

Session Block 1

8:30am-10:10am

1. Racing Nature, De-naturing Race: Terrains of Power and Production

Room 105

Organizers: Julie Santella (University of Minnesota)
Robin Wright (University of Minnesota)
Keavy McFadden (University of Minnesota)

Chair: Julie Santella (University of Minnesota)

Robin Wright (University of Minnesota)

“This statement may be read as an admission!”: Conservation, Commodification, and Contested Environments in the American West

Conflicts in the 1970s and 1980s over resource extraction and environmental protection in the American West are well-known and well-rehearsed. Yet focusing on the public tactics of litigation or logging sabotage ignores how access and privilege were negotiated privately by public land managers and users. By centering the contest as one between environmental conservation or commodification, this narrative erases the how these claims occur on already-contested indigenous land. Drawing on archival research on the Oregon, Washington, and Idaho offices of the Bureau of Land Management, I trace how the shifting management of public lands in the 1960s and 1970s reconfigured the distribution of power between ranchers and the federal government. I argue that the struggle by ranchers to maintain privileged access to public lands and public officials' efforts to adapt to new stakeholder management practices served to re-produce the erosion and erasure of native presence and sovereignty in the region.

Nora Sylvander (The Ohio State University)

“They don't care about the environment”—constructing ethnic and spatial difference through environmental conservation discourses

Throughout Latin America's resource-rich frontiers, conflicts between indigenous peoples and non-indigenous “mestizo” migrants seem to be intensifying. Mestizo peasants are typically blamed for these conflicts, and their migration to indigenous territories is framed not only as a violation of indigenous territorial rights, but also as an environmental conservation problem. Thus, their removal from indigenous territories – saneamiento – has gained ground, a seemingly essential means to protect vulnerable people and environments alike.

Based on a multi-method ethnographic research in Nicaragua and drawing on literatures in political ecology and cultural politics, this paper highlights the role that environmental conservation discourses have played in establishing the racialized differentiation and spatial legitimacy (who counts where) on which saneamiento logics rest. I look especially at Nicaragua's Bosawas Biosphere Reserve, where indigenous territories coincide with protected areas. There, territorial arbitration has for long been done in the service for conservation, and saneamiento has been incorporated into many large-scale conservation initiatives. I focus particularly on the perspectives of mestizo peasants, which have received little attention to date.

I find that conservation discourses fundamentally shape spatial legitimacy and racialize local stakeholders by attributing certain environmental behaviors to ethnicity. From mestizo peasants' perspective this means that the discourses underpinning saneamiento gloss over important differences in power and environmental behavior within the mestizo category. These discourses also fail to acknowledge broader political-economic drivers of environmental devastation. Moreover, by establishing “indigenous” as “local” and “mestizos” as “migrants”, conservation discourses obscure the fact that many mestizos originate from the areas where they are now portrayed as unsustainable outsiders.

Arif Hayat Nairang (University of Minnesota)

'Difficult' Pollutant; an Uncertain Ontology constituting Vulnerability

The current tension within the 'ontological turn' is the lack of a way to think about how power inflects ontology or ontologies. Ontology either becomes a new means to argue in favour of identity politics (Candea, 2014) or avoids larger political questions exposed by the relations of capital as the attempts to think through the ontological turn are restricted by notions of context and place. Cadena (2015) suggests that there is a disjunct between "modern politics" and the thought emerging from ontological turn, as modern politics relies on facts and representation of reality "as it is out there" whereas an ontological perspective problematizes reality itself. Arguing within this tension of confronting the political and its incomprehensibility with respect to the ontological turn, this paper will try to argue that the political can be thought through the ontological not by returning to an 'a priori' understanding of the political but by its conceptualisation as a 'possibility' of the ceaseless process of individuation. Thus, rather than contemplating an ontology which escapes the contemporary formulations of capitalism, I think through the object of 'pollutant' as it moves inside and outside the court of law (National Green Tribunal at New Delhi, India). The pollutant also becomes the signifier of the post-colonial landscape of global capital and provokes us to think of the possibilities that emerge in the interaction of capital and its 'outside' In this regard, I am following up and taking ahead Povinelli's notion of 'desert' and the idea of 'ruin' (Tsing, 2015) which characterize the planetary impact of a globalized capitalism.

Isabelle Anguelovski (Universitat Autònoma de Barcelona)

The new green city as an urban ecological enclave? Recent patterns of exclusion, polarization, and invisibilization in New Orleans

Today, new parks, gardens, or greenbelts are promoted by public officials, planners, investors, and public health experts as a public goods with widespread benefits for all residents. Yet, this consensual view on urban greening interventions often omit the fact that new green infrastructure projects can be used as access spines for major investment and high-end development. In this context, we ask: Does the green city fulfill its vision for developing healthy and equitable places, bringing inclusive and far-reaching environmental, health, social, and economic benefits or does it produce new environmental inequalities and green mirages? Through case examples of diverse urban greening projects in cities with varied urban development trajectories and baseline environmental conditions (Barcelona, Medellin, and New Orleans), we argue that recent greening interventions have produced new patterns of socio-spatial polarization, segregation, invisibilization, and exclusion. Our research reveals that these interventions are put in place at the expenses of the most socially and racially marginalized urban groups (Black residents in New Orleans; immigrants from the Global South and migrants from other parts of Spain in Barcelona; and displaced indigenous people in Medellin), whose land and landscapes are grabbed through the creation of a "green gap" in property markets. In that sense, as green amenities become what we call GreenLULUs (Locally Unwanted Land Uses), vulnerable residents and community groups face a green space paradox, through which their right to place and to a green and healthy city become jeopardized – and thereby their long-term environmental justice demands obliterated. Thus, as private and public investors come together around urban green interventions in an increasingly globalized way to consolidate urban sustainability and redevelopment strategies, they push aside a deeper reflection on urban segregation, social hierarchies, racial inequalities, and green privilege.

Keavy McFadden (University of Minnesota)

Building a New Chicago: Exploring the Co-Production of Race and Nature through the 606, North Branch Framework, & 312 RiverRun

In the past five years, Chicago has witnessed unprecedented revitalization efforts under the umbrella banner of the "Building a New Chicago" initiative launched by Mayor Emanuel in 2012. The efforts represent the most comprehensive revitalization and redevelopment plan in Chicago's history. Using emblematic revitalization projects included in the initiative such as the 606 Bloomingdale trail, the 312 RiverRun, and the North Branch Framework as case studies, this paper asks: how do race and nature continue to shape urban development projects and the identification of spaces ripe for re-greening and re-development in Chicago? Drawing on urban political ecology and urban geography literatures, this paper puts forward an emerging research agenda that understands revitalization efforts in Chicago as an essential site for theorizing race, urban politics, and the production of nature more broadly.

2. The Political Ecology of Agricultural Innovation

Room 129

Organizers: Marcus Taylor (Queen's University)

Chair: Sarah Rotz (University of Guelph)

Discussant: Glenn Davis Stone (Washington University)

Jacqueline Ignatova (Appalachian State University)

Experts and entrepreneurs: From farming as a way of life to farming as a business

A key objective of international initiatives to promote agricultural modernization in Africa is not only to transform farming, but also farmers. Development planners pursue this transformation through the training, production and dissemination of knowledge about "good agricultural practices." This can take the form of demonstration farms within communities, videos promoting such practices in the local language with lead farmers cast as central characters, agricultural production schemes that link smallholder farmer "outgrowers" to capital-rich "nucleus farmers," as well as the expansion of Western-influenced educational exchanges and training events. These strategies are in line with the World Bank's "agriculture for development" agenda that promote entrepreneurship and private sector growth as the preferred solution to agricultural challenges. Drawing upon field research in Northern Ghana, I argue that such efforts to transform farming from a way of life to a business revolve around three processes: the commodification of seed and land, the commercialization of farming activity, and the professionalization of the farmer. The aim of these processes is to render messy practices of cultivation and land use legible, and to change perceptions of what it means to be a farmer. This paper highlights the connection between the promotion of entrepreneurship and the privileging of techno-scientific expertise in agricultural modernization programs that are central to "the new Green Revolution in Africa."

