Associate Professor of Comparative Literature, Spanish, and Coordinator of Literature and Critical Theory at the University of Toronto. She teaches and writes about experimental critical writing, theories of individuality and collectivity, and Latin American film and culture. Her forthcoming book, *Take Her, She's Yours*, is a critical memoir about psychoanalysis, subjectivity, and feminism. Her previous book is *The End of the World as They Knew It: Writing Experiences of the Argentine South* (Bucknell UP, 2008). Jagoe has been the co-organizer of the JHI Toronto Writing Workshop and of the Banff Research in Culture residency under the themes of "Distributed Intimacies" (2014), "Demos: Life in Common" (2015), and "Year 2067" (2017).

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Simon Orpana is a Post-doctoral Fellow in the Department of English and Film Studies at the University of Alberta where his project, *The Petrocultures of Everyday Life*, uses graphic narrative, poetry, music and critical writing to explore how reliance on fossil fuels shapes our sense of self, our relationships, and our ability to imagine a sustainable and equitable future. His critical writing on popular culture has appeared in numerous journals and in book collections such as *Zombie Theory: A Reader* (University of Minnesota Press, 2017). He is co-author and illustrator of *Showdown!: Making Modern Unions* (with Rob Kristofferson, Between the Lines, 2016), a graphic history about the role played by Canadian steel workers in shaping contemporary labour politics.

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PANEL SESSIONS 6 | 15.00 - 16.15 | FRIDAY 31ST AUGUST

6A: INDIGENOUS CANADA

Charles Wilson Lecture Theatre

Speaker Organised Panel

TRANSITION BACK: USING TRADITIONAL INDIGENOUS TEACHINGS TO REVERSE COLONIAL ENERGY VIOLENCE

Warren Carriou

For Indigenous peoples, the history of colonization is also a history of forced energy transition, away from their traditional energy practices and toward the deeply foreign, alienating and commodifying energy regime of modernity. Thus for many Indigenous communities, the idea of energy transition away from fossil fuels is understood as potentially *a transition back* to traditional energy philosophies and practices that have been disrupted by colonial intervention. In this context, Indigenous sovereignty and resurgence movements have embraced their communities' traditional teachings about energy, and the relationship to land, as the basis of their struggles for energy justice.

My work on this *transition back* focuses on the role of Elders, artists and knowledge-keepers in the integration of traditional energy philosophies into contemporary energy practices and resistance movements within my own Métis community as well as related Cree and Anishinaabe communities. I argue that these Indigenous philosophies of energy are characterized by an intimacy of connection between the source of energy and the person who utilizes it—a relationship that embodies particular responsibilities toward the land, the ancestors, and future generations. By showing how Indigenous energy practices are fundamentally ethical in nature, I hope to point the way toward a decolonial philosophy of energy transition.

Warren Carriou was born into a family of Métis and European ancestry in northern Saskatchewan, Canada. He has published works of fiction and memoir as well as critical writing about Indigenous storytelling, literature and environmental philosophy. He has also created two films about Indigenous communities in western Canada's tar sands region, and he has written numerous articles, stories and poems about Indigeneity and petroleum. His visual art project, Petrography, uses tar sands bitumen as a photographic medium. He holds a Canada Research Chair at the University of Manitoba, where he directs the Centre for Creative Writing and Oral Culture.

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LIVING IN A COLONIAL CAPITALIST PETROSTATE: INDIGENOUS EXPERIENCES IN ALBERTA'S OIL INDUSTRY AND ITS GENDERED IMPACT ON WORKING FAMILIES

Angele Alook

I theorize that the province of Alberta is a petro-state that exists within the powers of colonialism, capitalism and patriarchy. To thrive, petro-states rely on an underlying culture of segmenting the labour market based on race and gender. Resource extraction industries rely on making profits by keeping racialized workers primarily in precarious employment and women in caring work.

Focusing on the lived experiences of Indigenous workers and their families in a petroleum dependent community in Treaty 8 territory, this paper will examine how precarious employment in resource extraction is not sustainable for the local economy. Using the Cree concept of *miyo-pimatisiwin*, which is a holistic health understanding of living the good life, I examine how work and family life intersect. Using the concept of *miyo-pimatisiwin*, I will discuss the need for Indigenous peoples to move towards maintaining self-governance and sustainable development by returning to holistic understandings in which the good life means balancing a healthy earth, a healthy home, and healthy work.

The Corporate Mapping Project, a six-year federal research grant funded by the Social Sciences and Humanities Research Council of Canada (SSHRC), sponsored this case study.

Angele Alook is proud member of Bigstone Cree Nation, an Indigenous labour researcher for the Alberta Union of Provincial Employees (AUPE), Staff Advisor on the Environmental Committee for AUPE, and steering-committee member for the Indigenous Labour History Project for ALHI (Alberta Labour History Institute). Dr. Alook also brings Indigenous and feminist perspectives and research methods to several Canada Tri-Council-funded initiatives concerned with climate and energy justice, including the Corporate Mapping Project and Just Powers.

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INFRASTRUCTURES OF INTIMACY IN ALBERTA'S TAR SANDS

Sam Spady

In this paper I consider the ways in which continued state investment in developing the Athabasca tar sands has normalized extractive economies. It's location far from settler cities and in a northern climate make the development of infrastructure crucial to extraction. While paving roads and building bridges to transport heavy equipment to the mines serves a role in making economic development possible, I am also interested in the creation of infrastructures of intimacy (Wilson 2016). Housing, schools, recreation centres, and health care facilities all make it possible for the social reproduction of life in this place. During the boom years of the early 2000s – 2010s, the population of the small city exploded quickly creating a critical need for infrastructure investment. These infrastructure debates are an important place to study how mega-industrial projects like the tar sands become normalized and inevitable in the spaces of everyday life. After conducting 30 interviews with people who live and work in this region I argue that for many in this region oil's place in the world and for the Canadian economy feels inevitable and entrenched. This paper asks how infrastructure structures inevitability and thinks through how places like Fort McMurray can begin to imagine different futures that are not built on oil extraction.

Samantha Spady is a PhD Candidate in Social Justice Education at the Ontario Institute for Studies in Education, University of Toronto. Her research focuses on the tar sands in Northern Alberta. Talking to people employed in the oil extraction projects in this region, her project traces how labour in this industry shapes critical learning and relationships to land. She grew up in Fort McMurray, Alberta as a settler on Treaty 8 territory and now lives and organizes in Tkaranto (Toronto), the Three Fires Confederacy, Haudenosaunee, and Huron-Wyandot territories

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6B. OIL HETEROTOPIAS. CONTINUITY AND RENEWAL IN TIMES AND SPACES OF TRANSITION II

101, 4 University Gardens

Session Organisers: Mara Benadusi, Douglas Rogers & Francesco Zanotelli

In Foucault's controversial yet inspiring text *Of Other Spaces* (1986), "heterotopias" are linked to concerns about time and space, notably time/space intervals, breaks, accumulations and transitions. Mutating at different points in history, the space/time nexus occupied by the fossil fuels industry is particularly suited for making use of this notion. Our panel explores the heterotopic character of energy transitions in which petroleum contradictory elements coexist: multiple overlapping visions of economic development, different forms of energy production combined, even incompatible imaginaries of the past, present and future, and their conflicting moral regimes. Paper presenters will scrutinize how energy politics of the past intersect and articulate with policy and politics of/for the future, and what specific historical paths contribute to forging these ambivalent spaces in different ethnographic sites. We will analyse transitions that never quite happened as in the case of transnational oil-into-food programs, as well as ongoing industrial changes as in the case of the move toward a low-carbon production or the renewing of oil extraction and transformation within the framework of sustainability or local linkages. Papers will also inquiry the moral economy governing the trading of specific oil by-products as well as the immaterial financial products derived from renewable energy sources.

FROM PETRO-LEACHED ECOLOGIES TO THE RIGHTS OF NATURE: REFLECTIONS ON AMAZONIAN HETEROTOPIAS

Suzana Sawyer

In the early 1970s, Texaco whisked Ecuador into the petroleum era as OPEC's smallest producer. Twenty years later, local peoples sued Texaco for devastating environmental contamination throughout its Amazonian concession. Traversing decades and continents, the lawsuit became emblematic of the rapacious exploits of an arrogant oil company and the consolidation of indigenous, peasant, and NGO opposition. Fifteen years later, in 2008, the 'rights of nature' were enshrined in Ecuador's new constitution. What exactly the 'rights of nature' means in practice is the subject of ongoing debate; but its connection with a post-petroleum stance is unquestioned. This paper is a speculative proposal for thinking post-petroleum imaginaries. It unfolds a syncopated heterotopia of Ecuador's Amazon. This heterotopia is populated by the non-humans as well as humans. And it suggests that any *topia* concerned with transition cannot but also abide and abide-with other-than-human time/space being-ness: crude's concrescence over hundreds-of-thousands of years to actualize the Napo formation; the temporal/spatial chemical transformation of hydrocarbon molecule upon surfacing to the environment; millennial-old indigenous cosmology of sentience and agency imbibing in what we call nature. This splicing speaks to multiple ontological presences and the power of alterity to expand imaginings for post-crude heterotopia.

Suzana Sawyer's (University of California, Davis) research focuses on controversy surrounding resource extraction. *Crude Chronicles* (2004) explores the conflictive intersection of indigenous politics, petroleum corporations, and neoliberalism in the Ecuadorian Amazon. *The Politics of Resource Extraction* (2012) examines on how 'indigeneity' serve to both empower and debilitate indigenous initiatives as multinational corporations, state agencies, and multilateral institutions appropriated and depoliticized notions of indigenous identity in eight countries. *Suing Chevron* (forthcoming) traces events that led an Ecuadorian court to render a \$9 billion ruling against Chevron for contamination in 2011, and, compelled the US federal courts to delegitimize that ruling in 2016.

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IN AND OUT OF THE PIT: COAL MINING HERITAGE AND POST-EXTRACTIVE INDUSTRY IN SOUTH-WEST SARDINIA

Francesco Bachis

During the last twenty years, the coal mines of South-West Sardinia have been affected by process of heritagization and tourism development. The last Italian coal mine (Monte Sinni) will be closed in a few years. This mine, nevertheless, seems destined to be reconverted in a new factory for the gas production (Argon and others), through the establishment of an advanced research centre. This space is turned into a place of energy and industrial transition in which conflicting imaginaries and different moral regimes coexist: a “past” of coal extraction; a present partially based on heritage and tourism development; a new industrial futuristic promise oriented to a “healthy”, technologically advanced and “clean” work. Starting from an ethnographic research, this paper explores how different concepts of work affect new forms of discursive and material investment in a post-extractive space of energy transition. According to Massimiliano Mollona (2009), in the same place we find “spatial and temporal interconnections between the [...] stable and ‘respectable’ labour” and the “precarious, invisible and degrading”. Former miners, cultural and political brokers, workers of heritage and tourism, operate in the same “place” but they have different models of access to economic resources.

Francesco Bachis is post-doctoral research fellow at the University of Cagliari and teaches Cultural Anthropology and Ethnology at the University of Sassari. His main research interests focus on symbolic boundaries in the migratory flows from Morocco to Sardinia, and on the processes of memorialization and heritage construction in the post-mining districts of South-West Sardinia. Among his publications: “Mobilities, boundaries, religions. Performing comparison in the Mediterranean” (with A.M. Pusceddu, *Journal of Mediterranean Studies* 2013), “Ambienti da risanare. Crisi, dismissioni, territorio nelle aree minerarie della Sardegna sud-occidentale” (*Antropologia* 2017), “Un silenzio pieno di rumori: Il contesto sonoro nella storia di vita di un minatore” (*Anuac* 2017).

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COAST TO COAST HETEROTOPIAS. ONE CENTURY OF CRUDE OIL AND WIND COHOUSING IN THE POLITICAL LANDSCAPE OF THE MEXICAN ISTHMUS

Francesco Zanutelli

The Isthmus of Tehuantepec is renowned as the main corridor for the neoliberal exchange of commodities and energy (oil and gas) between Northern and Central America. It's a crucial territory where neoliberal policies of transport and communication have been planned all along the last ten years (Plan Puebla-Panamá, Proyecto Mesoamérica, Zonas Económicas Especiales). Changing the axes point of view, and assuming the east-west perspective on the Isthmus (the whole region that connects the Mexican gulf to the Pacific coast of the state of Oaxaca), it means to shift geographically and historically from the place of post-revolutionary Mexican national oil production and refinery to that of contemporary and future dissemination of transnational wind farms. Thus, the whole Isthmus can be considered a contemporary heterotopy, where the oil-wind nexus is representing in the same territory the past, the contemporary and the future of energy transition, but it is also a place from where to observe the shift from the oil as a repository of national identity, to the wind-energy as a symbol of non-material neo-colonial dispossession and a threat to local sovereignty. The paper will consider this shifting ideological process connecting together three scale levels of analysis: the Mexican political reform in terms of energy production; the local “policies” of consensus or opposition; the embodied heterotopy experienced by indigenous people working in oil industry and opposing wind farm installation.

Francesco Zanutelli is researcher and lecturer at University of Messina. His research focuses on finance with a special interest in the controversial construction of the neoliberal subject in relation to the local moral economy of money and debt. *Santo Dinero* (2012) is an ethnographic account of two Western Mexican localities where he followed the movement of money in and out of the domestic groups, in and out of the rituals of *mestizo* and ethnic identity production, in and out of gendered intentional groups. He is currently analysing the political ontology of the meteorological elements in the contrastive dynamics between renewable energy corporations, the State and Ikojts inhabitants of the Pacific coast and lagoons of Oaxaca.

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RISK AND REWARD: THE HETEROTOPIA OF OIL FINANCE IN WESTERN UNITED STATES

Mette M. High

Drawing on Foucault's understanding of heterotopia, this paper examines how private equity firms have come to play an instrumental yet ambivalent role in oil finance. In recent years, there has been an explosion in the speculation in oil by hedge funds, pension funds, insurance companies and private investors. These financial players have now become crucial in financing oil production, especially for start-up companies in the shale fields of United States. Relying on the much disputed and expensive technology of hydraulic fracturing (also known as 'fracking'), the production in these oil fields is able to respond and adapt to market dynamics in ways that was not possible in the past. Based on extensive fieldwork among oil producers and private equity firms in Colorado, I will show how private equity firms regard these start-up companies as lucrative opportunities with an ideal risk versus reward ratio: There is too high risk for other investors to want to be involved, yet the potentially enormous rewards justify the risk-taking. By offering capital investment for start-ups, private equity firms thus create spaces of utopia where oil entrepreneurs' dreams become reality. However, these spaces also encapsulate a new predatory relationship that informs the circulation of finance capital.

Mette M. High is Lecturer of Anthropology at University of St Andrews. She is the author of *Fear and Fortune: Spirit Worlds and Emerging Economies in the Mongolian Gold Rush* (Cornell, 2017) and a range of articles on money, value and natural resource extraction. She began ethnographic research on the oil and gas industry in the United States in 2013 and is now the Principal Investigator on a 5-year research project on oil, money and climate change.

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6C. INDUSTRIAL OIL ART

202, 4 University Gardens

Speaker Organised Panel

OIL FILMS AND AUDIOVISUALITY

Annette Davison

Some oil companies have produced moving image materials for almost a century. These vary from the technical and educational through to the promotional, and those that focus on internal communication. Some of these films are quite adventurous in audiovisual terms, though many are of interest in enabling us to analyse the messages these companies wished to share about their industry with different audiences, whether internally or externally. Focusing on the Shell Film Unit, the longest-running unit of its kind in the UK, I explore whether such a thing as a “house style” exists in relation to the films of this company, and those of its various competitors and allies, in relation to their audiovisuality, and what this might mean for analysis and interpretation of these materials.

Annette Davison is senior lecturer in the Reid School of Music at the University of Edinburgh. Her research focuses on the history, theory and analysis of audiovisual media, particularly cinema and television. Following studies that focused on the 1980s–90s, then on Kazan’s *A Streetcar Named Desire* (1951), and the so-called “silent” era (resulting in two monographs and two co-edited collections), she has been working recently on main title and end credit sequences for television serials, and on industrial films, and particularly the films of the Shell Film Unit.

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FILMING PETROLEUM: PROSPECTING, PROGRESS AND THE PUBLIC

Rudmer Canjels

This presentation will deal with the industrial films made by Royal Dutch Shell. Shell management recognized early on film as an ideal medium for reaching out and building public support for its activities and started in 1933 the famous Shell Film Unit. For several decades Shell would produce hundreds of documentaries, often dealing with scientific and technological subjects, distributing them mainly non-theatrically in cooperation with educational and cultural organizations. They were seen by millions of people. Views of new scientific processes, developments, and research often became an important part in their films. For my presentation I will focus on Shell’s own filmic vision for a better world and future (sometimes not directly related to the oil industry), their idea of the future of oil, and the use of the narrative of pollution and the growing environmental awareness, from the 1950s until the early 1970s. Why and how did Shell incorporate these (sometimes seemingly in opposition) views and narratives in their promotional and educational films? Was there a change in addressing the audience over the years? And what was the role of the imaginaries of progress and change in these films?

Rudmer Canjels is a media historian interested in seriality, transmedia storytelling and industrial film. He is the author of *Distributing Silent Serials* (Routledge, 2011), a study on the international distribution and cultural transformation of silent film serials. He has collaborated on the production of several documentaries for *A History of Royal Dutch Shell* (Oxford UP, 2007) as well as researched Shell’s own cinematic history in *Films that Work* (Amsterdam UP, 2009). His latest work *The Dynamics of Celluloid* (Sound and Vision, 2017) deals with the industrial films by Unilever and Shell made in Nigeria while it became an independent country.

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OIL COMICS: CORPORATE RELATIONS, DOCUMENTARY, AND SPECULATION

Daniel Worden

Scholars generally agree that the comic book emerged as a distinct print form in the early 1930s, with the publication of works like *Famous Funnies* by the Eastern Color Printing Company. Less well known is that the oil industry was involved in comic book publishing from its very beginning. The Magnolia Oil Company published a comic about Texas history titled *Texas History Movies* in 1932—the book was a repackaging of a Dallas newspaper comic strip—and *Standard Oil Comics* was published throughout the 1930s. Later in the twentieth century, comics by Sinclair and Exxon would also appear at gas stations and as theme park giveaways. In this talk, I will offer a brief survey of the kinds of comics oil companies have published about themselves, from humor strips about driving to informational comics about refining and energy sources of the future. By focusing on the connections between oil and comics in the United States, I will develop a speculative account of how the modern medium of comic books developed a mode of narrative imagination that makes visible the social imaginary afforded by petroculture, especially in comics' representation of rapid motion, temporal shifts, and spatial juxtaposition.

Daniel Worden teaches in the School of Individualized Study at the Rochester Institute of Technology. He is the author of *Masculine Style: The American West and Literary Modernism*, the editor of *The Comics of Joe Sacco: Journalism in a Visual World*, and the co-editor of *Oil Culture and Postmodern/Postwar—& After*. He just completed a new book titled *Neoliberal Nonfictions: The Documentary Aesthetic of Our Age*.

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6D. BARRIERS TO TRANSITION

203, 4 University Gardens

Speaker Organised Panel

THE DISCURSIVE CONSTRUCTION OF OIL DEPENDENCY

Fausto A.P. Ignatov Vinueza

Whether referred as “black gold” or as “the devil’s excrement”, oil has been regarded as a powerful medium since humanity begun exploiting its energetic potential. This power has been analyzed from various disciplinary perspectives. The great (political) power of oil as an indispensable and apparently scarce resource has remained an indisputable issue when dealing with the global economy and with energy as an ineludible element of life in the Anthropocene.

At the dawn of an age of transition to a less hydrocarbon-dependent society the power of oil remains widely intact. Extractivism endures as an economic and political priority practice in oil producing countries. The topic I want to address with this paper deals with the resilience of extractivism in oil producing countries, especially developing ones: Why does extractivism (in particular the oil dependency aspect) appear to be so unsusceptible to some external factors? Why is it that even the most extractivist-critical governments succumb to the temptation of the “quick and easy” extraction of natural resources being aware of the environmental, social and economic consequences?

I argue that much of the power of oil rises from its construction and continued reproduction as a discourse embedded in a specific (geo)political set. As a result of this discursive process one can find a series of contradictory and ambivalent positions and statements within a same context. The Yasuní-ITT Initiative proposed by the Ecuadorian government in 2007 provides the ideal context to analyze the proposed topic.

Fausto Ignatov Vinueza is a doctoral candidate at the Rachel-Carson-Center for Environment and Society and the Ludwig-Maximilians-Universität in Munich. He studied Political Science, Sociology and Gender Studies at the LMU Munich. His doctoral project explores the construction and reproduction of discourses on development, progress, and success in “internalizing societies” in relation to extractivist policies and practices focusing on the Ecuadorian case since the beginning of the Yasuní-ITT Initiative in 2007.

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ENERGY + CRISIS + VALUE: ON THE COMPOSITION OF CONCEPTS

David Janzen

This paper demonstrates, first, that current political economic conceptions of energy and crisis are mutually constituted. Second, I demonstrate that this co-constitution must be understood in relation to a third term: value.

“Crisis” does not passively name a historical event. Rather, it signals the disruption and active reconstitution of how it is possible to experience, narrate, and respond to widespread social changes. In short, a crisis is not something that happens *in time* but a process that *remakes* time.

The notion of “energy crisis,” which only emerged in the early 1970s, linked energy and crisis in a way that transformed both concepts: energy (previously understood as a secondary aspect of other systems) becomes in itself a unified and generalizable term. This general term constitutes a new conceptual map in which land, production facilities, infrastructure, markets, policies, labour, and so on are unified; in short, *energy* is represented for the first time *as a system*.

This linkage—energy + crisis—is best understood in terms of new research on the nature of value in capitalism. Capitalism demands the constant generation of surplus value; yet, as post-war global markets are saturated, the rate of surplus must fall. A series of political economic shifts (often generalized under the term neoliberalism) respond by capitalizing on *future* value.

To give a concrete example, the market value of fossil fuels is primarily based on *projected* levels of extraction (not on an already-existing commodity). Thus, the market-driven expansion of constant capital (extraction and production facilities, pipelines, etc.) is based on value that effectively does not (yet) exist. This systematizes the assumption that the broader conditions will remain the same. In other words, this form of projected value erases systemic change—including environmental degradation and climate change—ensuring that without intervention transition cannot take place until it is too late.

This analysis has several implications for thinking transition. Most immediately, transition must intervene in and reconstitute the predominant historical temporality—the one facilitated by the energy-crisis-value knot.

David W. Janzen is Lecturer in Drama and Speech Communication at University of Waterloo, Canada. His teaching and research focus on theories of crisis, science/environmental communication, and political philosophy. David's current book-length project offers a reconception of crisis that addresses climate change, political inequality, and the crisis of capitalism.

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DON'T TURN OUT THE LIGHTS: ENERGY STORAGE AND PETROCULTURAL AFTERLIVES

Casey Williams

Energy storage is a hot topic in the renewable energy industry, although it has largely escaped critical notice. For storage advocates, grid-scale batteries that capture excess solar and wind power and discharge it when the sun's not shining or the wind's not blowing are considered a *sine qua non* of a renewable energy transition.

What should we make of the hype? In this talk, I suggest that enthusiasm around energy storage highlights the endurance of fossil logics and petrocultural attachments -- especially an attachment to 24/7 *electricity* and the liberation from planetary constraints it represents -- in the moment of supposed "transition." Energy storage promises the power to harness "clean" solar and wind without sacrificing the advantages fossil fuels have afforded capital for two centuries, i.e. a portable and reliable "stock" of energy that can keep production humming *wherever* and *whenever* it is most advantageous. Moreover, grid-scale batteries promise Global Northerners continued access to a key feature of the petrocultural imaginary: the power to turn on the lights *anytime*, to recuse oneself from intermittency, from darkness.

What else might battery boosterism tell us about the persistence of petrocultural identities and attachments? How might these enduring identities, attachments, and associations shape the transition away from fossil fuels, and frame a just response to planetary warming?

Casey Williams: I am a second-year Ph.D. student in Literature at Duke University. My work focuses on discourses of natural disaster and environmental change. Drawing from Marxist theory, critical geography, and science studies, my work considers how representations of human/nonhuman environments condition affective and political responses to contemporary environmental decline.

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IS FRACKING KOSHER? THE JEWISH RESPONSE TO HYDRAULIC FRACTURING

David Krantz

As hydraulic fracturing, AKA fracking, has increased in both use and prominence over the last decade around the world, religious communities have taken notice. How has the Jewish community responded? Drawing upon interviews with leaders of Jewish institutions that have taken stances for and against fracking, this paper/presentation will describe the development of the Jewish communal stance on fracking.

This paper/presentation will compare the response to fracking among Jewish organizations in the United States and Israel. To what extent have Jewish groups in both countries worked together? What are the similarities and the differences to the approaches taken by Jewish activists in both countries? How has the response of the larger Jewish establishment differed from that of smaller Jewish-environmental groups? Why did Jewish organizations take the stances that they did? What new organizations have sprung up in response to fracking? What inspired their leaders to fight for or against fracking? How have these organizations worked with both secular groups as well as within an interfaith context? And to what extent were Jewish individuals involved in the fracking debate — such as Josh Fox, director of the documentary film *Gasland* — informed and inspired by Jewish values in pursuing their work on fracking?

While many of the larger Jewish organizations merely issued policy statements on fracking, what may come as some surprise is the variety of activities among smaller Jewish groups and individuals — including fracking wells being dug at Jewish summer camps, rabbis being arrested at fracking protests, and even a Jewish photography exhibit on fracking.

David Krantz is a National Science Foundation IGERT Fellow and a Wrigley Fellow at the School of Sustainability at Arizona State University.

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6E. ENERGY TRANSITION AND THE ANTINOMIES OF REALISM

203, 10 University Gardens

Session Organisers: *Lynn Badia, Tobias Menely and Thomas S. Davies*

This panel includes three talks that explore the relation of energy transition to the aesthetics of realism, moving from eighteenth-century descriptive poetry to 1930s energy documentaries and contemporary speculative fiction. Fredric Jameson and Amitav Ghosh have investigated how realist works function, or fail to function, as scalar models that coordinate meso-level experience with macro-level forces, such as the spatiotemporal abstractions of fossil capitalism and the disaggregated effects of climate change. This panel suggests that realism has developed and mutated as it gives expression to changing energy regimes across the long history of carbon modernity. The speakers explore how multiple iterations of realism have attempted to align past and future, or cause and effect, in representing the social organization of planetary energy flows.

REAL ENERGY ABSTRACTION: THE FACTORY, THE PLANTATION, AND THE LIMITS OF DESCRIPTIVE POETICS

Tobias Menely

Tobias Menely reconstructs a descriptive poetics rooted in an eighteenth-century energy economy organized around climate, concrete temporal and geographical variations in access to solar radiance, and then show how these poetic conventions strain to represent the spatiotemporal abstraction of the Industrial Revolution, defined in terms of both the coal/iron/factory nexus of the English Midlands and the sugar/slave nexus of the Caribbean plantations.

Tobias Menely is Associate Professor of English at UC-Davis, where he teaches Environmental Humanities and the literature of the long eighteenth century. His first book, *The Animal Claim: Sensibility and the Creaturely Voice* (U of Chicago P 2015), was shortlisted for the Oscar Kenshur Prize. His article, "The Present Obfuscation: Cowper's Task and the Time of Climate Change" was awarded the MLA's William Riley Parker Prize. His co-edited collection, *Anthropocene Reading: Literary History in Geological Times*, was published by Penn State UP in 2017. He is currently completing "The Climatological Unconscious: Toward a Geohistorical Poetics."

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BAKKEN REALISM

Thomas S. Davis

The onset of the Bakken boom amidst the Great Recession suggested petro-capitalism's transformative powers were invulnerable to even the most violent economic hemorrhages. Photographers, filmmakers, and journalists descended onto the frigid, windswept North Dakota plains to capture the boom, spurring a wave of documentary realism. This talk asks how aesthetic objects, and documentary realism in particular, might enact other ways of seeing and thinking beyond what Macarena Gómez-Barris calls "the extractive view." I turn to Alec Soth's photography, his short film *Sweet Crude Man Camp* (2013), and the Winter Count Collective's video *We Are in Crisis* (2016) to unfold the ways documentary realism figures the entanglement of oil and capitalism's affect structures, and imagines, or fails to imagine, livable futures beyond the horizon of oil. In Soth's work, the boom's promises of economic rescue magically endure even when they are revealed as impossible fantasies. In arresting black and white imagery, Soth delivers a scathing critique of everyday life in the boom. Pushing beyond critique, the Winter Count Collective invites us to recast our attachment to oil and the worlds it conjures and destroys. *We Are in Crisis* shifts to Standing Rock. Here the Bakken takes its place in a much longer history of indigenous dispossession, a history that emerges from and perpetuates attachments to capitalist accumulation. This video, I suggest, invokes other histories and models other forms of attachment that pre-existed capital and continue to haunt its sovereign hold over our social and political imaginations.

Thomas S. Davis is Associate Professor of English at The Ohio State University. He is co-organizer of the Environmental Humanities Discovery Theme Project and the Cultures of the Anthropocene Working Group. His first book, *The Extinct Scene: Late Modernism and Everyday Life* (Columbia UP, 2016) was shortlisted for the Modernist Studies Association Book Prize. He has recent and forthcoming publications in *Modernism/Modernity*, *Modern Fiction Studies*, *Twentieth Century Literature*, *Textual Practice*, and several edited collections. He is currently working on a monograph entitled "The Cultural Lives of Climate Change."

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SCENARIO PLANNING: NEW FICTIONS AND GENRES ABOUT ENERGY AND CLIMATE FUTURES

Lynn Badia

Lynn Badia examines scenario planning as a genre invested in simultaneously predicting and shaping potential future scenarios. She examines emergent hybrid narratives, such as *The Collapse of Western Civilization: A View from the Future* (2014), that combine fictional narrative, speculative fabulation, and scientific assessment, in response to the conceptual demands of anticipating possible futures and prescribing intentional human interventions in the present.

Lynn Badia is Assistant Professor of English at Colorado State University where she teaches twentieth- and twenty-first-century literature, film, and theory focusing on Environmental and Energy Humanities. In 2015, she was a Visiting Scholar at the University of Cambridge, contributing to the Climate Histories Research Group at CRASSH. She was a Banting Postdoctoral Fellow (2015-2017) and the Canada Research Chair in Cultural Studies Postdoctoral Fellow (2014-2015) at the University of Alberta. Her research is published by and forthcoming from *Resilience: A Journal of the Environmental Humanities*, *Open Library of Humanities*, *Cultural Studies*, *Nineteenth-Century Contexts*, and *Fordham University Press* among others. lynn.badia@colostate.edu

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6F. SF ENERGIES

205, 4 The Square

Speaker Organised Panel

'GUNS UNDER THE TABLE': KIM STANLEY ROBINSON AND THE TRANSITION TO EUTOPIA

Andrew Milner

In the journal *Utopian Studies*, the Californian SF writer Kim Stanley Robinson tells of how his friend Terry Bisson alerted him to the key flaw in his first utopian novel, *Pacific Edge* (1990): 'Stan ... there are guns under the table'. Bisson's remark provides Robinson's *Red Mars* (1993) with a chapter title, whilst the *Mars* trilogy as a whole develops a detailed account of three political revolutions. Robinson explains that this was a deliberate choice on his part, because 'I felt that in *Pacific Edge* I had dodged the necessity of revolution'. He describes *Antarctica* (1997) and *The Years of Rice and Salt* (2002) as his next utopian novels, but these too dodge the 'necessity of revolution', the first by substituting science for politics, the second by projecting an alternative history into an alternative future. Both were preceded chronologically, however, by the first of Robinson's climate fictions, *Forty Signs of Rain* (2004). Here, as in the whole *Science in the Capital* trilogy, politics becomes paramount, and continues to be so in his more recent climate fiction. This paper will explore how Robinson negotiates the transition to utopia in novels from *Forty Signs of Rain* through to *New York 2140* (2017).

Andrew Milner is Professor Emeritus of English and Comparative Literature at Monash University in Melbourne, Australia. His published work includes *John Milton and the English Revolution* (1981), *Postmodern Conditions* (1990), *Cultural Materialism* (1993), *Class* (1999), *Re-Imagining Cultural Studies* (2002), *Contemporary Cultural Theory* (2002), *Literature, Culture and Society* (2005), *Tenses of Imagination* (2010), *Locating Science Fiction* (2012) and *Again, Dangerous Visions: Essays in Cultural Materialism* (2018).

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CARBON-BASED ENERGY SYSTEMS IN SCIENCE FICTION SHORT STORIES

Chris Pak

Energy systems in science fiction (sf) are often portrayed as engines of transformation that shape the ecological, technological and cultural landscape of the future. Sf's capacity to portray complex scenarios informed by many domains of knowledge makes this literature an important intervention into thought about energy transitions and future energy regimes. This presentation examines sf's representation of carbon-based energy systems to ask how they engage in an ongoing dialogue about the past, present and future of energy. It examines the futures portrayed in short stories such as O.R. Frisch's "On the Feasibility of Coal-Driven Power Stations" (1955), Sam Nicholson's "Oil is not Gold" (1979), Alexis Glynn Latner's "The Life-Blood of the Land" (1997) and China Miéville's "Covetithe" (2011), among others, with a view to exploring how sf has collectively constructed narratives and counter-narratives about energy systems and their relationship to society. How does sf respond to energy systems, and how far do these responses call for new formulations of the relationship between humanity, nature and the future? Furthermore, in what ways do sf short stories propose alternatives to these energy systems, or speculate on the repercussions of energy system change?

Chris Pak is the author of *Terraforming: Ecopolitical Transformations and Environmentalism in Science Fiction* (2016). His research interests in science fiction combines insights from the environmental humanities, human-animal studies and the digital humanities. He has previously worked on the Leverhulme-funded corpus linguistics project "People," "Products," "Pests" and "Pets": The Discursive Representation of Animals (Lancaster University, 2013–2016) and the Volkswagen Foundation-funded project Modelling Between Digital and Humanities: Thinking in Practice (King's Digital Lab, King's College London, 2017–2018). He is currently sub-editor of the *Medical Humanities* blog (2016–ongoing) and editor of the Science Fiction Research Association's *SFRA Review* (2014–2018).

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TEMPORALITY FOUND AND FELT IN THE ANTHROPOCENE: GLACIAL TIME IN *INTERSTELLAR* & *ARRIVAL*

Toby Neilson

This paper will investigate the intersections between time in the Anthropocene, and time in contemporary science fiction cinema, using *Interstellar* (Nolan, 2014) and *Arrival* (Villeneuve, 2016) as case studies. It will demonstrate that time in the Anthropocene feels different to time that came before it (i.e. modernity). It will argue and unveil the means by which science fiction cinema's privileged relationship with time provides a platform for disseminating our impression of time in the Anthropocene context. Mary Ann Doane argued that cinema reflected the temporal changes of modernity at the dawn of the 20th century, this paper will argue that science fiction cinema reflects the temporal collapse(s) of the Anthropocene.

Much writing on the Anthropocene would follow that Chakrabartian mathematical logic of human history + deep history = Anthropocene. This paper will demonstrate that this is both overly simplistic, and dangerously anthropocentric. These films, through their organic time travel assemblages (a black hole and an alien language) avail their narratives to a complex multiplicity of flows, durations and temporal pressures that stack up and in on each other in the Anthropocene context. In doing so they provide more deeply ecological frameworks of temporal thought of ethical pertinence for the Anthropocene.

Toby Neilson is a 2nd year AHRC-funded Film Studies PhD Researcher at the University of Glasgow. Neilson completed his BA and MA in Film at the University of Exeter. His research interrogates the eco-critical debates of the Anthropocene context through the lens of contemporary science fiction cinema. In leveraging science fiction cinema as a framework for reading the Anthropocene, Neilson's research aims to better illuminate the philosophical intricacies pertaining to our current ecological crisis.

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6G. CREATIVE PRACTICES OF ENERGY

205, 5 University Gardens

Speaker Organised Panel

SHIFTING GROUND AND OPEN WATER: MAPPING ENERGY THROUGH ARTISTIC PRACTICES AND CREATIVE RESOURCES

Ruth Beer

This presentation addresses the challenges faced in northern Canada at the intersection of advancing energy project developments and the transformation of cultures and ecologies in remote regions. It considers the role of contemporary visual art and digital media, and how these artistic and curatorial practices are mapping energy transitions. These artistic practices draw attention to environmental adaptations, the ongoing reconciliation between Indigenous and non-Indigenous peoples, and the types of shifting mobilities impacting everyday life in Canada's north. In the face of major fossil fuel, mining, and hydroelectric projects within rural communities in Northwest British Columbia, and treacherous transportation routes along the pristine northern coast, we ask: For artists and researchers with an interest in how we identify Canada as a major global participant in energy industries, how can artistic research be used to illuminate the complex and interlaced dynamics of culture, economy, environment, local particularities and shared experiences in the northern geographies and cultures that are located on shifting ground and open water? What kind of transformations are possible when artists and other cultural workers promote dialogue and exchange to further cross-cultural understanding and alliances through the production and presentation of art for sustainable futures?