Marcus Taylor (Queen's University)

Hybrid Realities: The Fractures of Rice Intensification in South India

The production of high-yielding yet stress-tolerant rice varieties has become a holy grail for rice breeding programmes keen to respond to the projected impacts of climate change. The Gates Foundation has been at the forefront of co-ordinating institutional efforts, pulling together existing initiatives and launching new ones under the rubric of STRASA (Stress Tolerant Rice for African and South Asia). The kinds of seeds produced under this initiative, however, are typically hybrid varieties that are expensive, require significant external inputs to deliver maximum yields, and must be re-purchased annually. Given the social fractures of agricultural production in contemporary south India – with a considerable proportion of farmers owing marginal land with high levels of indebtedness – is STRASA really the kind of agricultural innovation that will have wide impact? One such drought resistant variety KRH-4 was produced in Karnataka, India, and trialled with farmers in 2012. Following up five years later, this paper examines the legacy of the introduction of KRH-4 in Mandya district, examining which farmers had adopted the hybrid, paying close attention to the class, caste and gender dimensions of adoption and disadoption.

Remy Bargout (International Development Research Centre)

Structural and Relational Vulnerability: The Political Ecology of New Rice for Africa

High yielding and 'climate-resilient' crops are increasingly being disseminated to African smallholders as part of a 'New Green Revolution'. An early example is the New Rice for Africa (NERICA), a high-yielding variety promoted heavily in Uganda's Western Bunyoro Kingdom during the 2000's. Today, NERICA seed is still being purchased and planted widely by Bunyoro smallholders. Despite NERICA's popularity among farmers, the benefits and risks associated with cultivating high-yielding rice are not distributed evenly across the value-chain, nor at the inter and intra-household level between poor farmers or men and women. Hetero-patriarchal structures and social relations – enactments of power – significantly shape Uganda's agrarian society. Power determines how productive resources of land, water, chemicals, seed, and credit are unfairly distributed, and dictates which households are positioned to benefit from biotechnologies like NERICA. A contextual perspective of vulnerability understands smallholder exposure and sensitivity in terms of poverty and disenfranchisement, and also understands hazards can be socio-political, internal, and relational. Relational vulnerabilities and hazards surrounding key stages that connect farmers to the rice value-chain, particularly seed purchasing and grain processing stages, contribute strongly to the unfair distribution of NERICA's risks and benefits, and an ultimately uneven hierarchy of surplus accumulation. This type of conclusion is uncomfortable for mainstream 'the solution is in the

seed' perspectives on agriculture and adaptation, as it implies that successful development pathways can be found branching out and away from the material seed, not within it.

3. Undergraduate Session I

Room 205

Organizers: University of Kentucky Political Ecology Working Group

Chair: UKPEWG

Julianna Dantzer (University of Kentucky)

Encouraging Community Participation in Pipeline Decisionmaking: Lessons Learned from Pipeline Resistance Movements in Kentucky

Katherine Lerner (James Madison University)

Power, Profit and Pipelines: A political ecological analysis of the Atlantic Coast Pipeline

Since its inception in 2014, the Atlantic Coast Pipeline (ACP) has been a controversial issue in U.S. politics. The 600-mile pipeline is proposed to begin in Harrison County, West Virginia, extend through Virginia, and end in Robeson County, North Carolina. Dominion Energy and other operators of the ACP plan to drill the Marcellus Formation, an expansive outcrop of shale, for natural gas extraction for energy use. This case study focuses on the discourse and media portrayal of the ACP to highlight risks and effects that have the potential to marginalize several communities such as the Lumbee Tribe in Robeson County. The placement of the ACP could have detrimental environmental consequences, incalculable externalities of scale, and socio-economic and socio-cultural impacts for the Lumbee Tribe, as well as for other communities at risk. I present plans for construction of the pipeline, including a close inspection of the official ACP map to provide a tangible representation of potentially affected sites as well as a discussion of what the map hides and/or does not include. I also provide an in-depth analysis of the language used to describe the ACP to highlight various rhetorical strategies and hidden agendas of ACP operators and investors. In doing so, I reveal the importance of establishing more definitive regulations for natural gas. This research intends to bring awareness to patterns of social and environmental injustices involved in the pursuit of energy resources.

Connor Peach, Erika Lopez-Durel, and James Bratton (University of the South: Sewanee)

The Cleanest Line: A Recreation Ecology Study of Rock-Climbing in Southern Appalachia

Matt Schneider (The Ohio State University)

Elephant Sovereignty? Transboundary Governance in the Okavango-Zambezi Basin

John Schengber (James Madison University)

Tangier's Neolithic Revolution: lifestyle dependency and change amidst Bay regulations and sinking islands

Tangier Island is a 1.2 square mile island located in the Chesapeake Bay with a population of about 700 people. The vast majority of families on the island make their livelihoods from the surrounding Bay by harvesting blue crabs or oysters. Recent legislative caps on the allowable harvest have left many in the fishing community short of their historical income - and Tangier presents few other income opportunities. This threatening of the 'watermen' lifestyle is compounded by severe land area loss on Tangier, which has lost 67% of its landmass since 1850. All of the above combine to produce a "woe-is-me" narrative of Tangier, commonly parroted by both locals and by state and national media. This paper builds on research conducted as part of Skinny Dipper magazine's Issue Two. Based on archival research and semi-structured interviews with employees of the Tangier Island Oyster Company (TIOC), founded in 2014 [???], this research project examines the relatively new phenomenon of oyster cultivation as representing a sort of Neolithic Aquaculture Revolution. From our perspective, TIOC is reversing the

narrative on Tangier and represents a new livelihood and income for participants. Not regulated by catch caps as wild oysters are, oyster cultivation allows fishermen to control input and output more predictably and can produce oysters with a certain aesthetic (deep, smooth shells) that are sold for higher prices. Oyster cultivation does not employ pesticides or antibiotics, and inhumane treatment is less of a concern for oysters than for mammals or birds. Oysters filter feed from the Bay waters and thus require no additional feed inputs. Oyster cultivation is not new to the Bay or beyond, but is new to Tangier and brings the potential for positive change and growth on an island that, for years, has only been told what it is losing.

4. From communities of practice to communities of praxis: Public political ecology, environmental justice, and critical engagement in an era of regressive environmental politics

Room 218

Organizers: Joel Correia (University of Arizona)
Tracey Osborne (University of Arizona)

Chair: Joel Correia and Tracey Osborne

Yonit Yogev (Independent researcher)

Diversity, equity and inclusion in the National Park Service: Narratives, counter-narratives and the importance of moving beyon

The National Park Service (NPS) has known for decades that its visitors and staff fail to represent the full range of the diversity of Americans. While the NPS has begun to address diversity, equity, inclusion and relevance, progress is painfully slow. Previous work has shown that structural racism is the reason why movement in this regard is lagging. Lack of equity and inclusion in the NPS (and by extension other public lands and environmental organizations) not only puts the future of public lands at risk due to changing demographics, but also constitutes environmental injustice.

Following the suggestions in the literature for more qualitative research in this area, I conducted in-depth, unstructured interviews using an interview guide or narrative story-telling with forty participants from the NPS, partner agencies, and people from communities of color, using Participatory Action Research methodology, guided by Critical Race Theory. Participants offered feedback about every aspect of the study at all stages of research and writing. The results revealed the critical importance of genuine collaboration and partnerships with communities of color, the need for fundamental changes in hiring practices and agency-wide diversity 'training,' the significance of and need for structured role modeling and mentorships, among several others, along with guidance for ways to overcome multiple barriers. The recommendations and stories revealed by this research will provide the NPS and other public land agencies with additional innovative ways to develop and implement policies and programs that meet the needs of an increasingly diverse population.