Ruth Beer is a Professor of Visual Art and the Assistant Dean of Research at Emily Carr University of Art and Design in Vancouver BC. She is an artist/researcher interested in interdisciplinary approaches to artistic practice. She is the recipient of several public art commissions and Social Sciences and Humanities Research Council of Canada grants including most recently as principal investigator on the SSHRC research-creation project "Trading Routes: Grease Trails, Oil Pipelines" that addresses landscape and communities in relation to the interwoven terrain of traditional Aboriginal trading routes, and an ever-expanding network of oil and gas pipelines throughout British Columbia.

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THREE MINUTES TO MIDNIGHT: THE AGENCY OF HYDROGEN IN AN ART OF THE ANTHROPOCENE

Nick Laessing

An interdisciplinary project between art and science, working with the Electrochemical Innovation Lab at UCL. What are the requirements for an art practice of the Anthropocene that confronts eco-crisis? -Can the making of and engagement with speculative renewable and sustainable technology (that embodies user-participation), be one such effective response? Can spectator interaction with such artworks made for purpose, engage poetic responses towards an aesthetics of *usership*?

My research project is an artistic investigation into the element hydrogen and its agency in the context of an art of the Anthropocene. I am producing a series of installation works, setting up processes that utilise hydrogen (made from water using electrolysis) as a locally produced renewable energy for artistic agency and spectator participation. Concurrently, I address the theoretical question of how to position interdisciplinary artistic practice in its overlaps with the areas of science, technology and utility.

The paper will present my research into the aesthetics of utility (following the concepts of theorist Stephen Wright's *usership* and artist Tania Bruguera's criteria of *Arte Útil*) in a practice led investigation into water-electrolysis and other works that explore the relationships between technology, precarity and self-sufficiency.

Nick Laessing is an artist exploring the interfaces of art, technology and eco-crisis in the Anthropocene. He is currently a PhD researcher at The Slade School of Art and The Electrochemical Innovation Lab, UCL, London, researching evolving methodologies for artistic practice within discourses of the Anthropocene. His work has been exhibited in museums including Centre Pompidou Paris and the Serpentine Gallery London, and galleries and project spaces internationally. Recent group exhibitions include No Such Thing As Gravity at FACT Liverpool and Taichung Museum of Modern Art, and The Promise Of Total Automation at Kunsthalle Wien.

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SEA OF OIL

Laura Napier

Sea of Oil is a creative art project tracing visual and narrative social cultures in Southeast Texas, where oil, gas, and petrochemical industries are embedded. Gathering stories and objects through personal exchanges with industry workers and their families, *Sea of Oil* looks at how oil and gas cultures intersect with everyday life, as we are faced with massive, global climate change.

Energy transition is culturally difficult in the region because oil and gas dangers are normalized through visual strategies deployed via corporate safety swag and roadside vernacular architecture.

For example, safety swag is routinely given to oil and gas plant workers as rewards after company safety trainings and celebrations of safety achievements. These objects are useful items made to blend into domestic life, such as mugs and beer koozies. While they are brightly colored and cheerful in tone, the safety boasts and warnings they convey belie possibility for industrial accident. Interestingly, many of these objects are made in China using the same raw plastic material generated at plants where swag is distributed.

This presentation will include photographs.

Laura Napier is an artist and educator. Her work explores the sociology of behavior and place through visual documentation, installation, and participatory and collaborative performance. She is an Affiliate Artist with the University of Houston.

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THE ILLUSION AND SUBSTANCE OF OIL

Kathleen Thum

Using crude oil and recycled motor oil as an ink and paint to create representations of petroleum refining landscapes, my artwork aims to disrupt and interfere with our expectations of how one experiences oil in our western world. Crude oil is usually contained and controlled by the industry. In using crude oil as a medium to create artwork, I heighten the viewer's awareness of the disconnection between one's relationship with the material; oil is both a familiar, integral part of contemporary existence, yet remains a mysterious and unknown substance. In this paper, I will present my crude oil and recycled motor oil artworks created as a way to process my own increasing anxiety about climate change.

Kathleen Thum's drawings and paintings have been included in numerous group exhibitions such as "*SouthxEast*" at Florida Atlantic University in Boca Raton, Florida, and "*Unnatural History*" at the Spartanburg Art Museum in Spartanburg, SC. Her recent solo shows include exhibitions at University of Alabama in Huntsville, AL and Furman University in Greenville, SC. Kathleen Thum received her BFA from Maryland Institute College of Art in Baltimore and her MFA from Bowling Green State University in Ohio. Kathleen currently teaches as Associate Professor in the Art Department at Clemson University in South Carolina.

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PLENARY LECTURE 5 | 17.00 - 19.00 | FRIDAY 31ST AUGUST

DIRECTOR'S TALK AND FILM SCREENING OF *THE HOST* (2015)

Miranda Pennell, Sponsored by 'Connecting Cultures GRP', University of Warwick
Charles Wilson Lecture Theatre

The Host (Dir. Miranda Pennell, 60 minutes, 2015, HD video)

A filmmaker turns forensic detective as she pieces together hundreds of photographs in search of what she believes to be a buried history, only to find herself inside the story she is researching. *The Host* investigates the activities of British Petroleum (BP) in Iran; a tale of power, imperial hubris and catastrophe. While the tectonic plates of geopolitical conspiracy shift in the background, the film asks us to look, and look again, at images produced by the oil company and personal photos taken by its British staff in Iran– including the filmmaker's parents– not for what they show, but for what they betray. *The Host* is about the stories we tell about ourselves and others, the facts and fictions we live by – and their consequences.

2017 Punto de Vista Award for Best Film, International Documentary Film Festival of Navarra

'Like the Iranian oil workers who haunt Pennell, this is a film that refuses to get back into its box'
Sukhdev Sandhu, in Sight & Sound.

'This sober, respectful and devastating work is one of the year's highlights, a quiet and insistent probe into the act of making and marking territory, of the way identity is constructed in serial acts of necessary blindness'
Mike Hoolboom, program notes for Pleasure Dome, Toronto

Miranda Pennell is an artist and filmmaker. She originally trained in contemporary dance, and later obtained a masters in visual anthropology from Goldsmiths. Her film and video work exploring different forms of collective performance has been widely broadcast internationally and presented in festival and gallery contexts. Her more recent moving-image work uses archival images as the starting point for a reflection on the colonial imaginary. Her film *Why Colonel Bunny Was Killed* (2010) examines British image-making in the Afghan borderlands at the turn of the 20th century. It was awarded best international film at the 2011 Images Festival, Toronto, and Courtisane Festival of Film & Media Art, Ghent. *The Host* (2015) toured selected UK arthouse cinemas in 2016, and was awarded the 2017 Punto de Vista Award for Best Film at the International Documentary Film Festival of Navarra. In 2011 she received an AHRC scholarship for her doctoral research at the University of Westminster. She has worked as a freelance commercials director, a teacher in the fields of film, video and performance, and she also writes and curates.

Selected screenings or exhibition include *'Miranda Pennell: choreographies and archives'* at Filmmuseum Munich (2017), *'Co-op Dialogues 1976-2016: Lis Rhodes & Miranda Pennell'* and *'Assembly: survey of recent artists' film and video in Britain 2008-2013'* at Tate Britain (2016 and 2015 respectively), *'Autobiography and the Archive'* at the Zhika auditorium at Whitechapel Gallery (2015), *'Colonial Spectres'* Museum of Modern Art Vienna (2012), and group exhibitions *'All Systems Go: Liam Gillick & Anton Vidokle, Miranda Pennell, Dominic Watson'*, Cooper Gallery, Dundee, *'The World Turned Upside Down'* at Mead Gallery (2013) and *'Europe – The Future of History'* at Kunsthaus Zurich (2015). One-person programs of her work include those at Close-Up Cinema, London (2016), Glasgow Short Film Festival (2011), Oberhausen Short Film Festival (2006), Vienna International Shorts (2011), Tampere Short Film Festival (2009).

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PANEL SESSIONS 7 | 09.00 - 10.15 | SATURDAY 1ST AUGUST

7A. ART, ECOLOGY, ENERGY AND SPECULATIVE ENERGY FUTURES

Charles Wilson Lecture Theatre

Session Organiser: *Sheena Wilson*

Speculative Energy Futures is a multi-year, collaborative, interdisciplinary project that develops speculative and artistic approaches to energy transition as a necessary response to addressing climate change. The project brings together a carefully chosen group of artistic and humanities researchers with science, social science, and policy experts to investigate the challenges of energy transition with the aim of re-imagining more livable futures for all. Together, participants will produce a research-based art exhibition as well as a series of publications, bringing attention to the importance of arts and humanities perspectives on the social and cultural impacts and potentials of energy transition. This presentation will provide an overview to the *Speculative Energy Futures* initiative, including an introduction to the project, explorations of our theoretical catalysts, and a series of video intermezzos featuring curated virtual conversations with several members from the team.

Jessie Beier is an Edmonton-based teacher, artist, writer and conjurer of strange pedagogies for unknown futures. Beier is a SSHRC Doctoral Fellow and Killam Scholar currently completing her PhD at the University of Alberta, where she also teaches as an undergraduate instructor in the Department of Secondary Education and is co-director of the Research-Creation and Social Justice CoLABoratory (University of Alberta). Working at the intersection between speculative philosophy, ecological praxis, and radical pedagogy, Beier's research-creation practice explores the potential for visual and sonic ecologies to mobilize a break from orthodox referents and habits of repetition, towards more eco-logical modes of thought.

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Natalie S. Loveless is a conceptual artist, curator, and associate professor of contemporary art history and theory in the Department of Art and Design at the University of Alberta, where she also directs the Research-Creation and Social Justice CoLABoratory. She is co-lead of *Speculative Energy Futures*, a multi-year project that is part of the Just Powers initiative led by Dr. Sheena Wilson and funded by the Future Energy Systems CFREF, the Kule Institute for Advanced Study (KIAS) and a SSHRC Insight grant. Her book, *How to Make Art at the End of the World: A Manifesto for Research-Creation*, is forthcoming (2018) with Duke University Press.

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Sheena Wilson is Associate Professor at the University of Alberta, co-director of the international Petrocultures Research Group, and research-lead on Just Powers, an interdisciplinary and community-engaged initiative focused on climate justice organized around socially just energy transition for all. Funded by a Tri-Council SSHRC grant and the Future Energy Systems' Canada First Research Excellence Fund (CFREF), the research initiatives ongoing under Just Powers include, amongst others, Feminist Energy Futures: Power Shift and Environmental Social Justice; 2) *Speculative Energy Futures* 3) iDoc and 4) Bigstone Cree: A Vision for the Future. Dr. Wilson's monograph in process is titled *Deep Energy Literacy: Toward Just Futures*.

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7B. ANXIETY, SUBJECTIVITY AND ENERGY

101, 4 University Gardens

Speaker Organised Panel

OIL PSYCHOSIS: METONYMY AND DELUSION OF THE OIL ECONOMY

Calum Matheson

The oil economy “seems to represent a stage that neither capital nor its opponents can think beyond.” This paper posits the Lacanian concept of *psychosis* as an approach the impasse of transition. In psychosis, subjects become absorbed in a delusional structure which they take to represent foundational truth rather than contingency. Metaphor is replaced by metonymy, an insistence on shared substance, and alternatives become unthinkable.

Oil may be “narration lube” which fills “plot holes,” but it is also “destructive attachment,” a “bad love” that we cannot move beyond. To illustrate the forms of these attachments in language, I will examine metonymic associations of oil with two biological processes: the equation of oil and blood (e.g., “oil is the lifeblood of the global economy”) and oil for excrement (e.g., “oil is the Devil’s excrement”). In both cases, oil is figured as a medium for biological exchange. Following LeMenager’s insight that “the category confusion of life or oil powerfully disarranges the historic role of petroleum in the materials economy,” I argue that the equation of biological and petroleum economies presents both opportunities and hazards. To slip out of its symbolic grip, scholars should restore the metaphorical fluidity of oil.

Calum Matheson is an Assistant Professor of Civic Life and Public Deliberation in the Department of Communication at the University of Pittsburgh. His work focuses on the intersections of rhetoric, media, technology, and psychoanalysis, including topics such as nuclear weapons, risk calculations, and games.

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THAT ECOLOGICAL FEELING IN PETROCHEMICAL AMERICA AND TRUE DETECTIVE

Michael Truscello

Several recent television shows situate the contamination of petromodernity as a quotidian feature of everyday life. Casey Ryan Kelly describes how shows such as *Rectify*, *True Blood*, and *The Walking Dead* portray toxicity in the American South “as a complex but discernible collective trauma that pervades everyday life in zones of human sacrifice.” Kelly describes *True Detective*, Season One, as “less of a noir-themed murder investigation than a visual exploration of the degradation of the human condition in advanced industrial society.” In Kelly’s reading of the show, “toxic exposure” is “a structural force, a constraint on human agency that noticeably inflicts pain on the bodies of vulnerable populations.” As a piece of genre television, *True Detective* trades in several familiar conventions: everything from the mismatched detective partners to the final showdown with the villain in a space of ruins. In this context, one could argue that the suicidal trajectory of Detective Cohle, who lost his young daughter in a car accident, also replicates the convention of the self-destructive cop, a convention usually paired with some kind of substance abuse. However, *True Detective* undermines its collection of clichés by the way in which it situates suicide, transforming suicide from a character arc into an ontological problematic, and as a result performs more than just a visual representation of toxic contamination: this is a show about living with ontological toxicity. This discussion includes analysis of Richard Misrach’s photography from Petrochemical America.

Michael Truscello is an Associate Professor of English at Mount Royal University in Calgary, Alberta, Canada. He is author of *Infrastructural Brutalism: Art and the Necropolitics of Infrastructure* (MIT Press, forthcoming), and co-editor of *Why Don’t The Poor Rise Up? Organizing Twenty-First Century Resistance* (AK Press, 2017).

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NUCLEAR REALISM AND THE AVANT-GARDE: THE ROLE OF MEMORY IN THE TRANSITION TO NUCLEAR ENERGY

Katherine Lawless

In my article “Mapping the Atomic Unconscious: Postcolonial Capital in Nuclear Glow” (forthcoming 2018), I argue that memory can serve as a methodology of investigation for the energy humanities by exposing the material conditions of energy transitions. By tracking the energy unconscious of memory media, I demonstrate that memory media emerge as sites of dispossession through their operations as “resource aesthetics” (Bellamy et al). Memorial museums, in particular, not only transform the remains of previous stages of capital accumulation into cultural artefacts that mediate historical violence through the aestheticized logic of preservation; they also register the specific materialities at work in nuclear memory as cultural resource.

In this paper, I extend these observations through an analysis of relationship between documentary realism and cultural memory in the transition to nuclear energy. Beginning with a reading of *Hiroshima mon amour* (1959), I demonstrate the ways in which the atomic unconscious emerges through the machinery of musealization as a form of avant-garde memory that fetishizes the material remains of the nuclear transition. This fetishization is also evident in theory-practitioners’ analyses of nuclear photography, exemplified by Portland curator Yaelle S. Amir’s claim that it serves as “material witness to the effects of nuclear energy.” Recuperating the significance of nuclearity in the age of oil, this paper asks: What can an analysis of the fetishized objects of nuclear realism reveal about the role of memory in the transition to nuclear energy?

Katherine Lawless is an assistant professor in the Centre for Global Studies at Huron University College in London, Ontario. She has previously published articles on memory, art and capitalism in acclaimed journals such as *American Imago*. Her recent work on nuclear memory is forthcoming in the anthology *Materialism and the Critique of Energy*.

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7C: CLIMATE IMAGINARIES OF HOPE: ENVISIONING DESIRABLE LIVES IN A POST-FOSSIL ERA

202, 4 University Gardens

Session Organiser: *Climaginaries* Project

The capacity to enable transition to post-fossil society depends not only on scientific facts and legislative measures, but also on our ability to envision post-fossil worlds. Such futures, what we call climate imaginaries, are at the centre of the interdisciplinary project *Climaginaries*. This new project will be presented in a panel discussion on the synergies and disjunctions between how different disciplines conceptualise the ways climate imaginaries contribute to post-fossil transitions. The overarching aim of *Climaginaries* is to advance the understanding of the potential power and limitations of imaginaries to catalyse the political, economic, and social responses required for transitioning to post-fossil society. Climate imaginaries come in different shades and forms. Here, we will focus on those envisioning desirable lives after fossil fuels. What particular functions do these imaginaries of hope fulfil? And how can we develop a transdisciplinary vocabulary to enable new insights on how such imaginaries are narrated and effectively translated into climate efforts?

This panel will take place through three steps:

1. Introduction to concepts central to the *Climaginaries* project and presentations of four examples of climaginaries.
2. Break-out session: discussion in smaller groups, each dealing with one climaginary.
3. Plenary discussion on what to learn from these examples.

'FAST OIL' – A DREAM OF CONTINUATION

Alexandra Nikoleris

Alexandra Nikoleris is a PhD student in Environmental and Energy Systems Studies at Lund University. This summer she will defend her thesis on the role of envisioned futures in sustainability transitions. She has explored new ways of situating envisioned futures within the relations between culture, structure and agency, by studying different contexts in which sociotechnical futures are envisioned and used; scientific communities, demonstration projects, and novels. She is specifically interested in how credibility is created and maintained in different fora, and how belief in the wonders of technology is evoked.

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THE POST-FOSSIL CITY

Peter Pelzer & Wytse Versteeg

Wytse Versteeg is a researcher at the Urban Futures Studio, University of Utrecht. Previous research focused on themes such as authoritative governance, (environmental) discourse analysis and participatory politics. She is currently finishing a PhD-thesis in which she employs conversation analysis to learn more about the everyday negotiations regarding epistemic sources, and the authority of science in particular. Key publications together with Maarten Hajer were published in (edited) volumes at OUP and Ashgate, and journals such as *Journal of Environmental Policy & Planning* and *European Political Science*. Apart from her work as a researcher, she is a successful novelist.

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Peter Pelzer is a researcher and lecturer at the Urban Futures Studio. His research focuses on the city of the future, intervention methods, sharing economy, sustainable mobility and smart cities. He is one of the initiators of the Post-Fossil City Contest exhibited in Hague during December and January. In the past he worked as and editor and researcher for RUIMTEVOLK and as a postdoctoral researcher on the sharing economy at

the section of Innovation Sciences. His PhD in urban planning was about usage of Planning Support Systems (PSS) in spatial planning practice. During this period he also was editor-in-chief of AGORA, a Dutch-Flemish magazine on sociospatial issues.

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PAST IMAGINARIES OF THE PRESENT

Johannes Stripple

Johannes Stripple is an Associate Professor at the Department of Political Science Lund University (permanent, 100%). Johannes' research is concerned with the critical politics of climate change and its governance through a range of sites, from the insurance industry to carbon markets; from the UN to the urban and the everyday. Johannes has published over 40 books, papers and articles, including two recent edited volumes; Stripple, J., and H. Bulkeley (2014) *Governing the Climate: New Approaches to Rationality, Politics and Power*, and Bulkeley, H, M Paterson and J Stripple (2016) *Towards a Cultural Politics of Climate Change: Devices, Desires and Dissent*, both at Cambridge University Press.

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7D: FOSSIL CAPITAL READING GROUP

203, 4 University Gardens

Session Organiser: *Jordan Kinder*

This roundtable serves as an occasion for an in-depth, collective discussion of Andreas Malm's *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (Verso, 2015). *Fossil Capital* has emerged as one of the most significant contributions to the social, political, and economic study of energy and transition of the past decade. Its broader conclusions stem from Malm's development of an exhaustive, painstakingly researched account of what many consider the most significant energy transition in modern history--the transition from water power to coal-based steam power, or as Malm understands it, the shift from "flow" to "stock." Malm demonstrates that this shift from flow to stock was an *intentional* transition to further deepen capitalist relations and not the organic, teleological progression as it is so often framed. Accordingly, a socially and ecologically equitable energy transition requires intentional social and political struggles as well.

Taking up the challenge of sparking the kind of sustained discussion that Malm's text demands, "Reading *Fossil Capital* " gathers a cast of scholars to provide pointed responses from their respective critical vantage-points. "Reading *Fossil Capital* " will operate more as a reading group or workshop and less as a conference panel, eschewing conventions of individually titled papers and requesting that audience members be familiar with the book or its 2013 article counterpart ("The Origins of Fossil Capital: From Water to Steam in the British Cotton Industry," *Historical Materialism* 21, no. 1 (2013): 15-68). Indeed, the roundtable takes as axiomatic that the question of transition is a collective one that necessitates collective thought and incorporates this dynamic in its form.

Brent Ryan Bellamy is a Canada Research Chair Postdoctoral Fellow at the University of Alberta. He studies the fraught influence of energetic and technological path dependency in representations of the future, turning from texts that imagine surviving the end of the world to those that envision society powered by unique forms of energy. You can read his work in *Mediations* , *Paradoxa* , *Western American Literature* , *Reviews in Cultural Theory* , and in *Materialism and the Critique of Energy* (MCM` 2018).

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Cara Daggett is an Assistant Professor of Political Science at Virginia Tech. Her research is situated in political ecology and feminist approaches to science and technology. She is currently finalizing her book manuscript, *Energy at Work: Fossil Ethics in the Anthropocene* , which is under contract with Duke University Press. The book traces the entangled industrial politics of work and energy following the 'discovery' of energy in the 19th century. Her work has also appeared in the *International Feminist Journal of Politics*, where it won the journal's Enloe Award, and in a forthcoming volume, *Worldviews in Science, Technology and Art in International Relations* (edited by J.P. Singh, Madeline Carr, and Renée Marlin-Bennett).

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Jacob Goessling is a PhD candidate in Literary and Cultural Studies at Carnegie Mellon University. His research includes 20th and 21st century American culture, fossil energy and its wastes, and the breakdown of industrial infrastructure. His dissertation, *Energy Residues: Appalachian Coal Culture Against Fossil Capital* , examines literary and visual arts that represent and/or use coal wastes, such as slurry, ash, and acid mine drainage, to challenge the invisibility of people and environments affected by the contemporary coal industry.

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Jordan B. Kinder is a SSHRC Doctoral Fellow and PhD Candidate in the Department of English and Film Studies at the University of Alberta where he studies the cultural politics of oil, energy, and media. His work has appeared in *Socialism and Democracy* and *Point of View Magazine* with pieces forthcoming in *Energy Cultures* (edited by Jeff Diamanti and Imre Szeman) and *The Bloomsbury Companion to Marx* (edited by Jeff Diamanti, Andrew Pendakis, and Imre Szeman). His broader fields of interest include critical theory, the energy humanities, the environmental humanities, infrastructure, materialisms, and theories of social reproduction in late capitalism.

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Caleb Wellum recently completed his PhD in the Department of History at the University of Toronto and is currently lecturing in the Department of Historical Studies at the University of Toronto, Mississauga. He is also working on a book titled *Energizing the Right: Economy, Ecology, and Culture in the 1970s US Energy Crisis*, which critically engages the concept of “crisis” while exploring the intersection of neoliberal political culture, futurity, and the energy crisis of the 1970s. Caleb recently published an article about aesthetics of Documerica oil photographs in *Environmental History*.

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7E. ENERGIES, NATIONS, FUTURES

203, 10 University Gardens

Speaker Organised Panel

CONTESTING 'CANADA'? ALTERNATIVES TO PETRO-NATIONALISM

Shane Gunster, Darren Fleet, & Matthew Paterson

The Canadian fossil fuel industry (and its supporters) have developed robust, aggressive and affectively powerful forms of petro-nationalism to promote extractivism as an essential public good, and position critics as 'anti-Canadian', and foreign to the body politic. How have industry critics responded to such efforts to appropriate and instrumentalize Canadian identity? In this paper, we will explore this question through a survey of the social media communications strategies of twelve civil society organizations that represent a spectrum of progressive ENGOs, think-tanks, First Nations, advocacy groups and federal political parties. What role do ideas, images and symbols of Canada play in how these groups contest the politics of extractivism, address and imagine the identity of supporters, cultivate and tap attachments to place, and construct communities of resistance and transition?

This empirical investigation will ground a more strategic and speculative discussion of the perils and possibilities of invoking, contesting and (re)imagining national identity in the context of energy and climate politics. Is talk of 'Canada' necessarily irredeemable and toxic given its historical entanglements with colonialism, capitalism and patriarchy? Or is it possible (and necessary) to advance resonant 'Canadian' alternatives that can contest the monochromatic (but affectively powerful) narratives offered by industry?

Shane Gunster is Associate Professor in the School of Communication at Simon Fraser University where he teaches and researches in the area of climate and energy discourse. His most recent book is *Journalism for Climate Crisis: Public Engagement, Media Alternatives* (Routledge, 2017). He is a research associate with the Canadian Centre for Policy Alternatives, where he is engaged in the multi-year *Corporate Mapping Project* that is investigating the power of the fossil fuel industry in Canada.

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Darren Fleet is a PhD candidate in the SFU School of Communication.

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Matthew Paterson is Professor of International Politics at the University of Manchester. His publications include *Automobile Politics* (2007), *Climate Capitalism: global warming and the transformation of the global economy* (with Peter Newell, 2010), and most recently *Transnational Climate Change Governance* (with Harriet Bulkeley and 8 others, Cambridge University Press 2014). He is currently focused on the political economy and cultural politics of climate change.

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ASTANA EXPO-2017: IMAGINING AND REPRESENTING FUTURE ENERGY

Saulesh Yessenova

"Future energy" is a proud theme of the EXPO held in Astana, the capital of Kazakhstan, in the summer 2017. Based on the effort of 116 nation-participants, this EXPO displayed technological advances enabling energy transition towards a sustainable future. Simultaneously, this EXPO highlighted historical trajectories of individual nations shaped by human energy and innovation, and the role of fossil fuels in the past economic development of their countries. In this paper, I discuss the narratives of past energy transitions constructed by political and corporate interests within the individual nations and reflecting continuity with desirable end points of the ongoing change. The goal of this exercise is twofold. First, I argue against deterministic assumptions about the past and future energy transitions in both scholastic and political discourses, seeking to homogenize global experiences and their outcomes. Second, I argue about the goals of innovation and sustainability in the age of capitalism by focusing on two competing technological streams: decentralized renewable energy sources and centralized nuclear power.

Saulesh Yessenova is an Associate Professor in the Department of Anthropology and Archaeology at the University of Calgary, Alberta. Her research has centred on political economy of oil, specifically, a critical conjunction of nation/state-building and crude oil, the key endeavours that Kazakhstan, the country where she conducts her research, launched upon independence. She is the author of numerous articles and *The Politics and Poetics of the Nation: Urban Narratives of Kazakh Identity* (2009), a monograph based on her PhD thesis (McGill University, 2003). She is now researching for a book *Atom and Cosmos EXPOsed: Cold War and "Future Energy" in Kazakhstan*.

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SMART GRIDS – SWEDEN

Frederick Envall

Smart grids are ascribed great importance in the transition to a sustainable future energy system. Currently in Sweden, several smart grid demonstration projects are carried out and an emerging policy formation around smart grids can be observed. Various scholars have called for empirical research into what "smart" (grids, cities, urbanism) does in different contexts, e.g. how it impacts on and shapes our understanding of sustainability.

This paper does this through studying three Swedish demonstration projects, and asks how and to which extent they influence organizations and networks governing the development and implementation of the smart grid.

The first results of the study indicate there is a dominant imaginary, where smart grids are assumed to require very little change of the current energy system configuration. This imaginary is however contested, as diverging views on the demonstration projects' implications for sustainability transition can be discerned. Some claim that the projects' main function has been to promote Sweden internationally, i.e. an opportunity to increase export revenues and enhance economic growth. Others argue that this market framing forwarded through the demonstration projects is vastly insufficient, and that such a future energy system will only materialize at the expense of the sustainability transition.

Fredrik Envall is a PhD student at Linköping University, the Department of Thematic Studies - division of Technology and Social Change. In my research I examine how Swedish smart grid pilot projects are mobilized as sustainability interventions, and their implications for the transition to a sustainable energy system and society. I am interested in how environmental issues are made intelligible and acted upon in society, and as smart grids are stressed by many actors as key factors in the transition to a sustainable society they constitute relevant sites to ask such questions.

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7F. SUBSTANCES

205, 4 The Square

Speaker Organised Panel

THE SOCIAL LIFE OF CARBON: A EULOGY?

Elaine Forde

Faced with the prospect of energetic life post-carbon, this paper considers Carbon's social life. Weaving between theoretical perspectives that exemplify Carbon's changing relationships to other substances, beings and indeed, scholarly disciplines, this paper explores how differentiated access to different forms of carbon has impacted human (and morethanhuman) life.

This paper is based on ethnographic fieldwork with engineers, scientists and other stakeholders who have created new carbon imaginaries for a post-carbon world. With a particular focus on the science of carbon capture and sequestering, this paper examines how a post-carbon carbon might be configured.

The paper uses a single carbon molecule, C-60, as a lens through which to view the cyclical reinvention of Carbon for energo-social worlds. C-60, or Buckminsterfullerene/ "Bucky Balls", with its distinctive geodesic dome/ football-shaped representation, has captured imaginations in science fiction and the New Age even before the discovery of its structure at Rice in the 1980s. C-60 is now under investigation as a driving force in the more efficient capture of carbon emissions.

This paper asks, does this carbon molecule now promise to define the low or zero-carbon transition? Can carbon really reconfigure its role in anthropogenic climate change?

Elaine Forde's background is in Anthropology. She has completed long-term fieldwork in west Wales, and more recently, São Tomé et Príncipe in West Africa. Elaine's thematic interest is in Energy Research. Her doctoral research (Goldsmiths) examined the activism and related policy context for living off-grid in contemporary Wales.

Since joining Swansea Elaine has been exploring interdisciplinary collaboration in engineering research into uptake and acceptance of new renewable energy technologies. This feeds a broader research agenda which asks how societies might become better equipped for energy transition which will be characterised by decentralisation, peer to peer supply relationships and a proliferation of local- or micro-grids.

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TOXIC ENTANGLEMENTS: CHEMICAL GOVERNANCE AND EXTRACTION IN ASSEMBLY

Jennifer Lawrence

Transparency is indispensable for environmental justice. However, in the perverse political climate of 'post-truth' politics and corporate personhood, fossil-fuel companies are empowered by the state to conceal the toxic chemicals necessary for extracting unconventional oil (Mooney, 2011). The development of extreme energy draws into tension the right for citizens to know about health and environmental hazards versus the protection of oil conglomerates' capital gains (Cook, 2014). Chemicals required for fracking, oil sands mining, and deepwater drilling are sheltered as proprietary intellectual property thereby disenfranchising citizens and marking serious threats to public/environmental health and to justice and democracy. Drawing the scholarship of eco-governmentality (Luke, 1999) and biopower (Foucault, 2008) into conversation with a critical study of extraction and accountability, I address the problematic governance of chemicals accompanying extreme extraction. First, I consider the governance of wastewater from hydrofracking and highlight the tension between protection of trade secrets and states' responsibility to protect citizens' welfare (Maule, et. al., 2013). Second, I illustrate the struggle for transparency around the chemical dispersant Corexit in the aftermath of the Deepwater Horizon disaster and highlight the insufficiency of the Toxic Substances Control Act to prevent

environmental/public health hazards (Lawrence, 2015). Finally, I discuss the opacity of knowledge around chemicals required for diluted bitumen, an oil-sands product that must be thinned with large quantities of chemicals so that it can flow through pipelines (McGowan et. al., 2012). Grounded through critical inquiry into the asymmetrical knowledge—governance—environment matrix, I demonstrate how the governmentality of toxic chemicals privileges state-sanctioned studies and corporate discourses, and routinely discounts or alters monitoring and accounting that substantiate the lived experience of citizens in relation to the effects of extraction. I argue that this governmentality of chemical and environmental governance ought to concede the systemic toxicity that defines the regulation of toxic chemicals.

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CARBON VITALISM: BODILY CLAIMS AND REPARATIVE READINGS ACROSS THE CARBON CYCLE

Anne Pasek [Skype]

This paper examines how petro-contestations turn to the body as a site of strategic address. It begins with a US 2006 legal challenge that sought to define CO₂ as a pollutant and thus to compel regulation. This effort was initially argued through a broad coalition of multispecies and public health concerns. However, in the process of escalating to the Supreme Court, these gave way to a narrow frame of borders, state sovereignty, and rising seas. While the challenge ultimately succeeded, it did so by retreating from bodily claims making.

The opposite is true of industry-funded opponents to climate regulations. Following the Supreme Court case, a coordinated range of climate denialist media sought to defensively join carbon (and fossil fuels) to the body arguing that, if “carbon is life,” then the regulation of one could not follow without the other.

This corporeal turn, which uncomfortably mimics the epistemological claims of feminist STS, suggests the need for reparative strategies of interpretation. I develop such an approach, analyzing how “carbon vitalism” demonstrates gaps and possibilities in the politics of “life’s element.” In doing so, I argue that Mitchell’s invective to “follow the carbon” must extend through the whole carbon cycle and back into the body.

Anne Pasek is a PhD Candidate at New York University’s Department of Media, Culture, and Communication. Her dissertation research tracks how reactions to climate change produce different—and often contradictory—moments in which carbon is stabilized into new political and cultural relations. These include bodily and epistemological claims within American cultural contestation, the fungible commodity forms of corporate carbon offsetting, and the scalar imaginaries of speculative negative emissions technologies. This work draws on feminist STS and both historical and new materialisms in order to better attend to carbon’s ubiquitous and polymorphous role as mediator and driver of political and cultural forms.

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7G. SPECULATIVE FICTION AND ENERGY

205, 5 University Gardens

Speaker Organised Panel

DARK ECOLOGIES OF TEXTUAL ENERGY: ANTHROPOCENE AESTHETICS AND ETHICS IN BEN LERNER'S 10:04 AND TOM MCCARTHY'S SATIN ISLAND

Maria Sledmere

Hegemonic narratives of oil and energy cultures are often re-imagined in speculative or science-fiction genres. My paper, however, will focus on how curatorial and fictional techniques of discursive framing and defamiliarisation play out specifically in two novels whose hybrid experimentation with *realist* forms explore matters of energy within the context of the Anthropocene, and of late-capitalism's tentacular economies of data and power. In Ben Lerner's *10:04* (2014) and Tom McCarthy's *Satin Island* (2015), the ethical issues surrounding aesthetic representations of oil/energy, matter and climate information are interrogated through Lerner's symbiotic poetics of mediacy and McCarthy's performative interest in literary stylisations of the sublime and kitsch. While *10:04* is a *flaneurial* novel, observing localised enmeshments of meteorology and art, *Satin Island* unfolds sprawling, petro-heavy encounters with oil spills, Big Data and air-travel. With reference to Timothy Morton's 'hyperobjects', I examine how the virtual, theoretical and self-referential poetics of these novels—their chiastic, viscous ecologies of matter, text and aesthetics—reflects what David Lipset has called the 'dark, conditional mood' of the Anthropocene: its implications towards rethinking time, space, scale, interobjectivity and art's responsibility in the reflexive wake of human geologic agency.

Maria Sledmere recently graduated from the Modernities MLitt at the University of Glasgow, and has been accepted onto a DFA exploring Anthropocene aesthetics, dark ecology and the everyday through medial and hybrid forms. She is founder of *Gilded Dirt*, an online publication centred on the poetics of waste, co-editor of post-internet poetry zine *SPAM* and regular contributor to music blogs *GoldFlakePaint* and *Ravechild*. In 2017, she collaborated with producer Lanark Artefax and the RBMA on a new materialist-inspired installation titled 'The Absent Material Gateway'. Recent work appears in *Adjacent Pineapple*, *Amberflora*, *E-Ratio* and elsewhere. She tweets @mariaxrose.

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"ENERGY AIN'T JUST ANOTHER INDUSTRY": PETROCULTURE IN DAVID MITCHELL'S NOVELS

Bradon Smith

The final chapter of David Mitchell's 2014 novel *The Bone Clocks* depicts a society after a period termed The Endarkenment, and life on the West coast of Ireland without the easy luxury of abundant fossil fuels. Energy or petroculture do not appear at first glance to be central themes for this or Mitchell's other novels, and there is no work addressing Mitchell's work 'petrocritically'; but this paper argues that this final chapter surfaces a preoccupation that can be found consistently running in the background of his books.