Gabe Schwartzman (Instituto Socioambiental)

Community Definition of Economic and Ecologic Relations in the Extractive Reserves of the Terra do Meio: Community of Praxis

The creation of three Extractive Reserves (Reservas Extrativistas – RESEX – sustainable use protected areas) in 2005 in the Terra do Meio region of the eastern Brazilian Amazon was a product of international, national and local socio-environmental activism. After gaining collective use and habitation rights in the face of violent expropriation, communities living in these RESEXs now grapple with auto-defining sustainable development - definitions of a 'good life' (politics of *bem viver*). The Instituto Socioambiental, a Brazilian NGO, since 2013 has organized participatory action research to define economic and territorial governance goals in these RESEXs and develop subsequent projects. This paper details the preliminary results of this participatory research and examines the evolving and continuing research processes - academic, practitioner and community conversations around community self-definition of relationships to markets, forests and urban space. The authors put these conversations in the political economic context of advancing lumber and agricultural frontiers (Villas Boas et al 2017), Brazilian federal incentives for land-grabbing and diminishing environmental regulation (Torres et al 2017), and expanding urbanization (Hecht et al 2015), investigating a moral economy of a singularly Amazonian peasantry (Rezende 2016). The socio-environmental activist research in the Terra do Meio is grounded in political ecology theory (Adams et al 2008). This presentation examines ways that the work in these RESEXs, therefore, may constitute public political ecology (Osborne 2017). Asking how researchers and communities might make up a community of praxis in the region, the presentation posits ways that such praxis advances autonomy in these forest communities.

Daniel Suarez (University of California, Berkeley)

Unmainstreaming Natural Capital in the Intergovernmental Platform on Biodiversity and Ecosystem Services

Established in 2012, the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) aspires to be an “IPCC for biodiversity,” tasked with synthesizing knowledge about global ecosystems to catalyze global action to better conserve those ecosystems. With over a hundred member states and a thousand experts now taking part in the process, IPBES represents the most prominent (and certainly the largest) institutional crystallization of more than two decades of transnational consensus-building around ecosystem services policy discourse. In this paper, I draw on organizational-ethnographic research conducted inside IPBES to explore Castree’s (2017) recent suppositions about actualizing a more “deeply radicalized” global change science. More specifically, I consider his admonition that critically-oriented environmental scholars forgo detached criticism and “get stuck in”—that we earnestly engage these scientific communities and try to turn their growing recognition of the momentous political-ecological implications predicted in their own findings toward the building of new solidarities and the pursuit of more “richly radical ends.” I explore these speculations empirically by analyzing a unique site where critical scholars actually tried to accomplish this: namely, inside IPBES. I highlight the presence of a handful of critically-oriented social scientists, humanities scholars, and heterodox scientists embedded in the process. There, I observed them trying to dislodge ecosystem services from its more epistemically and politically problematic “mainstream” tendencies and working to re-purpose IPBES itself toward the production of knowledges less bound to neoliberal logics and more amenable to envisioning radical alternatives. To my surprise (and often theirs), I saw them repeatedly succeeding at this task. As the profoundly radical implications predicted in the findings of global change scientists grows ever starker, I conclude—at least in relation to IPBES—that the radical theorizations offered by critical scholars represent not only appropriate but necessary and quite plausible parts of the dialogue. Even more intriguing is that the leadership of IPBES has increasingly come to agree.

Lee Frankel-Goldwater (University of Colorado, Boulder)

Bringing Together Political Ecology and the Learning Sciences, An Approach to Engaged Scholarship and Emancipatory Praxis

A growing movement within academia demands that scientific methods go beyond the study or extraction of knowledge, and instead influence and instigate change making process that directly address issues of social and environmental justice. This perspective is grounded in critical theory, which claims that no knowledge is truly objective knowledge, especially that which addresses the evolving human condition and our collective society. A conclusion is that scholars must act with this awareness, using the best tools of science to elicit the challenges and misplaced power dynamics inherent in coupled human and ecological systems. Political ecologists often convey this strong critical and activist orientation, and have a rich scientific toolset from which to draw, yet many scholars from within and without have criticized the ability of political ecology to influence the change processes its proponents so astutely identify. This begs the question, can the tools and methods of political ecology be augmented to address theoretical, policy, and social justice aims simultaneously? This paper offers a model for doing so, drawing on the learning and educational sciences, with a specific focus on participatory methods to augment political ecology’s existing theoretical and methodological core. Rather than survey numerous approaches, a single model is offered with particular use cases, to better support a rigorous argument for its potential, as well as to build an example that can support the development of further, related approaches to practicing political ecology.

Innisfree McKinnon (University of Wisconsin-Stout)

Practicing Public Political Ecology in the Rural Midwest

Practicing public political ecology in is a challenge in the best of circumstances. How do those of us working in the rural U.S., gripped by hegemonic visions of settler colonialism, engage with the public? This paper considers the challenges of building alliances with socioenvironmental justice movements while working in regions where such movements seem to be latent or non-existent. In this paper, I work to uncover a political ecology praxis that moves beyond the study of existing movements and discourses. In the rural U.S. significant areas are 95% or more white, dominant environmental discourses tend to privilege settler colonialism. While hopeful openings for socioenvironmental justice may coalesce around particular resource challenges, for example frack sand mining here in western Wisconsin (Pearson 2017), regressive populism is largely unchallenged in rural America. How can we, as engaged scholars change that? Though our engaged scholarship, we must be willing to open up discussions on new (or repressed) issues.

My approach so far has focused on two methods: teaching and mapping. Using a focus on wild rice restoration and treaty rights of the 11 Ojibwe Tribes within the ceded territories in the Upper Midwest, I examine possibilities for public political ecology praxis. I focus on how teaching (and supporting student research) and mapping potential restoration sites can create openings to discuss issues such as indigenous rights and subsistence uses of the landscape.

5. Contested and Uncertain Temporalities of Resource Extraction

Room 219

Organizers: Ashley Fent (UCLA)
Erik Kojola (University of Minnesota)

Chair: Ashley Fent

Kate Farley (Washington University in St. Louis)

Mining History: Appalachian Nostalgia and Imagining a Post-Coal Future

In central Appalachia, conventional wisdom supposes that positive sentiments toward the coal industry are central to Appalachian identity. The discourse of economic development in the region is often anchored by the assumption that the return of coal jobs is the only way to prosperity, despite the fact that demand for coal in the United States is unlikely to rise. I argue that this powerful sense of nostalgia for a prosperous coal-mining past is constantly reinforced through the way that Kentuckians and West Virginians learn about the coal industry. In schools, in the media, and in monuments that dot the landscape, there is a memorialization of the past that is at odds with the present state of the coal industry, which is characterized by high unemployment and environmental destruction. These sites do not merely reinforce a sense of positive nostalgia, they make it more difficult to imagine a future for Appalachia that no longer relies on fossil fuels and extractive industries. At the same time, nostalgia becomes a tool for activists who seek to construct an alternative Appalachian identity. Instead of turning to the coal mining past, their work invokes an imaginary of survival in a rugged, isolated landscape. Under this framework, transition to a post-coal economy can be achieved by establishing a regional economy based on practices like wild botanical foraging, agroforestry, and small-scale manufacturing while emphasizing “Appalachian values” such as self-reliance and individualism. In this paper, I consider the role of the dozens of small museums, exhibits, and memorials dedicated to coal miners and mining in producing and maintaining the notion that Appalachian identity is tied to the coal industry. I also examine the way that activists have taken up nostalgia as a tool that enables people to envision other possible futures for Appalachia.

Julie Santella (University of Minnesota)

“I’m here to remind you of your history”: The role of the prior in the politics of resource extraction in the Black Hills

From the late-nineteenth century gold rush which justified the breaking of significant treaties between the US government and the Lakota, Dakota, and Nakota peoples to mid-twentieth century uranium processing which polluted rivers significant to the Pine Ridge Indian Reservation, the case of the Black Hills in western South Dakota is instructive in exposing how settler colonial logics function through resource extraction. Thinking through extractive sector politics in the Black Hills, this paper considers how notions of precedence or what came prior are relevant to these twinned processes of resource extraction and settler colonialism in a number of ways. In the Black Hills, arguments in favor of mining or drilling are often justified based on projects that have already been approved, ignoring the colonial violence and environmental contamination which have attended such endeavors. Another invocation of precedence involves some white settlers describing Lakota peoples as only very recent occupants of the Black Hills or using Lakotas’ alleged movement into the area by force to justify the Euro-American invasion and subsequent resource extraction as, if not morally legitimate, then at least on par with how land changed hands prior to the 19th century. For Lakota communities and Lakota-led movements for environmental justice, however, the accumulated effects of resource extraction and colonial occupation are paramount, both in terms of articulations against existing and proposed extractive projects and in terms of lived experiences of contamination and dispossession. Ideas about precedence, then, are mobilized variously by differently positioned groups in the Black Hills in service of imagining very different futures. Drawing on literatures connecting temporality, settler colonialism, and resource extraction, this paper puts forth an emerging research agenda seeking to explore the relationships between recourse to the prior and future imaginaries.

Michael Simpson (University of British Columbia)

“The Hour of Development”: Temporalities of Extraction in the Alberta Tar Sands

In 1899, Charles Mair traveled through the Athabasca region on behalf of the government of Canada in hopes of signing treaties with the Indigenous communities of the area. Upon encountering the region's tar sands, Mair commented, "That this region is stored with a substance of great economic value is beyond all doubt, and, when the hour of development comes, it will, I believe, prove to be one of the wonders of Northern Canada." Thinking through this statement, this paper asks why it is that the "hour of development" has struck only relatively recently in the tar sands when this region had already been identified as a valuable site of resource extraction over a century ago? Why is it that the extractivist impulses of settler colonialism and global capital left the boreal forests and peat bogs of the Athabasca region relatively undisturbed now? And likewise, what explains the 1500% increase in investment in tar sands infrastructure in just 15 years between 1999 and 2014? Some have pointed to technological development as an explanation, arguing that the technology necessary to make extraction economical has been developed only recently. Others point to "peak oil," suggesting that as conventional oil reserves are increasingly depleted, unconventional fossil fuel sources such as the tar sands have now come online. However, in this paper, I argue that tar sands development can be explained by the temporal logic of extraction that is internal to processes of capitalist accumulation. I examine how circuits of capital investment in the Athabasca region produce landscapes at different temporal scales, transforming some into sites of extraction more immediately, while keeping others in a state of standing reserve. Moreover, I consider how resources such as the tar sands, held in this state of standing reserve awaiting future extraction, are mobilized by the settler colonial state to perform the additional work of fostering feelings of resource nationalism.

Erik Kojola (University of Minnesota)

Contested Metals: Science, Politics and Values in Decision-Making About Copper Mining

Accelerating demand for natural resources, innovative technologies and depletion of high-quality reserves, is contributing to new riskier forms and sites of extraction. These developments create conflicts around socio-ecological hazards and perceived trade-offs between economic growth and environmental protection. Proposed copper-nickel mines in Northeastern Minnesota are emblematic of the contested politics around environmental risks and resource use decision-making. I examine how class, race, place-based identities and scientific expertise inform how people make sense of environmental hazards and construct different visions for the future and of how society relates to nature. I investigate how stakeholders, including unions, mining companies, environmentalists, Native American tribes and local politicians, legitimize their positions, create competing truth claims and engage in environmental governance. How do groups legitimize their positions through scientific knowledge, expertise and place-based identities? I situate these discourses, actions and strategies within the particular socio-ecological histories of Northern Minnesota and broader relations of power and flows of capital and information in global capitalism. Through analysis of newspaper articles and organizational documents, interviews with key stakeholders, and observations of regulatory hearings, I find that copper-nickel mining is presented through a dominant discourse of technocracy, scientism and industrialism in which different stakeholders assert opposing facts that presumes rational and apolitical decision-making. The dominant technological discourse is complex as environmental and indigenous groups have used science to highlight risks from mining. Yet, the focus on science and technical issues can legitimize state authority and reinforce the privileged position of experts while ignoring more fundamental critiques.

Kelly Kay (UCLA)

"The Meek Shall Inherit the Earth, But Not It's Mineral Rights:" Risk, Extractive Materialities, and Subsurface Property in LA

While Los Angeles is often perceived to be a city built on the entertainment industry, it was actually the discovery of oil in the area in the late 1890s that both facilitated and financed much of its urban and economic expansion. Even into the present day, the Los Angeles Basin is the largest urban oil field in the United States, with 580,000 Angelinos living within a quarter mile of an active oil well. The risks and benefits of these wells are borne very differently across communities, as is the materiality of the extraction. This paper compares two active oil fields in Los Angeles County. The first, the Beverly Hills Oil Field, underlies one of the wealthiest communities in the United States, and much of the pumping that goes on is cleverly concealed. The second, the Inglewood Oil Field, is located beneath a number of majority African-American communities, including Baldwin Hills and Ladera Heights; in these areas, the wells are a visible and characteristic feature of the landscape. I argue that understanding why the material infrastructures of extraction vary so significantly across the city requires close attention to differential histories of subsurface and mineral rights. Through the case of oil, one sees how historical subsurface property dynamics play a role in perpetuating ongoing uneven geographies above ground.

6. Gender Mainstreaming and its Alternatives in Environmental Conservation and Rural Development

Room 225

Organizers: Brittany Cook (University of Kentucky)
Manon Lefevre (University of Kentucky)

Chair: Brittany Cook

Brittany Cook (University of Kentucky)

Beyond the check box: Women's strategies for organizing and producing rural goods

Although there is more attention to gender in the development field, it still often takes the form of a check-box for including women on a grant application. NGOs often try to find ways to incorporate women in order to secure grants. However, women-based projects also have the potential to have a large impact on rural spaces. This paper explores how gender is constructed, performed, and challenged within different business models and practices of rural women's organizations in Jordan. The proliferation of such projects and small businesses is highly visible in events such as the Jordanian Olive Festival. The festival tents are lined with tables of women's organization from all corners of Jordan, selling various goods, from handicrafts to soaps to spices and cheeses. This paper explores the different types of women's organizations and the ways in which participants gain income from their labor. I argue that the development and market logics undergirding these projects promote the commodification of rural lifeways for (often nostalgic) urban consumption. However, the degree to which donor money is involved highly affects how women organize and the new networks in which gender roles within the family are negotiated. Building a typology of different women's organizations allows us to examine the multiple ways in which these projects can be implemented and the repercussions of these decisions. This understanding is one way in which to move beyond women-as-a-check-box in rural development.

Manon Lefevre (University of Kentucky)

Gender and Blue Forests: Tracing colonial legacies of ethnic identity, climate change and mangrove conservation in Madagascar

It is critical to understand women's experiences of mangrove conservation in the Global South because mangroves are a crucial defense against climate change, and are also increasingly the targets of global climate change policies. The intervention of postcolonial feminist theory combined with feminist political ecology has the potential to bring forward women's seldom-heard experiences of climate change in these valuable ecosystems. While feminist political ecologists have questioned the gendered experiences of climate change, this scholarship does not always consider colonialism's hand in shaping women's complex subjectivities around climate change or the ways in which climate change policies reproduce colonial power relations and social divisions among women in the Global South. This essay explores how and why women living in Madagascar's largest mangrove—particularly under current mangrove reforestation efforts and emerging blue carbon climate change policies—are situated along axes of power in the mangrove; how gender is constructed in order to reproduce women as subservient to men and to reproduce certain women as subservient to others; and how climate change policies and mangrove conservation reproduce hegemonic power relations in the mangrove. I argue that there is a hierarchical ethnic social division among the women around mangrove conservation, which will undoubtedly impact future climate change policies. This division is likely rooted in a colonial legacy of economic, political and social re-ordering that lingers in the mangrove today. This work supports previous feminist political ecology scholarship focused on understanding women's complicated relationships to the environment and the gendered effects of ecological conservation and climate change policies, while challenging dominant conservation discourse around women as a monolithic group.

Julie Gorecki (University of California Berkeley)

The Capitalist Patriarchy and the Climate Crisis: Can Real Climate Justice Be Had without Gender Justice?

Climate change is wielding a gender bias. Indigenous women and women of the Global South in particular are bearing the disproportionate burdens of climate change. Such women have organized an emergent international contingent of "Women for Climate Justice," positioned at the forefront of the global climate justice movement. Also known as "climate women," they advocate that there can be "no climate justice without gender justice" (Gorecki 2014). My paper explores the struggles of global climate women to better understand how and why climate change so disproportionately burdens them by asking if climate justice can be had without gender justice? Specifically, I ask to what extent is genuine, sustainable climate justice dependent on gender just solutions?