Specifically, this paper will show that the span of time covered by *The Bone Clocks* allows Mitchell to examine both the history and the future of our petroculture, projecting forward the consequences of our current fossil-fuelled society; but it will also argue that Mitchell's wider thematic preoccupations (the will to power, temporality) feed into the examination of energy in his novels.

Bradon Smith is a Senior Research Associate at the University of Bristol, with research interests in the energy humanities and contemporary fiction. He was a Research Associate at the Open University on the AHRC-funded project *Stories of Change: Exploring energy and community in the past, present and future* (2014-2017), and at the University of Bath on *Building capacity for energy resilience in deprived areas*. He has recently published on green computer games, and speculation in the energy humanities. He is co-editing, with Prof Axel Goodbody, a special issue of *Resilience on Stories of Energy* (forthcoming, Sept 2018). He is working on a monograph, *The Energy of Imagined Futures*.

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DOCUMENTING THE ANTHROPOCENE: JOHN WYNDHAM'S THE DAY OF THE TRIFFIDS, SUSTAINABILITY AND OIL IN POSTWAR BRITAIN

Jeremy Strong

My paper re-considers John Wyndham's *The Day of the Triffids* (1951) for its attention to oil and the integration of an oil-related novum (Suvin). I explore the subtleties of how postwar sf anticipates the rise of environmentalism and argue against reading the triffids as metaphor (Harpold, Ketterer, LaRose). Instead I explore the dynamic between triffids and humans through the concepts of assemblage and intra-relation (Bennett, Barad). My paper adds to scholarship on the novel helping to overturn its popular dismissal as a "cosy catastrophe" (Aldiss), and identifies it as a text created during the twentieth century's most important transitional moment in petroculture.

My paper also explores differences between the British and American editions, demonstrating that cuts of 11,000 words made to the edition intended for an American audience evidence the author's awareness of differing social and political attitudes towards oil policy and consumption between his two markets. When read alongside studies of British oil histories (Smith, More), the cuts reveal subtextual anxiety about coming issues of sustainability. My reading invites a critical re-orientation towards the novel, inviting retroactive reading through the lens of Anthropocene (Jameson), which reveals mainstream sf (not only cli-fi) as an important conduit for planetary articulation.

Jeremy R. Strong is a PhD Candidate in English in the final year of his program at The University of Manitoba in the department of English, Theatre, Film & Media. Jeremy is currently completing work on a dissertation that examines the interrelationship between policy, ecocriticism, and science fiction in the works of three major authors whose work engages with the geopolitics of resource and energy use. His chief area of speciality is cli-fi and eco-disaster narrative, though his interests also more broadly include 20th century literature, film, popular culture, the zombie narrative, and weird fiction. Jeremy has taught thematic courses on the topics "The Literature of the Anthropocene", and "The Evolution of The Weird in Film and Literature". He has lived in Halifax, Somerset, and Winnipeg. Jeremy is also a creative writer, and recently published *The Tethering*, the first in a trilogy of post-apocalyptic novellas for young adult readers.

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PLENARY LECTURE 6 | 10.30 - 12.00 | SATURDAY 1ST SEPTEMBER

CAUTIONARY TALES FOR THE ANTHROPOCENE

Renata Tyszczyk, University of Sheffield

Charles Wilson Lecture Theatre

It is widely held that we have entered the Anthropocene – a geological epoch of human-induced changes to the Earth system on a par with volcanism, glacial cycles and asteroid strikes. The Anthropocene is a cautionary tale of its own making. It is a fearsome story told to try to make sense of the calamity-ridden world we find ourselves in. But what use are cautionary tales for this unsettled time? What is the potential of alternative energy scenarios? The presentation will explore modes of storytelling for energetic, challenging and transformative times, that speak to both our sense of urgency and influence but also, paradoxically, our insignificance.

Renata Tyszczyk is a Professor in Architecture. She trained as an architect and has an MPhil in History and Philosophy of Architecture and a PhD from the University of Cambridge. She joined the School in 2004, having previously taught at the Department of Architecture, University of Cambridge and at the Architectural Association. Her research and teaching explore questions concerning global environmental change and provisionality in architectural thinking and practice and the cultural dimensions of climate change. This links to her research projects on energy and industry (AHRC Stories of Change); provisional cities (British Academy Mid-Career Fellowship) and scenarios of climate change (Grantham Centre for Sustainable Futures, UoS; Ashden Trust, Jerwood Charitable Foundation and OpenSpace Research Centre funded). Her recent book is *Provisional Cities; Cautionary Tales for the Anthropocene* (Routledge, 2017).

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PANEL SESSIONS 8 | 13.00 - 14.15 | SATURDAY 1ST SEPTEMBER

8A. DARK GREEN: ENERGY DYSTOPIAS AFTER OIL I

Charles Wilson Lecture Theatre

Session Organiser: *Jamie Cross & Silvia Pergetti*

Discussants: *Cymene Howe & Dominic Boyer*

SESSION ABSTRACT

How are we to imagine a world after oil? Emerging genres of speculative science fiction writing – like ‘SolarPunk’ – as well as architectural and design projects – from *ecotopia2121* to *maasaisolar.org* – neatly capture the ethics and technics of hope for a post-petrochemical world. Powered by abundant supplies of renewable energy, these utopian visions seek to bring into being the very worlds they describe. This panel responds to the pre-figurative politics of hope in green visions by exploring the material politics and limits to lives lived with renewable energy infrastructures, technologies and devices. Showcasing a series of new collaborations between social scientists, fine artists, designers, developers and filmmakers the panel asks, ‘what do energy dystopias look like after oil?’ This panel presents work by the University of Edinburgh’s Not Just Energy Futures Research Group. The collaborations – artworks, installations, and design fictions – in this panel reflect on energy transitions in ways that probe the structural and material continuities between a petro-cultural present and a renewable future. Informed by situated analyses, they examine the dark green dystopias that emerge in the physical components of renewable energy systems (plastics and metals, chemicals and microelectronics); in the forms of labour that span global supply chains; in market-led humanitarian interventions; in the eco-logics of land acquisition for energy projects; and in the economics of big data.

DARK GREEN: TRANSITIONS ON THE SPECTRUM

Jamie Cross & Silvia Pergetti

Jamie Cross is a senior lecturer in social anthropology at the University of Edinburgh. He is particularly interested in the cultural/material politics of photovoltaics, and the solar futures that are unfolding in contexts of global energy poverty.

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Silvia Pergetti is a PhD student in Social Anthropology at the University of Edinburgh. Her research pays close attention to the material politics of distributed solar energy systems in India’s Sundarbans, where competing visions for the future are both in tension with each other and complicated by rising sea levels.

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DARK GREEN BY HUMANITARIAN DESIGN

Craig Martin

Craig Martin is a senior lecturer in design in the School of Design, Edinburgh College of Art. His research examines cultures and geographies of design, with a current interest in the ad hoc repair and re-purposing of renewable energy technologies in refugee camps.

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DARK GREEN RESIDUES/REFUGEES, FUEL AND SUSTAINABLE FUTURES IN KENYA

Megan Douglas

Megan Douglas is a PhD student in International Development at the University of Edinburgh. Her research is an ethnography of sustainable energy technologies and informal livelihoods within refugee camps in Sub-Saharan Africa.

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DARK GREEN BATTERIES/LITHIUM FUTURES IN LATIN AMERICA

Emilio Soberon

Emilio Soberon is a PhD student in International Development at the University of Emilio Soberon Bravo is a PhD student in International Development at the University of Edinburgh. His research follows the continent-crossing supply chains of lithium-ion batteries through situated research in Chile and Bolivia.

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DARK GREEN ABUNDANCE: FUTURES, ECOSYSTEMS, AND DISTRIBUTED SOLAR IN THE SUNDARBANS, INDIA

Silvia Pergetti

DARK GREEN CRIMINALS: ELECTRICITY AND ILLEGALITY IN TAMIL NADU, INDIA

Rishabh Raghavan

Rishabh Raghavan is currently pursuing a PhD in Anthropology at the University of Edinburgh. His research focuses on electricity theft in South India. He is a filmmaker with five years of experience producing films for organisations and institutions in India's energy sector.

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DARK GREEN CONTROL: ADIVASI FUTURES AND SMART GRIDS IN ODISHA, INDIA

Kirsten Campbell

Kirsten Campbell is a PhD student in International Development at the University of Edinburgh. She has a background in renewable energy engineering and her research explores the social politics of solar micro-grids in India.

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DARK GREEN INFORMATION: DATA MINING AT THE GRID EDGE

Jamie Cross

8B. MATERIALITIES AND IMAGINARIES

101, 4 University Gardens

Speaker Organised Panel

“A NOT SO UTOPIAN FUTURE:” ARCHITECTURE AT THE BEGINNING OF THE GREAT ACCELERATION

Daniel A. Barber

Scholarly inquiry into the built environment has an interesting role to play in re-examining historical relationships of energy, culture, climate, and technology, and in imagining new patterns for these relationships today.

Architecture has played an essential role in historical energy patterns – both in consuming energy and emitting carbon, and in imagining alternative scenarios. This presentation will focus on the latter, describing how techniques for solar heating and sun shading were prominent, albeit under-recognized, aspects of the global architectural discussion in the period surrounding World War II – that is, at the beginning of the Great Acceleration. Solar-heated houses were designed for the American suburbs and for UN sponsored conferences on “New Sources of Energy;” sun-shading techniques proliferated through government and corporate research on building in the tropics. These techno-cultural developments not only produced novel designs, they also emphasized the role of architecture as a means to imagine, and then build, new relationships between social and biophysical systems. Architectural ideas became a discursive site to mediate between these systems, with ramifications for technological applications of the environmental sciences, and for the global ambitions of environmental governance. As a conclusion, I will reflect on the methodological implications that these architectural examples open up.

Daniel A. Barber is an Associate Professor of Architecture and Chair of the Graduate Group in Architecture at PennDesign. He is an architectural historian researching the relationship between the design fields and the emergence of global environmental culture across the 20th century.

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LITHIUM AND DEVELOPMENT IMAGINARIES IN CHILE, ARGENTINA AND BOLIVIA

Javiera Barandiaran

Used in batteries, lithium promises to reduce fossil fuel use by making electric vehicles affordable. The world’s largest lithium deposits lie in salt flats in the desert between Chile, Argentina and Bolivia. This article analyzes ongoing debates about lithium in these countries to assess whether they are converging on a discourse that aims to deliver more sustainable and equitable extractivism. My approach builds on the idea of “sociotechnical imaginaries.” I analyze the tensions, visions and metaphors used by the media and state and industry officials to imagine lithium extraction. I find three co- existing positions in these debates: lithium as a commodity, a strategic resource or a new development opportunity. Chile, Argentina and Bolivia are converging on the last of these, best described as a hopeful imaginary in which lithium, through innovation and industry, will redefine the relationship between Latin American economies and global markets. This is evidence of the “new extractivism”, in which the state plays an active role, and demonstrates the cultural resonance of the idea of the resource curse. This imaginary thus reaffirms the nation in a competitive global market, but also exposes its limited abilities to promote more radical imaginings of a post-carbon future.

Javiera Barandiaran is Assistant Professor in Global Studies at the University of California, Santa Barbara. Working with colleagues, in 2018-2019 Barandiaran will host a Mellon Sawyer Seminar on “Energy Justice in Global Perspective.” With the goal of helping to change the current energy regime, the seminar will cultivate knowledge of the narratives, identities, values, and forms of power held and promoted by communities on the front lines of past and present energy injustices. Barandiaran’s ongoing research on lithium mining in South America will contribute to the seminar’s themes.

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GREAT BALLS OF FIRE: BITUMEN AND THE PHILOSOPHY OF CONTAINMENT

Darin Barney & Hannah Tollefson

In unrelated developments in 2017, two Canadian firms announced the invention of techniques for transforming bitumen—an extremely heavy form of crude oil abundant in the Athabasca region of western Canada—into solid, self-contained balls. Rendered into this form, bitumen can be loaded into secondary containers – trucks and railcars – for relatively safe long distance transportation to continental refining facilities or to tidewater for marine shipping elsewhere, without the need for transport by pipeline. Petroleum producers and supportive governments in Canada have long made the case that economic exploitation of the Athabasca oil sands has been hampered by limited existing pipeline capacity, and the difficulty of building new pipelines in the face of political opposition from environmentalists, indigenous peoples and other groups. Bitumen balls would appear to represent a solution to this problem: a (self-)container that will unleash the economic potential (and environmental impacts) of bitumen extraction from the political forces that have otherwise been containing it.

This paper will examine the case of Canada's bitumen balls in order to explore the possibility of a political philosophy of containment in relation to energy. It will draw upon philosophical accounts of containers as modern technology in the thought of Martin Heidegger and Zoe Sofia, Timothy Mitchell's account of fossil fuel containers as media of political organization and sabotage, and more recent accounts of containerization in the emerging literature on logistics infrastructure. It will argue that containers are essential media of energetics – that potential requires prior containment – and that containment thus comprises a master category in the study of energy pasts and futures. Containers *matter* when it comes to energy and its social implications. By considering what and how bitumen balls contain, I hope to establish containment as a primary mode, and containers as a primary medium, of the material politics and culture of energy.

Darin Barney is the Grierson Chair in Communication Studies at McGill University. He is the author of several scholarly works, including *One Nation Under Google: Citizenship in the Technological Republic* (2007 Hart House Lecture); *Communication Technology: The Canadian Democratic Audit* (UBC Press: 2005); *The Network Society* (Polity Press: 2004); and *Prometheus Wired: The Hope for Democracy in the Age of Network Technology* (University of Chicago Press 2000). He is co-editor of several books and journal editions, including, most recently, *The Participatory Condition* (University of Minnesota Press: 2016). Barney's current research focuses on materialist approaches to media and communication, infrastructure and radical politics. He is presently completing a project on grain-handling infrastructure and the transformation of political subjectivity on the Canadian prairies, and beginning a project on pipelines as media of political action. He is a member of the Petrocultures Research Group, the After Oil collective, a founding member of Media@McGill, and a director of the Radical Critical Theory Circle.

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Hannah Tollefson is a doctoral student in Communication Studies at McGill University. Her work examines the mutual implications of infrastructure and environment, with a particular focus on infrastructures of extraction, logistics and energy in the context of Canada's resource economy. Her MA thesis explored the Northwest Transmission Line and the Stewart World Port, two large-scale energy and logistics projects set in the contested indigenous territories of northwest British Columbia. Her doctoral work explores infrastructural responses to climate change adaptation in Canada.

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8C: HISTORIES (OF HISTORIES) OF OIL

202, 4 University Gardens

Speaker Organised Panel

THE TRANSITION FROM COAL TO OIL IN THE MID-20TH CENTURY: WAS IT INEVITABLE?

Odinn Melsted & Irene Pallua

Between the 1940s and 1970s, oil took over from coal as the world's major source of energy. While much has been written about the rise of oil in the 20th century, it is often overlooked that oil needed to replace coal in many areas. In the mid-20th century, coal was still the dominant fuel in maritime and railway transportation, residential heating, industrial production and electricity generation. The takeover of oil is often portrayed as inevitable, since it is in many ways a superior fuel to coal. Oil is fluid, burns cleaner, has a higher energy density, is more convenient for transport and handling, and also became cheaper than coal. Recent studies of historical transitions, however, have highlighted that incumbent energy systems tend to resist change. How can the rapid takeover of oil be explained? We argue that the coal-to-oil transition was not predetermined or inevitable, but depended on a variety of factors. It was not simply a shift from a lesser to a better fuel, but a complex transition that occurred both at the level of energy supply, where oil became available at decreasing prices, and at the level of fuel consumption, where coal was substituted with oil in the areas of railway and maritime transportation, residential heating, industrial production and electricity generation. By doing so, we contribute important insights on the origins of the oil age and the nature of fuel transitions.

Odinn Melsted is a doctoral fellow at the Institute of History and European Ethnology of the University of Innsbruck. Having studied History and European studies at the University of Iceland, he joined Prof. Patrick Kupper's energy history working group at the University of Innsbruck in 2016. His doctoral project deals with Iceland's low-carbon transition during 1940– 1990 and is funded by a DOC-fellowship of the Austrian Academy of the Sciences. His main research interests are energy history, sustainability transitions and environmental history.

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Irene Pallua is a PhD candidate at the Institute of History and European Ethnology of the University of Innsbruck. She is currently working on her thesis on the history of the Swiss heating sector from 1950 to 2000 with a special focus on public buildings. She holds master's degrees in Social Ecology and in Communication and Political Sciences. Her main research interests are the history of energy on the interface of technology, society and environment.

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BUILDING 'OIL' IN BRITISH COLONIAL INDIA: A CATEGORY, AN INFRASTRUCTURE

Sarandha Jain

I construct a brief history of how the category of oil was put together and reined in by the British colonial state in India, from the 1870s to the pre-war period. I argue that oil is not a self-evident object, but an amalgamated category built up by regimes of thought in the colonial bureaucracy. Second I argue that oil is an infrastructure, used by the colonial state to elaborate itself, and as a means of control and disciplinary power. Nonetheless, it was embraced by Indian subjects in overwhelming ways, becoming embedded in quotidian life. This assisted the state in deploying it for control, but also opened unforeseen social and political possibilities for subjects. Neither the disciplining of petroleum, nor that of its popular use were straightforward, and presented the state and oil companies with obstacles and surprises. By tracing these encounters between the colonial state, oil's material difficulties and opportunities, and the consumer subject, I chart a journey of oil as it escaped government but also became government. Through this dialectic between oil's materiality and the state's

authority, I also present an account of the colonial state that runs counter to many a narration of it – that of a coherent, top-down and well organised project. Being a slippery substance, oil stealthily exposes the chinks in the armour of the colonial state. Being a networked system, it draws attention to the distributed sovereignty within colonialism, suggesting the involvement of actors outside the British Crown.