Many ecological feminist scholars have long contended that nature cannot be liberated without liberating women. They've affirmed that capitalism's founding ideology of continuous growth—materialized as the infinite extraction of finite natural resources—has been necessitated by the coincident subordination of women, minorities, and nature (d'Eaubonne 1974; Merchant 1980; Gunn Allen 1986; Mies &

Shiva 1993; Plumwood 1993; Smith 2005; Anderson 2010). They reference this interdependent subordination as the “Capitalist Patriarchy—” a global “anti-woman” system founded on the exploitation of women’s power, bodies and labor (Merchant 1980; Mies 1998; Federici 2004).

This paper will explore the relationship between Capitalism and Patriarchy and how they are connected to the Climate Crisis, while also asking if a real and long lasting climate justice is possible without gender justice and vice versa.

Saachi Kuwayama (University of Michigan)

Gender, Violence, and Natural Disaster: The Case of Kashmir

Women experience structural and direct violence in a wide array of contexts, increasing their vulnerability to morbidity and mortality during natural disasters. This paper investigates the causal link between violence and vulnerability, as well as the effect of pre-existing tensions on post-disaster gendered violence. Deeper understanding of these connections is crucial to decreasing vulnerability of women – and other marginalized groups – in natural disaster settings. A review of literature on direct and structural violence against women, differential vulnerability and gendered responses to natural disasters, and post-disaster violence is conducted, and a critical gap in the literature is identified. The identified gap is addressed using a review of news articles and videos covering the experience of women in Kashmir. Results provide evidence for a causal link between violence and vulnerability, and show that post-disaster violence exacerbates pre-existing tensions. The paper concludes with suggestions for future exploration.

7. Seeing the Forest by Its Trees: Interdisciplinary Perspectives on Appalachian Forests

Room 229

Organizers: Jasper Waugh-Quasebarth (University of Kentucky)

Chair: Jasper Waugh-Quasebarth

Discussant: Kathryn Newfont (University of Kentucky)

Kenton Sena (University of Kentucky)

Stewarding Appalachia’s Forests: Challenges and threats, both former and future

The Appalachian region is home to some of the most biodiverse temperate forests in the world, with incredible ecological, economic, and social value. Yet, the region’s rich forests have long been threatened by poorly managed anthropogenic activity. A current and familiar disturbance across Appalachia is surface mining for coal, which has left a decades-long legacy of environmental impairment, generating large acreages of disturbed land with soils unsuitable for regeneration of native forest. Another important forest disturbance both historically and currently is species invasion, particularly of pests and pathogens, which has proven time and again to be incredibly destructive to Appalachian forests. For example, the invasion of chestnut blight (*Cryphonectria parasitica*) in the early part of the 20th century eliminated a dominant canopy species: American chestnut (*Castanea dentata*). Another important introduced pathogen distributed throughout the region is *Phytophthora cinnamomi*, which infects and kills oaks (*Quercus* spp.), chestnut, and shortleaf pine (*Pinus echinata*). Research at the University of Kentucky and elsewhere is ongoing to overcome both the legacy effects of surface mining and the current and future threats posed by invasive species. These research efforts will improve our ability to manage our rich forests, conserving their precious resources for future generations.

Thomas Maigret (University of Kentucky)

Persistent geophysical effects of mining threaten ridgetop biota of Appalachian forests

For over a century, coal mining has provided a source of wealth for Appalachia and eastern Kentucky in particular. However, surface coal mining has caused landscape-level habitat loss and fragmentation of the highly biodiverse mixed-mesophytic forests that cover the region’s

mountains and foothills. In addition, coal mining can permanently alter the rugged topography of Appalachia, which plays an important role in creating and maintaining the structure, composition, and diversity of the region's rich ecological communities. We use a variety of remote-sensing datasets to quantify and characterize the past and potential future topographic impacts of surface coal mining on the forest ecosystems of eastern Kentucky. To provide context, we examined the consequences of widespread topographic rearrangement for an imperiled and declining forest-associated predator, the timber rattlesnake (*Crotalus horridus*). Our model indicated that surface mining disproportionately impacts ridgetop and upper slope habitats, causing large reductions in the suitable overwintering habitat for *C. horridus*, and likely for other ridgetop-dependent biota as well. Land permitted for surface mining is also concentrated in high topographic positions, thus patterns of habitat loss are likely to remain concentrated in these ecosystems in the future. Furthermore, these permanent topographic shifts complicate the already difficult restoration of preexisting microhabitats, creating homogenized landscapes, threatening long-term ecosystem health, and charting a new course towards less diverse ecological communities.

Chris Barton (University of Kentucky)

Ecological Restoration on Cheat Mountain in the Monongahela National Forest, WV

Abstract: UK's Green Forests Work in partnership with the US Forest Service, Appalachian Regional Reforestation Initiative, West Virginia Division of Natural Resources, NRCS Plant Materials Center, and the Central Appalachian Spruce Restoration Initiative has implemented an ecological restoration project on 2,600 acres of mine impacted land in the Monongahela National Forest. The project is located on Cheat Mountain, which traverses the entire length of central Randolph County, WV. This high elevation site was historically a red spruce-northern hardwood ecosystem prior to logging and mining activities. The red spruce ecosystem of the Central Appalachians is characterized by exceptionally high biodiversity and is a priority for conservation and restoration. The project area (Mower Tract) was logged in the early 1900s and mined for coal in the 1970s. During reclamation the site was returned to approximate original contour and planted with non-native trees and grasses. Restoration activities were initiated in 2009 to reduce impacts from the mining and to restore the native red spruce ecosystem. A holistic suite of restoration strategies including soil decompaction, wetland restoration, woody debris loading, and planting of native trees and shrubs have been employed. To date, this partnership has performed restoration activities in over 500 acres of the watershed, created over 400 vernal pools/wetlands and planted about 250,000 native trees and shrubs. Restoration activities on the Mower Tract have also generated approximately \$1 million in revenue for the region. This is in large part due to job creation through the hiring of local contractors and the local purchase of restoration materials. Moreover, nearly 500 volunteers have participated in the work, empowering individuals to contribute to restoring the health and beauty of the local environment. Objectives achieved through implementation of this project will minimize impacts from past mining activities and help conserve and ensure long-term viability of the important plant and animal species associated with this high elevation forest and associated wetland communities.

Jasper Waugh-Quasebarth (University of Kentucky)

Locating Musical Tonewood in Extractive Timber Economies of Appalachian Forests

This paper explores the "meshworks" (Ingold 2011) of entangled human skill, wood craft products, and forest environments in the production of musical tonewood in the mountain forests of the Allegheny region of West Virginia. Enmeshed in global networks of the trade of timber, the hardwood and softwood forests of this region have materially undergirded the boom and bust economies of timber extraction for national and global markets, most devastatingly in the early 20th century. In this period the timber from red spruce (*Picea rubens*) was particularly sought after for the industrial production of musical instruments by famed makers such as the CF Martin Guitar Company and the Gibson Company. Today, makers of craft musical instruments (and inheritors of the aesthetic and musical legacy of the large producers of musical instruments) in West Virginia still valorize red spruce for its tonal and symbolic qualities. However, the dominating logics of extraction that govern how and when spruce and other potential tonewood logs will be used often leave logs too small or lacking in quality as materials for musical instruments. Nevertheless, tonewood producers still value local wood and work to find suitable logs for their craft work from unsustainable sources, namely, privately-owned clear-cut operations. They see their role as interrupting a global commodity chain and recasting timber as musical tonewood as a fundamental value change. Tonewood producers train loggers to look for specific types of trees, claiming that trees are released for a higher purpose in the craft of musical instruments, and turn waste for their enterprise into local gift economies of high quality timber. This paper locates tonewood producers in the meshworks between extractive and craft logics and processes and the ever-growing forests, sorting through logs and making sense of seemingly contradictory statements of conservation and exploitation of timber resources. Through ethnographic data collected in interviews and apprenticeship, I explore the environmental contestations and reconciliations enacted in meshworks of Appalachian forests and craft economies through the production of musical tonewood.