Sarandha Jain is in the third year of her PhD in anthropology at Columbia University in the United States. By studying the multi-nodal network of petroleum manufacturing, circulation and use in India, her research examines petroleum as an infrastructure for both the Indian state and society. She asks what modes of government, forms of sociality and constellations of power petroleum produces, and is produced by. In its manufacturing, what are the social elements in the technical process, and what politics do they harbour? In its use, how does it structure everyday life in cities? How does it mediate between the Indian state and citizens, and become the terrain over which their relationship is constituted? What makes it leak out of the logics of government and capital, that brought it into being, and be apprehended in unintended ways? Drawing on ethnographic and archival data, her project seeks to examine petroleum as a vascular system of India, from the epic to the everyday.

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ROLF PETER SIEFERLE AND THE IMPROBABILITY OF ENERGY TRANSITION

Thomas Turnbull

In 2016 historian Rolf Peter Sieferle killed himself in his Heidelberg home. His suicide note suggested a manuscript could be found on his computer. *Finis Germania* (2017) offered a deeply pessimistic account of Germany's decline as a result of the 2014-15 migration situation. The book created a heated debate in German intellectual life, and was banned by some retailers. Prior to this, Sieferle was best known as a historian of energy transition, specifically the shift from wood fuel to coal power in Western Europe. He documented this in *The Subterranean Forest (der Unterirdische Wald, 1982)*. Written during a period of controversy regarding West German nuclear power, the book described industrialisation from the perspective of ecological history. The intention was to illustrate the complexity and imperfections of past energy transitions as means to inform the *Atomkraft Angst* of the 1980s. Sieferle's ecologisation of human history, it will be argued, laid the seed for his later arguments regarding migration. By taking historians rather than histories of energy transition as its locus of inquiry, this paper is intended to introduce energy historians to their discipline's historiographical past. By doing so, my aim is to encourage the critical study of past explanations of energy transition.

Thomas Turnbull's interests lie at the intersection of historical geography, the history of science, and history of ideas. He is a Visiting Postdoctoral Fellow at the Max Planck Institut für Wissenschaftsgeschichte (MPIWG). There he is part of a research group 'Knowledge in and of the Anthropocene'. In 2017 he completed his doctoral thesis on the history of energy conservation as both a science and policy at the University of Oxford's School of Geography and the Environment. He is currently working on two manuscripts, one based on his thesis, and another looking at historical antecedents to the current energy humanities moment.

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8D. IDOC: DOCUMENTING DESIGNS FOR THE FUTURE [WORKSHOP] I

203, 4 University Gardens

During this workshop style session, we will show video clips to participants and seek their responses to what they hear about energy transition. The participatory conversation will consider how energy transition operates as a galvanizing politic around which we can actualize feminist, intersectional, and decolonial goals, one of our guiding principles. The discussion will be recorded for the purpose of archiving participants' reflections, iteratively extending the research and our collective imaginary about what the age beyond petroculture might look like, as well as our capacity to shape it. iDoc is jointly funded by Future Energy Systems (CFREF) and Feminist Energy Futures (SSHRC).

*This workshop will take place over the span of two sessions (8D & 9D). Please plan to attend both sessions if possible; participants are welcome to join for second half of workshop as observers.

**Pre-registration for the workshop is greatly appreciated so that the facilitators can prepare for the session. If you have not pre-registered, it's ok - please feel free to join us!

Please use this link to pre-register: <https://goo.gl/forms/VJi5C2Km3oiUZzXE3>.

PRESENTER/FACILITATORS:

MaryElizabeth Luka is Postdoctoral Fellow for iDoc and Speculative Energy Futures at the University of Alberta. Dr. Luka is an award-winning scholar, activist and digital producer for arts, culture and digital media, as well as in social enterprise, broadcasting, telecommunications, and creative management policy, planning and practice. She studies modes and meanings of creativity and innovation in the digital age, to investigate how civic, science and business sectors are networked together. iDoc and SEF are funded under the banner of Just Futures, including Future Energy Systems CFREF and the Feminist Energy Futures SSHRC grants.

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Sourayan Mookerjee is director of the Intermedia Research Studio at the Department of Sociology, University of Alberta where he specializes in decolonizing social theory, critical globalization studies, and intermedia research. His current projects include SSHRC funded research on The Commons and the Convergence of Crises, Toxic Media Ecologies: Critical Responses to the Cultural Politics of Planetary Crises and is co-director of Feminist Energy Futures and iDoc@Just Powers. He is a founding member of RePublicU, a critical university studies project, and of the Arts and the Anthropocene research creation CoLab at the University of Alberta.

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Sheena Wilson is Associate Professor at the University of Alberta, co-director of the international Petrocultures Research Group, and research-lead on Just Powers, an interdisciplinary and community-engaged initiative focused on climate justice organized around socially just energy transition for all. Funded by a Tri-Council SSHRC grant and the Future Energy Systems' Canada First Research Excellence Fund (CFREF), the research initiatives ongoing under Just Powers include, amongst others, Feminist Energy Futures: Power Shift and Environmental Social Justice; 2) Speculative Energy Futures 3) iDoc and 4) Bigstone Cree: A Vision for the Future. Dr. Wilson's monograph in process is titled *Deep Energy Literacy: Toward Just Futures*.

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Charles Stubblefield (in absentia) is a PhD student in the Department of Sociology at the University of Alberta. His primary research focuses on the production of knowledge within the contemporary world, looking at the ways that knowledge production is related to particular structures, social relations, and power. He draws on a diverse range of philosophical and theoretical perspectives, including phenomenology, the Frankfurt School, Karl Marx, Max Weber, Theodor Adorno, Michel Foucault, and Pierre Bourdieu. Specifically, he examines how the production of knowledges are constrained, provoked, and directed by the rise of digital technology and its relation to modern capitalism. However, as ecological destruction becomes increasingly pervasive and prominent he has expanded his research to concurrently examine the contested term of the “Anthropocene.” Here he examines the barriers and capacities for human thought to respond to ecological crises and the ways in which our thought and ability to respond to ecological crises are constrained by social institutions, power, discourses, and social relations more generally. The goal of this research is to challenge those constraints and to expand our ability to think of more egalitarian and less destructive social and human-nature relations.

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8E. NORWAY'S POST-PETROLEUM PATHWAYS AND SCENARIOS

203, 10 University Gardens

Session Organisers: *Bright Dale*

Norway, as the largest oil and gas producer in Western Europe, is facing economic, political and sociocultural challenges as it seeks to make a 'green' transition. Since 2014, global investments in oil has been halved and just in the past year the political situation has shifted significantly with international organizations moving away from oil, climate negotiations re-focusing on national efforts, and climate law-suits challenging policymakers from 'within' to leave oil in the ground. Still, Norway – even with petroleum production decreasing - has doubled its investments in oil and gas during the previous decade.

This workshop will take Norway as a case in point for how the future of (or beyond) oil is negotiated in oil-dependent regions and oil-producing environments. We will facilitate discussions on narratives, strategies and policy, local and regional responses to the expansion of extraction into new frontiers, and the tension between efforts to extend the discourse on the importance of the petroleum economy, its influence on other energy environments and (in opposition) the rhetorical turn away from petroleum. Thus we seek to open discussions on themes otherwise avoided concerning potential and alternative futures, particularly when it comes to the consequences of planning, ultimately, for a post-petroleum society.

NORWEGIAN OIL POLITICS AND DEVELOPMENTS IN THE BARENTS SEA

Helge Ryggvik

Helge Ryggvik is research professor at Center for Technology, Innovation and Culture at the University of Oslo. As an economic historian Ryggvik's methodological approaches are comprehensive, from a broad political economy approach to more specific analyses of humans relations to technology, the latter most notably in his study of business structure, safety systems and lately, the climate issue and environment in the Arctic. A common empirical starting point for many of his studies is the oil industry. However, he also has written about other subjects, such as trade unions and Norwegian Railways.

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NORWEGIAN PARLIAMENTARY DISCOURSES ON NATURE, ENVIRONMENTALISM AND PETROLEUM 1970 - 2018

Gisle Andersen

Gisle Andersen holds a PhD in Sociology from the University of Bergen. His research covers the study of the development of environmental regulation in Norway, with a particular focus on argumentation in Parliament, the significance of science-based expertise, and the changing valuation of nature in modern societies. Thematically he has in depth knowledge on petroleum regulation, ecosystem-based marine management plans, climate policies and environmental principles in the Norwegian constitution.

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THE ARCTICCHALLENGE PROJECT: ANTICIPATION, PATHWAYS AND SCENARIOS ON THE EVE OF THE NORWEGIAN PETROLEUM ERA

Bright Dale

Bright Dale is a Senior Researcher at Nordland Research Institute in Bodo, Norway. With background in visual and social anthropology and political science, a combination of ethnographic approaches, security theory and a critical constructivist approach has permeated his research. Over the past decade Dale has focused on the political, social, cultural and economic preconditions for and consequences of extractive industries' activities in Arctic communities. Dale led the recently finalized project ARCTICCHALLENGE on petroleum as a challenge to Arctic communities, and was the lead editor of the Springer volume "The Will to Drill. Mining in Arctic Communities" (2018).

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8F. OIL ON THE TABLE: AN EXPERIMENTAL WORKSHOP

205, 4 The Square

Session Organisers: *Benjamin Steininger & Alex Close*

To de-'monstrate' the complexities and variabilities of oil, the 'monster' itself will be made present: together with the participants we will display and arrange various materials from petroculture to explore their sensual and affective qualities: auratic testimonies of cultural and natural history such as crude oil and a drill core, film and audio material, a pain killer, plastics from consumer culture, etcetera. The table itself is a playing field and showcase evoking and exhibiting dichotomies, fields of force, paradoxes that are typical for the petrol age: a parliament of petromodern things.

Alexander Klose, Dr.phil, is a cultural scientist and curator based in Berlin. Since the late 1990s, he has been walking the line between theoretical and curatorial practice, with a focus on modern technologies and subjectivities. Between 2000 and 2009 he worked on an artistic research and later phd project on the principles and practices of containerization (*The Container Principle. How a Box Changes the Ways We Think*, Boston/MA: MIT Press 2015). Together with Benjamin Steininger and Bernd Hopfengärtner he is part of the group Beauty of Oil, dedicated to a multidisciplinary research on the cultural, theoretical and material foundations of the petrol age (upcoming exhibition 2019/2020: Kunstmuseum Wolfsburg, Vienna Belvedere).

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Benjamin Steininger, Dr. phil, is postdoc at the Max Planck Institut for the History of Science, Berlin, media theorist and curator. Main research fields: History and theory of chemical industry, catalysis, fossil modernity, energy transformations, anthropocene. Scholarships, teaching, cooperations: Haus der Kulturen der Welt Berlin, Deutsches Museum Munich, IFK Vienna, University of Applied Arts Vienna, University of Linz, Leuphana University Lüneburg. From 2012-2016 he was directing a digital collection and exhibition project on 100 years of the oil industry in Austria (Partners: Geological Survey Austria, OMV AG, RAG, Vienna Technical Museum).

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8G: RELIGION AND HYDROCARBONS: PERSPECTIVES FROM NORWAY, THE UNITED STATES, AND BEYOND
205, 5 University Gardens

Session Organiser: *Evan Berry*

In our era of ecological devastation, the environmental humanities are flourishing. Within this domain of academic inquiry, however, there remains a need for thoughtful accounts of the place of religion as an enterprise tightly interwoven with human ecologies. This holds true for the energy humanities, where the interpenetration of religious traditions and modern energy systems lays right before our eyes, but, perhaps given the slippery interface between oil and culture, it can be difficult to fully appreciate these relations. The politics of fossil fuel production are shot through with religion, a fact readily evident in the oil fueled rivalry between Shia and Sunni nations, the uncanny correspondence between pipelines and state-sanctioned violence against religious minorities in places like Myanmar and Turkey, or the novel collaboration of Christian clergy with Indigenous-led struggles against extraction projects. Curious about such dynamics, the proposed panel brings together four papers that examine the relationships between religion and fossil fuels, scrutinizing the actors, ideas, and places where hydrocarbons and religions intermingle. These papers present a geographically diverse set of cases that locate religion as a critical source of social norms, which sometimes serves to legitimate hydrocarbon extraction and other times suggests pathways toward more sustainable futures. The four presenters operate from different methodological perspectives, working in loose coordination to articulate the local specificities with which the religious dimensions of petrocultures are rendered.

RELIGION, PLACE-ATTACHMENT AND ECONOMIC TRANSITION IN APPALACHIAN COAL COUNTRY

Joseph Witt

Southern Appalachia (a mountain range located in the southeastern U.S.) has been economically, politically, and culturally shaped by the coal industry for over a century. The industry and its associated institutions have been deeply involved in the formation of Appalachian cultural identities, religious worldviews, and visions of place. However, while coal remains a dominant force in the region, there are also numerous ongoing efforts to develop new, community-based economic alternatives to energy extraction. Based in archival research and interviews with local stakeholders, this paper presents ongoing research on the interrelations between religious values, place-attachments, and community-led efforts toward economic transition in the Appalachian coal fields. From long-lived organizations like Kentuckians for the Commonwealth to newer efforts such as the West Virginia Mine Wars Museum and the STAY Project, Appalachians are actively harnessing their affective connections to place (place attachments) and religious worldviews, including diverse forms of Christian religiosity as well as nature-based spiritualities, to shape new post-coal identities and institutions while promoting economic autonomy and environmental sustainability. This paper demonstrates that understanding the evolving influence of coal in Appalachia, as well as efforts to transition to alternative industries and economic opportunities, requires also understanding local religious attitudes toward place.

Joseph Witt is Associate Professor of Religion at Mississippi State University, Assistant Professor of Environmental Humanities at the Middlebury School of the Environment, and Co-Editor of the *Journal for the Study of Religion, Nature and Culture*. His research and teaching interests focus on the intersections between religious and environmental attitudes and behaviors, as well as environmental humanities and place-based pedagogies. His recent book, *Religion and Resistance in Appalachia* (University Press of Kentucky, 2016), examines the place of religious values within the local direct-action resistance movement against mountaintop removal coal mining in Appalachia.

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HYDROCARBON SPIRITUALITIES: FOSSIL FUEL EXTRACTION AS RELIGIOUS PRODUCTION

Evan Berry

Stephanie LeMenager refers to petroleum as a liquid “form of capital” that flows through economies around the world with a special capacity for generating novel forms of cultural energy and exuberance. Working from the premise that hydrocarbon production is an underappreciated dimension of religious modernization, this paper develops an account of fossil fuel extraction as a form of religious production, a force that makes possible particular expressions of religious commitment and rewards particular kinds of religious organization. Two aspects of modern religion are particularly noticeable from the perspective of the energy humanities: the role of religion in reinforcing the legitimacy of state control over natural resources and the lifestyles of spiritual freedom made possible by hydrocarbon energy. This paper examines the interplay of these twin dynamics—state religion and petroleum spiritualities—as they combine in various ways to shape the religious landscape in hydrocarbon export societies, including Saudi Arabia, Brazil, and the United States.

Evan Berry is an Associate Professor and Graduate Programs Director in the Department of Philosophy and Religion at American University. His research examines the role played by religious traditions in shaping the way that modern societies conceptualize and respond to environmental issues, specifically by charting the ways that religion is mobilized politically in relation to climate change and other sustainability issues. His first book, *Devoted to Nature: The Religious Roots of American Environmentalism* (University of California Press 2015), traces the influence of Christianity on the environmental movement in the United States.

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8H. SPECULATIVE FICTIONS AND ENERGY II

101, 5 University Gardens

Speaker Organised Panel

CORNUCOPIANISM AND RENEWABLES: REPRESENTATIONS OF ENERGY AND HUMAN ENERGY USE IN WESTERN TRANSITION UTOPIAS

Rut Elliot Blomqvist

In Western politics and knowledge production, ideas about energy transition tend to presuppose a green wave of industrial-technological progress. Through a combination of literary theory and political ecology, this paper investigates the relation between utopian accounts of industrial renewable energy technologies and the flows of resources and embodied labour in the world system which constitute such technologies. I analyse the socialist visions in Naomi Klein's *This Changes Everything* and science fiction writer Kim Stanley Robinson's novel *2312*, and the capitalist visions in UN sustainable development advisor Jeffrey Sachs's *The Age of Sustainable Development* and lobbyist Jonathon Porritt's design fiction *The World We Made*. Despite their political differences, the texts' conceptualisations of energy and human energy use overlap; they all convey a concern with flows of monetary signs and technological progress as animating forces in human society, while also (albeit to different degrees) acknowledging the sun and the land as the ultimate sources of life on earth. The paper thus reveals a tension in Western transition utopias between fetishism of money and technology as cornucopias and the recognition that human life, society and technology are always fuelled by biomass.

Rut Elliot Blomqvist is a PhD student in English and environmental humanities at the University of Gothenburg, Sweden. They are working on a transdisciplinary dissertation combining political ecology and literary and cultural analysis to discuss both different conceptions of the role of the arts and the imagination in environmentalism, and how causes of environmental issues and prospects for political change are construed in visions of a sustainable future in the contemporary Global North. Elliot is also one of the editors of *Uneven Earth*, an online magazine about environmental justice.

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COALWORLD: ENVISIONING A WORLD WITH HALF THE OIL

Josefin Wangel (presenter), Daniel Pargman, Mikael Höök, & Elina Eriksson

Energy infrastructure decision taken today are dependent on (sometimes bad, sometimes lousy) decisions taken decades ago that will have (partially unforeseen) implications for decades ahead. The weight of past decisions restricts our choices today and limit our imagination of possible solutions - including solutions in "paths not taken" that might be or relevance here-and-now.

In an attempt to widen the boundaries of the probable, the plausible, the possible and the preferable (Amara 1981, Bell & Olick 1989, Bell 2003), to defamiliarize and distance ourselves from the taken-for-granted (Shklovsky 1917, Bell et. al. 2005) and to shatter the shackles that limit our imagination (Tanenbaum et. al. 2016), the Coalworld project (Pargman et al 2017) explores future energy transitions by placing them in the past. The starting point of the Coalworld project is the simple counterfactual (Ferguson 2000, Todorova 2015) statement "what if there had only been half the oil in the ground back in 1859?" What if there ever only existed 1 instead of 2 trillion barrels of oil in the ground (Deffeyes 2006, Campbell 2013)? This initial geological change sets a deviation-amplifying spiral (Maruyama 1963, Sproull & Kiesler 1992) into motion and construes a world where peak oil happened several decades ago. We are currently exploring the consequences of that scenario in a series of articles about Coalworld.

Josefin Wangel is an un-disciplinary researcher and teacher at SLU Swedish University of Agricultural Sciences. Her work-life passion is sociomaterial systems thinking, critical theory and futures studies, particularly for exploring how sustainable + urban can be combined and often with focus on energy and climate change. She

has published a sufficient amount of papers and one book (Vitiden – an energy fiction) and is part of the editorial board of *Futures*, where she is currently guest editor for the special issue on WiseFutures N.O. You can learn more here: <https://www.slu.se/en/cv/josefin-wangel/>.

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Daniel Pargman is an associate professor in media technology at the Department of Media Technology and Interaction Design (MID) at KTH Royal Institute of Technology, Sweden. His research interests are situated in the intersection of on the one hand computing and on the other hand sustainability and energy research. He visited the Institute of Environmental Science and Technology (ICTA) in Barcelona during his recent sabbatical to learn more about Degrowth and other social movements that work towards transformational change of society.

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Mikael Höök is an Associate Professor at the department of Earth Sciences in Uppsala University. His research focus is on energy system transitions, fossil fuels and raw materials, such as lithium and co called 'critical materials' for clean/green energy technologies.

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Elina Eriksson is an assistant professor in human-computer interaction and sustainability at the Department of Media Technology and Interaction Design (MID) at KTH Royal Institute of Technology, Sweden. Her current research projects concern ICT for urban sustainability, sustainable lifestyles, and exploring energy futures.

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'THIS HORSE-AND- BUGGY ERA': READING WORLD-ECOLOGY, 'ENERGY-ANGST', AND ENERGY TRANSITIONS IN OCTAVIA E. BUTLER'S *KINDRED*.

Thomas Lubek

I read Octavia E. Butler's *Kindred* (1979) through Jason Moore's world-ecological conception of capitalism, work by energy humanities scholars, and 'world-literary' methodologies (WReC 2015). Exploring *Kindred*'s 'energy unconscious' (Yaeger 2011) demonstrates how it situates the iniquities of neoliberal capital in the world-historical context of capital's 'Law of Cheap Nature' (Moore 2015). The novel adopts SF, neo-slave narrative, and dystopian modes as its protagonist Dana repeatedly "transitions" between her 1970s home in California and the Weylin plantation in antebellum Maryland. Against 'capitalist realism' (Fisher 2009) and neoliberal "petro-fantasies" of limitless extractivism, *Kindred* traces 'the brutal consequences of a future of slow decline' (Szeman 2011), by returning to the body-bound energetic brutalities of plantation slavery. The novel evinces 'energy-angst' (Macdonald 2013), provocatively juxtaposing high-energy petromodern lives with the 'horse-and-buggy era' of early 19th Century America, simultaneously problematizing any eco-nostalgic sense of a post-peak return to pre-petrolapsarian arcadias, and the 'petromelancholia' animating dystopian and apocalyptic discourse (LeMenager 2013). The novel underscores the particularities and continuities of raced and gendered labour-extractivism under plantation slavery and precarious neoliberal labour regimes, and is, along with SF more generally, an important 'world-literary resource' (Westall 2017) in helping us imagine and navigate sustainable and equitable world-ecological energy transitions.

Thomas Lubek is a second year PhD student at the University of York, funded by the AHRC through the White Rose College and the Arts & Humanities (WRoCAH). My doctoral thesis builds on Graeme Macdonald's suggestion that SF has 'the most inherently radical potential' to stimulate debates about 'energy futures'

(2016). I examine how worlded SF texts situate the combined unevenness of neoliberalism's petromodern energy regimes in terms of capitalism's *longue durée* as 'a way of organizing nature' (Moore 2015), and are thus important 'world-literary resources' (Westall 2017) which challenge neoliberalism's petro-fantasies of limitless accumulation, helping us navigate transitions to world-ecological regimes beyond oil and capital.

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RIGS AND ISLANDS

Fiona Polack

Can emerging cultural imaginaries associated with islands help us re-envisage offshore oil rigs and their futures? In recent years, artists and scholars have challenged entrenched European perceptions of islands as spaces rigidly delineated from the ocean, and ripe for the plunder of colonizers— notions most famously articulated in Daniel Defoe's *Robinson Crusoe* in 1719, and ones that have remained powerful ever since. As Godfrey Baldacchino puts it, "we really need to get wet," and envisage instead "an imbricated land-sea universe." Focusing on archipelagoes and aquapelagoes has become particularly important to this project.

Part ship, part industrial processing site, part artificial island, occupied by shifting rosters of highly mobile workers, offshore rigs initially seem to bear little resemblance to traditional islands. However, they, too, are habitually utilized as tools for wealth creation by speculators located elsewhere, and their successful operation depends on the exploitation of the environment. Both islands and oil rigs are key to what John Urry describes as the contemporary phenomenon of "offshoring:" a principle reliant on hiding from view in order to avoid regulatory oversight and control.

This paper explores the conceptual possibilities that can emerge from juxtaposing cultural figurations of oil rigs and islands.

Fiona Polack is an Associate Professor in the Department of English at Memorial University of Newfoundland, where she teaches petrofiction, as well as postcolonial and island studies. She has published widely on settler colonialism in Australia and Canada, and her edited collection *Tracing Ochre: Changing Perspectives on the Beothuk* appears with University of Toronto Press in spring 2018. In the energy humanities field, her current research focuses on cultural figurations of the offshore oil industry. She and colleague Danine Farquharson collaborate on a project called Cold Water Oil (coldwateroil.ca), and were co-organizers of *Petrocultures 2016: The Offshore*. Fiona Polack is Academic Editor at Memorial's North-Atlantic focused Press, ISER Books.

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PANEL SESSIONS 9 | 14.45 - 16.00 | SATURDAY 1ST SEPTEMBER

9A. DARK GREEN: ENERGY DYSTOPIAS AFTER OIL II

Charles Wilson Lecture Theatre

Session Organisers: *Jamie Cross & Silvia Pergetti*

Discussants: *Cymene Howe & Dominic Boyer*

How are we to imagine a world after oil? Emerging genres of speculative science fiction writing – like ‘SolarPunk’ – as well as architectural and design projects – from [ecotopia2121](http://ecotopia2121.com) to maasaisolar.org – neatly capture the ethics and technics of hope for a post-petrochemical world. Powered by abundant supplies of renewable energy, these utopian visions seek to bring into being the very worlds they describe.

This panel responds to the pre-figurative politics of hope in green visions by exploring the material politics and limits to lives lived with renewable energy infrastructures, technologies and devices. Showcasing a series of new collaborations between social scientists, fine artists, designers, developers and filmmakers the panel asks, ‘what do energy dystopias look like after oil?’

The collaborations – artworks, installations, and design fictions – reflect on energy transitions in ways that probe the structural and material continuities between a petrocultural present and a renewable future. Informed by situated analyses, they examine the dark green dystopias that emerge in the physical components of renewable energy systems (plastics and metals, chemicals and microelectronics); in the forms of labour that span global supply chains; in market-led humanitarian interventions; in the eco-logics of land acquisition for energy projects; and in the economics of big data.

Jamie Cross is a senior lecturer in social anthropology at the University of Edinburgh. He is particularly interested in the cultural/material politics of photovoltaics, and the solar futures that are unfolding in contexts of global energy poverty.

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Silvia Pergetti is a PhD student in Social Anthropology at the University of Edinburgh. Her research pays close attention to the material politics of distributed solar energy systems in India’s Sundarbans, where competing visions for the future are both in tension with each other and complicated by rising sea levels.

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DARK GREEN DEVICES

Alan Brown

Alan Brown is a visual artist working with audio, moving image and technology. His art practice involves modifying existing devices or equipment to function in altered or unexpected ways. His installations and device art examine themes around technology, communication, control and power, raising questions about how we use devices and technology, exchange information and relate to one another.

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FRAGMENTS OF A DARK GREEN RESIDENCY: MATERIALS, PROPOSALS, FUTURES

Hannah Imlach

Hannah Imlach is a visual artist working predominantly in sculpture. Her transient and site-specific works respond to a particular landscape or recent development in scientific understanding and often focuses on environments threatened by changing climate. Hannah focuses on site-specific residencies and commissions, particularly those which offer opportunities to work directly with scientists and environmental researchers.

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DARK GREEN COLLABORATIONS

Not Just Energy Futures Research Group

The Not Just Energy Futures Research Group is a collective of academic researchers with backgrounds in social anthropology, engineering, policy and filmmaking at the University of Edinburgh

Website http://www.san.ed.ac.uk/research/research_themes/not_just_energy_futures

9B. WISE POST-PETRO FUTURES [WORKSHOP]

101, 4 University Gardens

Session Organiser: *Josefin Wangel*

This workshop invites the petrocultures crowd to engage in a dialogue on what could (or should!) be the basic characteristics of utopian post-petro futures. The word utopian fills two functions here: first, to remind us that all futuring is essentially political (Levitas 2013), second, to avoid falling into doom-and-gloom escapism (Haraway 2016). The dialogue will be actively facilitated based on agonistic pluralism (Mouffe 2013) and diffraction (Barad 2014), i.e. allowing for differences in perspectives and/or priorities to be articulated and influence the conversation. The focus of the joint exploration will need to be based on the interests and experiences of the participants and could involve e.g. virtues, materials, everyday life practices, governance systems, systems of production and their related post/non-capitalist, anthropocentric, patriarchal, racist, imperialist structures. To allow for a fruitful dialogue the number of participants actively contributing to the dialogue will have to be somewhat limited. The dialogue is designed to provide input for a dialogue report for a special issue on WiseFutures N.O to be published in the journal Futures (call is to be published by mid February), and will be recorded and later transcribed. Participants will be invited to act as co-authors/editors of the material produced.

Josefin Wangel is an un-disciplinary researcher and teacher at SLU Swedish University of Agricultural Sciences. Her work-life passion is sociomaterial systems thinking, critical theory and futures studies, particularly for exploring how sustainable + urban can be combined and often with focus on energy and climate change. She has published a sufficient amount of papers and one book (*Vitiden – an energy fiction*) and is part of the editorial board of Futures, where she is currently guest editor for the special issue on WiseFutures N.O. You can learn more here: <https://www.slu.se/en/cv/josefin-wangel/>.

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9C. IRANIAN PERSPECTIVES

202, 4 University Gardens

Speaker Organised Panel

NATURAL GAS, POLITICAL CULTURE AND PUBLIC DISCOURSE IN IRAN

Ciruce A. Movahedi-Lankarani

In the second half of the twentieth century, natural gas became the predominant energy source of Iranian society. The transition away from oil-based fuels had far-reaching effects, from Iran's foreign relations to the taste of people's food, and had particularly strong reverberations within Iranian political culture. International oil firms had proved to be resistant to exploiting the vast quantities of associated gas being produced, and subsequent Iranian efforts to forge ahead became imbued with an aura of self-sufficiency. Allied with broader narratives of modernization used to legitimize the Iranian monarchy, gas energy was framed as a monumental testament to the independence and progress of Iranian society: a futuristic energy source for a future world power. For some Iranians though, gas came to symbolize a future out of reach, a stark reminder of yawning social inequalities. Numerous petitions were signed and complaints filed over the failure to provide gas, and building a supply network for all became an important expression of the Islamic Republic's promise to bring economic justice. Based on archival work in Iran, this paper explores how natural gas became part of Iranian political culture and public discourse, ultimately both informing and being harnessed by competing social visions.

Ciruce A. Movahedi-Lankarani is a doctoral candidate in history at the University of Pennsylvania. He is working on a techno-social history of gas energy in twentieth-century Iran, focusing on how natural and liquid petroleum gas have become the dominant energy sources of the country. He is particularly interested in how the transition to gas has shaped Iranian society and culture and its influence on the everyday lives of Iranians. His work has been supported by the Social Science Research Council.

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AN OIL ASSEMBLAGE IN TRANSITION? THE TENSIONS OF SOVEREIGNTY IN THE NATIONALISATION OF OIL IN IRAN

Mattin Biglari

In this paper I examine the theme of 'transitions' in relation to the nationalisation of oil in Iran in 1951. In particular I address the extent to which nationalisation marked a genuine transition in the practices of the oil industry in Iran, especially concerning labour. I point to the tension between the oil nationalisation movement's demand for national sovereignty and the micro-experiences of oil in the country's main refinery town of Abadan. I argue that, due to a combination of the technocratic biases of the nationalisation movement and the practices and infrastructures of the Anglo-Iranian Oil Company, the existing oil assemblage was reproduced post-nationalisation. Within public discussion leading up to nationalisation, and especially in the nationalist press, the predominant view tended to make a distinction between the technical organisations of the oil company as constituting a neutral, self-contained system worthy of admiration, on the one hand, and the imperialism of its British owners, on the other. As a result, this movement overlooked the contested nature of the technology, knowledge and labour relations built into the system itself – something that would shape the nationalised industry in the years ahead.

Mattin Biglari is a PhD candidate studying History at SOAS, University of London. His thesis focuses on the production of expertise and its relationship to labour in the Iranian oil industry in the mid-twentieth century, especially in the Abadan Refinery and Abadan Technical Institute. His thesis seeks to bring together the fields of Iranian Studies and the Energy Humanities. Previously he studied an MA in Near and Middle Eastern Studies, also at SOAS. He has also written on U.S. foreign policy during the Iranian revolution as well as criminality in late Qajar Iran.

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A “FAILED EXPERIENCE”: THE IRANIAN OIL INDUSTRY AND ITS LOCAL COMMUNITIES

Roya Khoshnevissansari

This paper studies the cultural geography of oil in Iran as an industrial dystopia. Using the concept of “failed experience”, it explores the relationship of local communities with the oil industry and industrialisation in southern Iran through the analysis of images.

“Failed experience” refers to the condition in which individuals are disconnected from the events around them, resulting into the emergence of trauma. From this perspective, the emergence of the Iranian oil industry can be described as a traumatic development for the local population. The disconnect was a function of the semi-colonial nature of the oil industry and the rapid processes of industrialization that drew nomadic locals into urban industrial processes.

By looking to photographic images, this “failed experience” and trauma are explored in three different phases: the early years of the discovery of oil in Masjed-e Soleyman (1908-1925), the years of political tensions in Abadan in the 1940s and 1950s, and the recent accident with the Sanchi oil tanker in the South China in January 2018.

Roya Khoshnevissansari is a Phd candidate at the Humanities Faculty of the Leiden University. Her research project is on fictional works connected to two places around the Persian Gulf, i.e. the Khuzestan region in southern Iran and the Dammam metropolitan region in eastern Saudi Arabia.

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9D. IDOC: DOCUMENTING DESIGNS FOR THE FUTURE [WORKSHOP] II

203, 4 University Gardens

During this workshop style session, we will show video clips to participants and seek their responses to what they hear about energy transition. The participatory conversation will consider how energy transition operates as a galvanizing politic around which we can actualize feminist, intersectional, and decolonial goals, one of our guiding principles. The discussion will be recorded for the purpose of archiving participants' reflections, iteratively extending the research and our collective imaginary about what the age beyond petroculture might look like, as well as our capacity to shape it. iDoc is jointly funded by Future Energy Systems (CFREF) and Feminist Energy Futures (SSHRC).

*This workshop will take place over the span of two sessions (8D & 9D). Please plan to attend both sessions if possible; participants are welcome to join for second half of workshop as observers.

**Pre-registration for the workshop is greatly appreciated so that the facilitators can prepare for the session. If you have not pre-registered, it's ok - please feel free to join us! Please use this link to pre-register: <https://goo.gl/forms/VJi5C2Km3oiUZzXE3>

PRESENTER/FACILITATORS:

MaryElizabeth Luka is Postdoctoral Fellow for iDoc and Speculative Energy Futures at the University of Alberta. Dr. Luka is an award-winning scholar, activist and digital producer for arts, culture and digital media, as well as in social enterprise, broadcasting, telecommunications, and creative management policy, planning and practice. She studies modes and meanings of creativity and innovation in the digital age, to investigate how civic, science and business sectors are networked together. iDoc and SEF are funded under the banner of Just Futures, including Future Energy Systems CFREF and the Feminist Energy Futures SSHRC grants.

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Sourayan Mookerjee is director of the Intermedia Research Studio at the Department of Sociology, University of Alberta where he specializes in decolonizing social theory, critical globalization studies, and intermedia research. His current projects include SSHRC funded research on The Commons and the Convergence of Crises, Toxic Media Ecologies: Critical Responses to the Cultural Politics of Planetary Crises and is co-director of Feminist Energy Futures and iDoc@Just Powers. He is a founding member of RePublicU, a critical university studies project, and of the Arts and the Anthropocene research creation CoLab at the University of Alberta.

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Sheena Wilson is Associate Professor at the University of Alberta, co-director of the international Petrocultures Research Group, and research-lead on Just Powers, an interdisciplinary and community-engaged initiative focused on climate justice organized around socially just energy transition for all. Funded by a Tri-Council SSHRC grant and the Future Energy Systems' Canada First Research Excellence Fund (CFREF), the research initiatives ongoing under Just Powers include, amongst others, Feminist Energy Futures: Power Shift and Environmental Social Justice; 2) Speculative Energy Futures 3) iDoc and 4) Bigstone Cree: A Vision for the Future. Dr. Wilson's monograph in process is titled *Deep Energy Literacy: Toward Just Futures*.

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Charles Stubblefield (in absentia) is a PhD student in the Department of Sociology at the University of Alberta. His primary research focuses on the production of knowledge within the contemporary world, looking at the ways that knowledge production is related to particular structures, social relations, and power. He draws on a diverse range of philosophical and theoretical perspectives, including phenomenology, the Frankfurt School, Karl Marx, Max Weber, Theodor Adorno, Michel Foucault, and Pierre Bourdieu. Specifically, he examines how the production of knowledges are constrained, provoked, and directed by the rise of digital technology and its relation to modern capitalism. However, as ecological destruction becomes increasingly pervasive and prominent he has expanded his research to concurrently examine the contested term of the “Anthropocene.” Here he examines the barriers and capacities for human thought to respond to ecological crises and the ways in which our thought and ability to respond to ecological crises are constrained by social institutions, power, discourses, and social relations more generally. The goal of this research is to challenge those constraints and to expand our ability to think of more egalitarian and less destructive social and human-nature relations.