8. General Session: Governance and Environmental Justice

Room 209

Organizers: University of Kentucky Political Ecology Working Group

Chair: University of Kentucky Political Ecology Working Group

Eloise Reid (University of Michigan)

The Political Ecology of Climate Displacement Assessing the absence of transformative adaptation to climate change & displacement

In this paper, I will examine transformative adaptation to climate change in three rural Gulf Coast towns with 5,000 residents or less that exist outside of a federal hurricane levee system. There will be a historical analysis of three sites in Louisiana: Leeville, Isle de Jean Charles, and St. James, Louisiana. Transformative climate adaptation is a paradigmatic and systemic change that will deliberately also reduce emissions. These sites are relevant to this study because of their foundation on sinking land, increased threats from climate change, and relocation efforts. In my methods section I will examine the different amounts of coverage in primary and secondary sources. In this study, I evaluate 3 different approaches to climate adaptation; 1) transformative, 2) incremental and 3) informal. I also examine relocation as a form of adaptation in these locations. I used a social-ecological analysis of climate adaptation plans in neighboring cities that are within the levee system, and compared the implementation of the plan to towns with under 5,000 residents that do not have a formal climate adaptation plan in place. The results show that in the small towns that are outside of the levee system, relocation as adaptation and informal adaptation have taken place, yet the effects of climate change are severe, and these informal and incremental adaptation methods may not be able to prevent relocation before the land is lost.

Marlotte de Jong (University of Michigan)

When the well's dry, we know the worth of water: The implications of constructing water scarcity in Flint, Michigan

Flint, Michigan is synonymous with one of the worst environmental justice crises of the 21st century. Despite the infamy surrounding Flint's water crisis, scholars have proposed a variety of causal mechanisms, ranging from systemic racism to Michigan's history of negligent water policies. This paper seeks to demonstrate the usefulness of a political ecology approach in understanding the complex causal factors and their interactions within the context of Flint's water crisis. Specifically, I investigate the use of constructed notions of water scarcity by government officials to justify contentious water privatization schemes, which combined with water's unique materiality and the existing institutionalized racism in Flint to contribute to the production of the water crisis. In sum, a political ecology approach exposes the complex interactions latent in Flint's water crisis and elucidates critical factors to consider when exploring the causes of other environmental justice cases.

Shannon Bell (Virginia Tech)

Sustainability without Environmental Justice? Unintended Consequences and the Pursuit of a Post-Carbon World

Most policy decisions aimed at improving the environment have been conceived and implemented without attention to issues of environmental justice, creating what sociologist Julian Agyeman calls an "equity deficit" in the discourse and practice of environmental sustainability. This article presents the unintended consequences of the Clean Air Act (CAA) and its amendments as a cautionary tale for what can happen when environmental regulations are enacted without adequately considering environmental justice concerns. Although the CAA has been responsible for much good in the United States as a whole – including significant reductions in acid rain and health-harming pollutants – it has also brought significant harm to socially-vulnerable communities in Central Appalachia where coal is "washed" and in communities where the coal combustion waste from cleaner-burning power plants is stored. This article draws parallels between the unintended consequences of the CAA and the current scaling up of solar energy production throughout the United States, revealing the ways in which industries often take the cheapest route to compliance and how those decisions can harm marginalized communities. In the case of solar, it is clear that if mandatory recycling policies for solar panel e-waste are not legislated alongside policies aimed at increasing solar energy production, the United States will only deepen environmental health injustices in the Global South nations where most e-waste is dumped. This article ultimately argues that the unintended environmental justice consequences – and causalities – of policies aimed at improving environmental sustainability must be addressed if such policies are to be sustainable, beneficial, and just for all.

Laura German (University of Georgia)

Justice as Process: Land Governance in the Neoliberal Era

Land governance is at the forefront of the international development agenda – dominating development discourse and practice among bilateral development agencies, international financial institutions, UN agencies, and regional political and economic institutions. This paper draws on the scholarship of neoliberalism to situate current land rights discourse and practice, drawing parallels between the “trope of individual responsibility” central to neoliberal governmentality and the growing emphasis on land rights as a purely procedural matter. Evidence is drawn from two sources: an analysis of land rights discourses of organizations active in global land governance debates, and an exploration of the practice of large-scale land acquisitions in Mozambique. The former reveals a growing discursive trend towards “justice as process,” and the latter how process (embodied in the consulta, the key mechanism through which customary land rights are negotiated) systematically erodes rights which are otherwise enshrined in the law and actively defended through local empowerment initiatives. By revealing how the consultation process inculcates a sense of personal responsibility for land loss among displaced land users, it provides an example of new technologies of government that deepen commodification by actively fabricating actor subjectivities in the African context – something that scholars of neoliberalism have struggled to find (Hilgers 2012). The neoliberal lens on land rights also helps explain how customary land rights may be simultaneously protected by law, actively defended in discourse and practice, and ultimately eroded through processes guided by seemingly democratic principles.

Session Block 2

10:30am- 12:10pm

9. Rethinking Approaches to Empowerment in Development

Room 105

Organizers: Kaitlyn Spangler (Virginia Tech)
Daniel Sumner (Virginia Tech)

Chair: Daniel Sumner

Daniel Sumner (Virginia Tech)

Indicators, Indices, & Frameworks: A Critical Assessment of Women's Empowerment and Gender Mainstreaming in Global Development

Increasingly, global development practitioners, partners, and funders are promoting the need for numerical data to more appropriately assess and respond to the size and scope of social, economic, and environmental challenges. This application of quantitative indicators and data-driven development extends to efforts promoting women's empowerment and gender equality. Dominant approaches to gender and development narrow definitions of empowerment to fit within economic development objectives; these objectives limit empowerment to quantifiable material outcomes, such as improved access to micro-loans, agricultural inputs, land, and other tangible resources. Critical practitioner and academic perspectives argue that these limitations depoliticize empowerment, reducing its critical edge and radical feminist roots. In this paper, we draw upon these critiques and contextualize them within our research supporting USAID-funded agricultural research-for-development programs. We hope to expand current approaches through feminist political ecology, mixed-methods, and participatory research to capture the place-based complexities, intergenerational variation, and nuanced meanings of empowerment. While offering an introduction to the ongoing dialogue surrounding evaluation, empowerment, and gender equality in the context of development, we intend this paper to not only prompt further critiques but also offer critical strategies to move forward. We aim to deepen the conceptualization of empowerment and incorporate the intricate, contextual, and contested negotiations of power into development policy and practice.

Deepti Chatti (Yale University)

Changing Heart(h)s and Minds: A critical look at gender empowerment through 'clean' cooking energy access

Efforts to provide 'modern' and 'improved' energy access under the Sustainable Development Goals are animated by the desire to empower women by providing them certain types of energy technologies and fuels. Discourses to 'empower' women are powerful motivators in development efforts – whether used by international aid organizations, national governments, or NGOs. However, in the context of the SDG related to energy, gender 'empowerment' takes on an apolitical meaning associated with the adoption and use of certain kinds of energy technologies. In May 2016, India launched an ambitious energy program to dramatically expand access to 'modern' cooking energy services to its citizens by directing fossil fuel companies to provide Liquefied Petroleum Gas (LPG) to hitherto unconnected families. This program, called the Pradhan Mantri Ujjwala Yojana, provided 20 million new Liquefied Petroleum Gas (LPG) connections in its first year, and is widely hailed as a success within and outside India. A big driver of this program was a desire to give 'respect' to rural Indian women, to empower them, and to improve their lives. Gendered social transformation is also integral to the motivations of actors like the Global Alliance for Clean Cookstoves (GACC), who support organizations promoting improved biomass cookstoves. But how do these development imaginations unfold on the ground? I examine what access to 'modern' cooking energy services looks like to rural families in India as they go about their everyday lives. Drawing on ethnographic fieldwork in India conducted since 2013, I pay close attention to what individual and family aspirations for a good life look like, and how these aspirations relate to energy services. I examine if and how new energy technologies and fuels change people's lives, and I analyze what constellation of other life changes are imbricated in energy decisions.

Isaac Rivera (University of Colorado Denver)

Cookstoves, Empowerment, and the Economic subject: Who has Climate Responsibility?

The UN Sustainable development goals (SDG's) have made addressing the vulnerabilities of women to climate change a top concern. To fix such vulnerabilities, governmental and nongovernmental organizations have partnered with private finance to facilitate reducing the vulnerability of women on the front lines of climate change. Using a case study analysis of two rural villages in Southern India, we examine the role that carbon credits play in funding the clean cookstove sector. More specifically, we examine how clean cookstove regimes of sustainable development materialize in practice, and ask if such regimes produce their intended results of facilitating not only a healthy smoke free home and increased women's empowerment, but also in the mitigation of greenhouse gases. In one core question we asked, "Does your old (traditional) cookstove contribute to climate change?" Our results suggest a significant percentage of respondents that indicate that traditional ways of living are factors that foster global climate change. In this paper, we contend for a political ecology of climate responsibility that takes into question the formation of empowered and climate mitigating female subjects in the global South. This case reveals global North, and global South flows of carbon finance leading to economic subject making in the name of empowerment, reduced vulnerabilities, and climate mitigation. Moreover, this study animates and calls into question the uneven geography of climate responsibility it appears to produce and reinforce.

Putu Apriliani (Virginia Tech)

Women Empowerment and The Microfinance Dilemma in Bali: What Does Control Over Credit Entail?

Women's empowerment remains a major development policy goal, both as an end in itself and as a means to achieving other development goals. It is usually associated with improving the quality of life of families, as well as communities. Microfinance in particular has been argued, although never without controversy, to be a tool to improve women's participation in economic life across all sectors by simply expanding their access to finance. Research studies on microfinance performance also show that women borrowers have higher rates of repayment and are more likely to use savings for family-oriented purposes. Nevertheless, critics also claim that giving women control and property rights in exchange for using loans productively may be more important than simply expanding women's access to small-scale loans. Drawing upon participant observations and in-depth interviews conducted in several villages in Bali, Indonesia, this presentation discusses the extent to which gender relations, in the household and community, affect spousal control over credit usage. It also explores how gender norms and expectations affect spousal control over credit and how women gain control. Preliminary findings suggest that gender disproportionately assigns women responsibility over repayment of loans but inhibits corresponding control over loan usage.

10. Writing Effective Proposals for the National Science Foundation (NSF)

Room 119

Antoinette WinklerPrins (National Science Foundation)

This outreach session is intended for graduate students and faculty members who engage in geographic, anthropological, or other social science research and who wish to learn how to prepare effective proposals for NSF. A Program Director from the Geography and Spatial Sciences (GSS) Program at the National Science Foundation (NSF) will discuss research grant opportunities at NSF, and will highlight ways to improve the quality and competitiveness of a proposal. She will also discuss the review process, including the intellectual merit and broader impacts review criteria. Time for Q&A will be provided.

2. The Political Ecology of Agricultural Innovation (Session II)

Room 129

Organizers: Marcus Taylor (Queen's University)

Chair: Marcus Taylor

Discussant: Marcus Taylor

Andrew Flachs (Purdue University)

Growing Pains: Farmer Fees and Agricultural Consultation in Telangana, India

For several years, the E-Sagu consultancy program reached thousands of farmers in Telangana, India, and won numerous accolades for bridging urban technological development with rural needs. Yet when the organization attempted to scale up from a grant-funded academic project to a commercial consultancy, the vast majority of farmers left the program and only a spinoff project aimed at absentee fruit farmers achieved commercial success. This development shocked project managers, who had come to see their rural empowerment program as an inevitable success and a necessary improvement on local agricultural decision-making. Like many small farmers described in innovation literature, E-Sagu participants used social emulation to reduce uncertainty in their agricultural management and mediated scientific expertise through existing social hierarchies.

Sarah Rotz (University of Guelph)

Drawing Lines in the Cornfield: An analysis of discourse and identity relations across agri-food networks in Canada

This paper analyses discourse and identity relations within so-called 'conventional' agri-food networks as well as how the conventional sphere perceives, constructs and responds to alternative food movements in Canada. The paper is structured around three primary research questions: 1) How are conventional actors understanding conditions, changes, and challenges within conventional networks? 2) How do conventional actors apply this understanding in advancing conventional interests and discourses, and defending conventional networks? 3) How do conventional actors and discourse construct AFMs? For this research, I draw from survey, focus group, and in-depth interview data alongside text analysis from online sources. I elucidate the interests and motivations behind the identities, stories and messages emerging from the conventional sphere. I conclude that relationship building and communication between diverse agri-food actors may help to expand the range of agricultural knowledge, philosophies and solutions available to farmers, especially those whom are currently quite divided.

Hanson Nyantakyi-Frimpong (University of Denver)

The paradox of seed banks, indigenous knowledge and in situ agrobiodiversity conservation under climate change in northern Ghana

Drawing upon a political ecology framework and five years of village-level ethnography (2012 to 2017), this paper examines the role of seed banks in food systems transformation and climate resilience in northern Ghana. Through in-depth interviews, participant observations, and Qualitative Geographic Information Systems (QGIS), I argue that there are deep contradictions in the manner in which seed banks are functioning in northern Ghana. Although framed as participatory, local northern Ghanaian farmers themselves are not deeply involved in seed bank governance. In addition, while often touted as avenues to save and exchange landrace varieties selected through farmer knowledge and experimentation, some seed banks rather promote hybrid varieties. I also demonstrate how the rough and tumble of village politics shape access to seeds among the most marginalized groups, including widows, poor men, and de facto female-headed households. In presenting these findings, my overarching goal is not to downplay the importance of seed banks. Rather, I wish to caution against the uncritical use of seed sovereignty, local knowledge, and participatory development as approaches towards climate adaptation and food systems transformation in Africa.

3. Undergraduate Session II

Room 205

Organizers: University of Kentucky Political Ecology Working Group

Chair: UKPEWG

Laura Issac (University of Kentucky)

*First Steps Towards Queen Conch (*Strombus gigas*) Restoration in the Bahamas*

Issac, Laura E1, Davis, Megan1, Bernhard, A. Van H2

1. Florida Atlantic University, Harbor Branch Oceanographic Institute, Ft. Pierce, Florida
2. Hummingbird Cay Foundation, Hummingbird Cay, Bahamas August 3, 2017

Abstract *Strombus gigas* (queen conch) is a marine gastropod that lives in the warm waters of southern Florida, the Caribbean and Bermuda. Due to the high demand for this conch, local fishermen have overfished the conch, leading to a steep decline in the population numbers in the past 30 years. In 1992, the queen conch was listed as a CITES II species (Conservation of International Trade of Endangered Species of wild fauna and flora) to help with the fisheries management. There is a moratorium on harvesting queen conch in American waters, but in the Bahamas and elsewhere in the Caribbean, locals continue to harvest the conch as it is a main food source and/or as a commercial fisheries species. The need for a larval hatchery for restoration of the conch was originated as a mission of Hummingbird Cay Foundation, and they partnered with Florida Atlantic University Harbor Branch Oceanographic Institute to develop this project. In 2016, a small experimental lab was built on Hummingbird Cay, Exuma, Bahamas, where this study was conducted in both the summers of 2016 and 2017. Because genetic variety of a restored population is a concern, the objective in 2017 was to determine if there is biological variation between 10 egg masses throughout the early life stages, which could provide an indication of genetic variation. The null hypothesis was that there will be no variation in the early life stages of queen conch from 10 egg masses. The objectives were to determine for each egg mass the following: 1) egg mass hatch rate, 2) veliger growth and development, and 3) metamorphic success. There was biological variation found between the different egg masses. Therefore, it is recommended that multiple egg masses should be collected to ensure genetic variation in populations that are restored from hatchery reared queen conch.