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9E. PETROCULTURES AND MARGINAL TRANSFORMATIONS

203, 10 University Gardens

Session Organisers: John-Andrew McNeish, Iselin Strønen & Owen Logan

A MISSING PEACE OF TRANSITION: MARGINALITY AND THE BLOODY PETROCULTURE OF COLOMBIA

John-Andrew McNeish

I discuss in this paper the bloody struggle for peace and green transition in Colombia. The paper highlights the growing public support for a national green party and moves by the centre-left to push for a transformation of the national economy away from non-renewable resource extraction. It also highlights the manner in which this green wave has largely been frustrated by the persisting insecurity and political corruption in the country. Although the Peace Accord with the FARC aimed to end 55 years of armed conflict, since its signature at the end of 2016 there has been a rising spate of threats, attacks and assassinations (over 200) in communities protesting the expansion of mines and oil and gas installations. The political focus on ending the armed conflict, using the country's rich natural resources to help finance the peace, has also overshadowed any efforts to push in an alternative direction for development. Economic elites who own two thirds of agricultural land, are heavily invested in extractive and energy projects and own the popular media publicly deride environmental campaigners' suggestion that national peace relies on land reform, participatory decision-making and a significant slowing down of extractive activities. Indeed, public announcements by government officials including Ivan Duque, Colombia's newly elected President, mirror the language of resurgent para-military organizations who claim to defend the national interest and view environmentalists and land defenders alike as threats and terrorists. In this context, one of many geographical and sociological margins, "a world after oil" can still only be imagined.

John-Andrew McNeish is Professor of International Environment and Development Studies at the Norwegian University of Life Sciences (NMBU). McNeish is a social anthropologist specialized in the study of indigenous and natural resource politics in Latin America. He is author of a series of peer-reviewed articles and co-author of *Flammable Societies: Studies in the Socio-Economics of Oil and Gas* (Pluto Press 2012) and *Contested Powers: The Politics of Energy and Development in Latin America* (Zed Books 2015). He is currently writing a monograph contracted to Berghahn Books with the working title *Sovereign Powers: The Political Energy of Natural Resources in Latin America*.

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INSIDE/OUTSIDE THE ENIGMA OF OIL IN VENEZUELA: VERNACULAR HORIZONS OF TRANSITION AND THE WESTERN INTELLECTUAL GAZE

Iselin Åsedotter Strønen

Venezuela has since long been regarded as an oil state per excellence. More recently, the country's reliance on oil has been highlighted as one of its innate and overarching national pathologies in the face of its current economic and social crisis. Moreover, the late Hugo Chávez's failure to diversify the country's oil reliance has also been taken as evidence for the political failure of his presidency. Whilst Venezuela's continuous and overwhelming oil reliance undoubtedly is the country's Achilles heel, this paper argues that the complexity of Venezuela's entanglement with oil defers superficial diagnosis of the problem. There are no quick-fixes for a post-oil era transformations nor for far-reaching economic diversification – not in Venezuela, nor in other countries – and any substantive analysis of Venezuela's oil reliance and its consequences needs to be adequately contextualized and historicized. The nation's consolidation as an oil-exporting developing country needs to be situated within a broader understanding of global political economies and structures of power, and the role and meaning of oil in various dimensions of Venezuelan society needs to be unpacked. Only then can we properly understand the pervasive power of oil in Venezuelan society without falling into the trap of applying Western-biased diagnosis and cures to the problem.

Iselin Stronen is a researcher at the Chr. Michelsen Institute (CMI) in Bergen, and Senior Lecturer at the Department of Social Anthropology, the University of Bergen. Iselin has conducted ethnographic research in Venezuela since 2005. Amongst her most recent publications about Venezuela is the monograph *Grassroots Politics and Oil Culture in Venezuela. The Revolutionary Petro-state* (Palgrave MacMillan 2017). Strønen is also conducting research in Brazil and Angola. Her research interests include the anthropology of oil and natural resource management, grass root democracy, social movements, state transformation, political conflicts and social struggle, poverty, violence and gender, and the politics of Corporate Social Responsibility (CSR).

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UTOPIA TURKANA STYLE: THE POLITICIZED VISION OF A POST-OIL ERA AT THE MARGINS

Marianna Betti

Large amounts of oil were discovered in Turkana in 2012 with Anglo-Irish oil company Tullow in charge of the operations. Since 6 years from the discovery of the precious resource, Turkana people, the majority of whom still practice nomadic pastoralism on a subsistence level, have experienced a rise in conflict at different scales. Many vital communitarian ties have crumbled because of competition among villages and individuals over the meager resources like handouts, contracts, and small jobs that Tullow has been offering. In addition, cattle rustling between the Turkana and the neighboring tribe Pokot, has drastically intensified due to unclear territorial borders. Lastly, the struggle for access and control over the resources of Turkana has ignited existing unresolved conflicts between the Turkana local politicians and the National government of Kenya. Thus, the oil, which quickly since its inception has been mystified and idolatrized, has fueled the longings and visions of both county and national politicians. In the last years, the Kenyan Government has been preparing to enter the global economy as an oil-producing nation, by drafting legislations, developing national oil and gas expertise, planning enormous infrastructural schemes like the LAPSET corridor. However, Turkana is one of the most marginalized regions in Kenya, where roads, schools, health clinics and jobs are missing and where periodic droughts and cattle rustling make especially the pastoralists more vulnerable and poor. In Turkana much is at stake with the discovery of the oil. However, the controversies surrounding the oil discovery are not only about the sharing of oil revenues, but mostly about political power. During the 2017 elections, both Kenyatta's and Raila's party, the latter with the support of the County government of Turkana, tapped heavily on utopic visions of oil development as central theme in their political campaign. Whilst at the center, the national politicians wanted to feed the dreams of Vision 2030 with the most promising of Kenya's developmental strategies, the current Early Oil Pilot Scheme (EOPS), at the margins, oil is shaping a nascent Turkana utopia.

Marianna Betti has a BA in anthropology from CUNY, a MA in Archaeology from UCLA and a Master degree in Anthropology of Development from the University of Bergen, Norway. Since August 2015 Betti is a PhD candidate at the University of Bergen. For the PhD degree, she has conducted fieldwork in Turkana, Northern Kenya in 2016-2017. The tentative title of her PhD thesis is "Oil and the Logics of Expectation and Trust in Turkana". Her anthropological interests lie in anthropology of oil, the socio-political dilemmas surrounding oil exploitation and studies of nomadic pastoralist groups especially in East Africa.

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PATHOS VERSUS TRAGEDY: THE CULTURAL AND INTELLECTUAL USES OF OIL

Owen Logan

Owen Logan is a researcher and co-editor of *Contested Powers: Energy and Development in Latin America* (2015 Zed Books); *Flammable Societies: Studies on the Socio-economics of Oil and Gas* (2012 Pluto Press). Between 2010 and 2014 he co-edited the Glasgow based *Variant* magazine, devoted to cross-currents in culture. He co-curated *The Kings Peace: Realism and War* (Stills, Edinburgh 2014). As a photographer his publications include *Masquerade, Michael Jackson Alive in Nigeria*, with Uzor Maxim Uzoatu, (Altered Images/Stills 2014); *Bloodlines - vite allo specchio*, foreword by Tahar Ben Jelloun, (Cornerhouse 1994); *Al Maghrib*, with stories by Paul Bowles, (Polygon 1989).

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A FLAMMABLE SOCIETY? CLASS STRUGGLE AND NATIONALISM IN SCOTLAND SINCE THE PIPER ALPHA DISASTER

Terry Brotherstone

Flammable Societies: Studies in the Socio-economics of Oil and Gas (Pluto, 2012) derived from a Norwegian-Research-Council-financed international research project. Michael Watts thought it 'explode[d] the overly simple sense of good and bad oil governance' in different oil-producing countries' by paying attention to 'the intersection of petro-state power with territoriality and other forms of sovereignty.' My chapter was 'A Contribution to the Critique of Post-Imperial British History: North Sea Oil, Scottish Nationalism and Thatcherite Neoliberalism'. Since publication there have been two narrowly-decided British referenda, one keeping Scotland in the United Kingdom, the other threatening to take it out of the European Union despite a two-thirds Scottish majority for staying in. The Scottish nationalists' 1970s argument that oil wealth could underpin a Norwegian-style social policy has been challenged by economic realities and replaced by a not-fully-articulated vision of Scotland as a leading transition-to-renewables, environment-friendly, small European state. Meanwhile the safety-regime in the North Sea – supposedly addressed after the 1987 Piper Alpha disaster – has again been questioned. The paper will address the implications of these developments for an assessment of what part analysis of Scotland's experience of oil and gas extraction can play in revisiting the broader conclusions of *Flammable Societies*. (198)

Terry Brotherstone is honorary research fellow in history at the University of Aberdeen. He has published eclectically on aspects of British-Isles history and international socialism. Between 2000 and 2008, he directed the *Lives in the Oil Industry* oral archiving project, speaking – with interviewer Hugo Manson – at conferences in Latin America, Europe and Australia; and writing about it in *Variant* (2007), *Northern Scotland* (2008), *Twentieth-century British History* (2010), *Scottish Labour History Review* (2011) and *Workers of the World: International Journal of Strikes and Social Conflicts* (2013). A trade-union activist, he was president (2007-9) of the University and College Union Scotland.

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9F. NATIONS, SECURITY, ENERGY

205, 4 The Square

Speaker Organised Panel

ENERGY SECURITY AS CULTURAL IMAGINARY

Petra Dolata

In the wake of the 1973/74 energy crisis “energy security” became a pressing policy objective and popular concern in Western democracies. As governments and citizens tried to respond to the uncertainties of the 1970s – both related to energy and more generally to the Cold War, economic growth and environmental degradation – long-lasting energy narratives and imaginaries emerged that included themes of scarcity, dependence, and vulnerability. While most Western countries faced these same challenges, different societies arrived at different understandings and conceptualizations of what constituted energy insecurities. These differences still impact today’s discussions, while we also see redefinitions that aim to include human and environmental security as well as energy justice and literacy. My paper is based on a larger comparative and cross-national research project that investigates how such energy narratives emerged out of the complex interplay of national discussions of the energy crises as well as transnational consultations over policy responses. It is based on the belief that historicizing energy security helps us appreciate the concept’s embeddedness in culturally constructed, imaginative and dynamic narratives. It also helps us understand and deconstruct its almost exclusive focus on petroleum and allows us to speculate about more inclusive and just definitions of energy security.

Petra Dolata, Associate Professor, is Canada Research Chair (Tier II) in the History of Energy at the University of Calgary, Canada. She holds a Master’s degree in American Studies from Ruhr-Universität Bochum, where she also received her PhD in International Relations with a study on US-German (energy) relations in the late 1950s and early 1960s, which was published in 2006 with VS Verlag (*Die deutsche Kohlenkrise im nationalen und transatlantischen Kontext*). Before joining the University of Calgary in July 2014, she was Lecturer in International Politics at King’s College London, UK and Assistant Professor for North American History at Freie Universität Berlin, Germany. Petra is a Senior Research Associate with the European Centre for Energy and Resource Security (EUCERS), King’s College London, UK and co-convenor of *Energy In Society* (<http://energyinsociety.strikingly.com>), a working group at the Calgary Institute for the Humanities. Her current research focuses on European and North American energy history after 1945 as well as the history and politics of the Canadian and circumpolar Arctic. She has published on Canada’s natural resources, foreign and Arctic policies, and the concept of energy security.

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ONTOLOGICAL SECURITY AND THE NARRATION OF ENERGY IN THE EUROPEAN UNION

Vincent Della Sala

It is only in the last decade that concrete steps have been taken to develop a common and comprehensive approach to energy amongst the 28 (27) member states. It is no coincidence that this attempt to move beyond national borders to address energy questions has come at the same time that the narrative about energy has moved from one rooted in security to one about transition, alternative futures and sustainability. It argues that these narratives have sought to create a different kind of security from that centred on energy: a continued sense of self for the EU or ontological security.

The research will use the notion of ontological security to frame our understanding of how narratives of energy have changed in the EU, from stories about security to those of transition and sustainability. It is a post- and transnational political space, eschewing the modern constructions of state and nation in an attempt to find ways to solve common problems and issues. It raises the question of how a political community that does not

have thick forms of belonging looks to shaping a common understanding of energy. The research will explore what kinds of narratives about energy have been crafted in official discourse as well as counter-narratives that have contested stories of security with those of transition.

Vincent Della Sala is professor of political science in the Department of Sociology and Social Research at the University of Trento (Italy) and adjunct professor at the Bologna Center of SAIS Europe of the Johns Hopkins University. His work looks at the role of narratives in the construction of shared meaning in political life and how they may generate ontological security.

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“WE BECOME RESILIENT AS A NATION”: INTIMATIONS OF SECURITY, ECONOMY, AND ECOLOGY IN STEVE BANNON’S BIOSPHERE

Thomas Patrick Pringle

In September 2017, President-elect Donald Trump swapped out the term “climate change” for “resilience” as the policy focus for the Department of Homeland Security and the Federal Emergency Management Agency. As Melinda Cooper has articulated, ‘resilience’ is a term that counterintuitively spans the interests of neoconservative national security, neoliberal disaster capitalism, and progressive ecological theory. The special translation between economy and ecology offered by resilience is historically grounded in the cybernetic sciences, specifically in Friedrich Hayek’s emphasis on market emergence and C.S. Holling’s complexity modelling of how ecosystems maintain coherence despite turbulent conditions.

In this paper, I locate resilience-thinking in the financial and neoconservative imagination exemplified by former Presidential Advisor Steve Bannon’s administration of the Biosphere 2 project in 1995, when he learned how: “to measure how quickly commercially harvested trees would grow in a carbon dioxide-rich atmosphere” (Niiler, 2016). While Bannon’s pilot-plant for capitalizing on the conditions consistent with climate change offers one cynical and extreme translation from ecology to economy, it helps clarify the direction for political critique toward an administration adopting resilience scenario planning that include proposals for border walls with solar panels, the addition of Alaskan oil drilling in the Tax Cuts and Jobs Act (2017), tax cuts as hurricane relief in Puerto Rico, or petrochemical futures wherein less ice means more drilling.

Thomas Patrick Pringle holds both a Brown Presidential and SSHRC Doctoral Fellowship as a PhD candidate with the department of Modern Culture and Media at Brown University. He is a graduate affiliate with the Institute at Brown for Environment and Society and has held fellowships with the SenseLab Montréal and the Digital Cultures Research Lab at Leuphana University. Thomas has published work on the entangled history of photography and radiation in *NECSUS: European Journal of Media Studies* and on new documentary politics in *The Journal of Film and Video*.

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9G. RELIGION AND HYDROCARBONS: PERSPECTIVES FROM NORWAY, THE UNITED STATES, AND BEYOND

205, 5 University

Session Organiser: *Evan Berry*

In our era of ecological devastation, the environmental humanities are flourishing. Within this domain of academic inquiry, however, there remains a need for thoughtful accounts of the place of religion as an enterprise tightly interwoven with human ecologies. This holds true for the energy humanities, where the interpenetration of religious traditions and modern energy systems lays right before our eyes, but, perhaps given the slippery interface between oil and culture, it can be difficult to fully appreciate these relations. The politics of fossil fuel production are shot through with religion, a fact readily evident in the oil fueled rivalry between Shia and Sunni nations, the uncanny correspondence between pipelines and state-sanctioned violence against religious minorities in places like Myanmar and Turkey, or the novel collaboration of Christian clergy with Indigenous-led struggles against extraction projects. Curious about such dynamics, the proposed panel brings together four papers that examine the relationships between religion and fossil fuels, scrutinizing the actors, ideas, and places where hydrocarbons and religions intermingle. These papers present a geographically diverse set of cases that locate religion as a critical source of social norms, which sometimes serves to legitimate hydrocarbon extraction and other times suggests pathways toward more sustainable futures. The four presenters operate from different methodological perspectives, working in loose coordination to articulate the local specificities with which the religious dimensions of petrocultures are rendered.

ANOINTED WITH OIL: NORWAY BETWEEN PETROMANIA AND SUSTAINABILITY

Marion Grau

Norway's signing of the Paris Agreement was hailed at home as a victory. At the same time, the Norwegian government continued to roll out a new round of petroleum concessions for the Barents Sea. This paradoxical approach of the oil-rich nation Norway, a leader in green technology but at the same unapologetically pushing unprofitable and dangerous searches for oil in the Far North confounds an increasing number of the Norwegian public. Artists, writers, religious groups, scholars of law and environmental activists have formulated a discourse of resistance against this denialist approach to climate change. In 2017, a coalition of NGOs sued the Norwegian state about a paragraph in the Norwegian constitution that calls on the government to ensure a livable environment for future generations. Norway can serve as a case study of how difficult it is even in a functional democracy with enough resources to actually move towards a post-Petroleum future. During the *Klimasøksmål Arktis*, many of these narratives were activated in public discourse both nationally and internationally. This paper maps some of these imaginaries as they have manifested during this lawsuit. One imaginary of petroculture is that of oil functions as a type of sacrament that anoints the communities it connects, moves, and empowers. This sacrament has become seemingly indispensable and life without this sacramental system unimaginable. What sources for an imaginary after petroleum can be wrought from this particular petroculture?

Marion Grau is Professor of Systematic Theology and Missiology at MF Norwegian School of Theology. Her research has focused on questions of salvation, liberation, and transformation in economic structures, missionary movements, and postcolonial hermeneutics. Her current research projects include a study of pilgrimage and identity reconstruction in contemporary Norway and an exploration of petroleum culture, climate change and theology in the context of Northern and Arctic landscapes. She is the author of several books, notably *Rethinking Mission in the Postcolony: Salvation, Society, and Subversion* (Continuum 2011).

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RELIGION, POLITICS AND ECONOMY IN PETRO-NORWAY; A THEORETICAL APPROACH

Hans Geir Aasmundsen

Norway first started drilling for oil and gas in the late 1960s. Since then the Norwegian economy has grown steadily, with revenue from the petroleum industry as the financial basis for its modern welfare-state. At the same time, one may argue, what has been created is a petroculture of religious proportion where the economy has gained a holy status, beyond the reach of criticism and discussion. Only sporadically does the industry as such become the topic of debate in mainstream media or in political circles. The environmental cost of Norwegian economic success and political stability stand out in stark contrast to the narrative of nature-loving Norwegians, people of the North, who holds the mountain and the sea as sacred, invested with spiritual properties of belonging and renewal, and at the same time pumping fossil fuels in large quantities, contributing to jeopardizing that same nature. How can such narratives the same culture and people coexist? And why is it so hard to make nature-loving Norwegians environmental-friendly? This presentation seeks the explanation in a paradoxical culture of parallel narratives fueled by tradition and religion and given space and place by modern differentiation of politics, economy and religion.

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