Marisa Lewis (James Madison University)

Hybrid Environmental Governance: A Case Study of the Galapagos Islands

It is more essential than ever before that we understand resource governance structures, particularly hybrid governance between independent nation states and international interest groups and organizations, in order to effectively manage and conserve ecosystems worldwide. Ecuador's Galapagos Islands are a prominent example of a hybrid environmental governance structure, since the islands are managed by a combination of national laws in Ecuador, such as the Special Law for The Galapagos, as well as NOGs such as the Charles Darwin Foundation. Additionally, there has been increasing interest in the Islands from international organizations such as UNESCO, ecotourism ventures, and scientists. This paper is a case study that considers the ecological and resource importance of the Islands, and provide a short history of human interactions and governance of the Islands. Finally, this paper explores the complexities of the hybrid governance structure on the Galapagos Islands. This paper argues that international interests in the Islands over the past two centuries has established a hybrid environmental governance structure. This has resulted in the paradox that, while protecting the ecological integrity of the Islands in recent times, it has resulted in the gradual degradation of the ecosystems in the Galapagos. Recent challenges related to this degradation include invasive species, a growing human population, and increased ecotourism traffic. It is important to further understand the interconnected nature of the hybrid environmental governance structure in the Galapagos Islands to better understand the complexities of the ecological degradation that has resulted in this area of conservation.

Quintin Petersen (James Madison University)

The Northend Greenway and the Path Forward: A Model for Fair and Sustainable Urban Development?

As global climate change has stoked a demand for "greener" sustainable development (SD), the rhetoric/and planning process for SD has been increasingly challenged by social justice activists. Many have highlighted how SD has predominantly benefited the affluent while neglecting

low-income communities and communities of color. This ongoing tension is examined within the context of Harrisonburg Virginia's "Northend Greenway," a 2.5 mile mixed-use path and stream rehabilitation project poised to connect a cluster of underserved neighborhoods to key areas of business, education, and recreation in the city. A key consideration from a critical geographical perspective is whether the Northend Greenway can serve as a model of inclusive sustainable development for other cities. Geographic information systems (GIS), census data, and ethnographies are used to identify communities in Harrisonburg that have been historically underserved. Community perspectives on the Northend Greenway were collected through surveys of identified neighborhoods bordering the route of the path, emphasizing marginalized communities such as the city's historically African American neighborhood and a mobile home community of migrant workers. My analysis visualizes that the Northend Greenway will improve connectivity and access to green space for these aforementioned underserved areas. Additionally, the planning process of the Northend Greenway was inclusive of community input but lacks foresight for unintended consequences, such as gentrification and displacement that could be mitigated with affordable housing programs. By creating a space for multilateral decision-making during the planning process of SD projects, distributive and procedural injustices can be avoided and, resultantly, prevent "uneven development."

Rhiannon English (James Madison University)

Analyzing the Effectiveness of the Conservation Restoration Enhancement Program (CREP) in Virginia's Shenandoah Valley

The Shenandoah Valley encompasses some of Virginia's most productive agricultural regions. While agriculture is fundamental to the local economy, common agricultural practices in the area are major causes of stream bank erosion and eutrophication in both freshwater and eventually saltwater ecologies. Polluted streams wending through the Shenandoah Valley connect to a more extensive system of watersheds that all drain into the Chesapeake Bay. Limiting the amount of nutrient and sediment loads that enter into streams surrounding local farms thus not only benefits local ecosystems but those downstream, too. Dedicated to improving water quality throughout the Chesapeake Bay watershed, the Conservation Reserve Enhancement Program (CREP) aids participating landowners in fencing out cattle and planting native vegetation to restore riparian buffers. The creation of riparian buffers helps impede pollutant runoff from pasture and croplands into streams and increases biodiversity. This study will contextualize local practices that have influenced non-point source pollution runoff and attempt to determine the effectiveness of the environmental governance impacting stream water quality. The implementation of this state and federal multi-year land re-allocation program can be considered effective when examined through biotic indices and landscape variables within a specific scale. However, that success is contingent on the particular temporal and spatial patterns of the contiguous landscape with which those delineated conservation boundaries are subjected to, particularly the degree of upstream development. Upstream land use characteristics coupled with external socioeconomic drivers influencing agricultural production tend to create boundaries and restrictions on riparian landowner efficacy. Recognizing the significant role that the political and socioeconomic disciplines play in conservation efforts holds potential to better navigate the mechanisms that incentivize involvement and upkeep of the CREP program by working to counterpoise outside geographic, political, and economic variables that create challenges in protecting both private landowner concerns and the biological needs of the environment.

4. From communities of practice to communities of praxis: Public political ecology, environmental justice, and critical engagement in an era of regressive environmental politics (Session II)

Room 218

Organizers: Joel Correia (University of Arizona)
Tracey Osborne (University of Arizona)

Chair: Joel Correia

Current political trends and regressive politics across the world are undermining the advances of environmental movements and threaten to exacerbate environmental injustices. Authoritarian populism, manifest in diverse ways, is driving many of these changes (Bridge 2013). This session responds to recent calls to investigate emancipatory political movements that challenge regressive environmental politics (see, e.g., Scoones et al. 2017; Castree 2014). Clearly, the current conjuncture presents exceptional socio-environmental concerns that require new political strategies, academic practices, and solidarities. We suggest that public political ecology is one vehicle to achieve this. While political ecology provides tools well suited to addressing the challenges of the current conjuncture (Peet, Robbins, Watts 2010), scholars have suggested that political ecology shift from 'communities of practice' (Robbins 2012) to 'communities of praxis' (Osborne 2017). Therefore, we understand public political ecology as the theoretically-informed practice of a diverse set of actors (which include an important role for

academics) who share environmental concerns, collaborate, and co-produce knowledge to guide ethical action for earth stewardship, social justice, and environmental sustainability (Osborne 2017). We seek theoretically rich and empirically grounded papers that debate the praxis of public political ecology by writing new geographies of hope based on ethical praxis (Jarosz 2004; Braun 2005). Ultimately, we hope to enliven debates about engaged critical environmental scholarship as a tool to support socio-environmental justice. We encourage papers that grapple with public or engaged political ecology in theory and practice through empirical case studies, theoretical interventions, and or engage with decolonizing and participatory action research methodologies. From communities of practice to communities of praxis will begin with a paper session and conclude with a panel discussion. The following questions inspire our call for papers and the sessions: -What are the 'politics of the possible' that an engaged public political ecology inspires or encourages? -In what ways can a public political ecology be used to support socio-environmental justice movements, broadly construed? -How does your work navigate the challenge of linking theory and practice and, more specifically, what is your approach to praxis within public political ecology? -What are the methodological and ethical considerations of doing engaged scholarship? References Braun, B. 2005. Writing geographies of hope. *Antipode*, DOI: 10.1111/j.0066-4812.2005.00530. Bridge, G. 2013. Resource geographies II: The resource-state nexus. *Progress in Human Geography*, DOI: 10.1177/0309132513493379. Castree, N. 2014. The Anthropocene and geography III: Future directions. *Geography Compass*, 8 no. 7: 464-76. Jarosz, L. 2004. Nourishing women: towards a feminist political ecology of community supported agriculture in the United States. *Gender, place, and culture*, 18 no. 3: 307-26. Osborne, T. 2017. Public political ecology: A community of praxis for earth stewardship. *Journal of Political Ecology*, 24: 843-60. Peet, R., Robbins, P., and Watts, M.J. (eds.). 2010. *Global political ecology*. London: Routledge. Robbins, P. 2012. *Political Ecology*, Second Edition. Malden: Wiley-Blackwell. Scoones, I., Edelman, M., Saturnino, M.B. Jr., Hall, R. Wolford, W., and White, B. 2017. Forum on authoritarian populism and the rural world: Emancipatory rural politics: confronting authoritarian populism. *The Journal of Peasant Studies*, DOI: 10.1080/03066150.2017.1339693.

Panelists:

Tracey Osborne (University of Arizona)

Ingrid Nelson (University of Vermont)

T. Garrett Graddy-Lovelace (American University)

Joe Bryan (University of Colorado- Boulder)

Rebecca Lave (Indiana University)

Farhana Sultana (Syracuse University)

5. Contested and Uncertain Temporalities of Resource Extraction (Session II)

Room 219

Organizers: Ashley Fent (UCLA)
Erik Kojola (University of Minnesota)

Chair: Erik Kojola

Ashley Fent (UCLA)

The Theft of Potentiality: Vernacular Understandings of Resource Extraction and the Future in Casamance, Senegal

"There's so much potentiality in Casamance," said a member of the regional separatist movement (Movement of Democratic Forces of Casamance) one rainy night, as he commented on a controversial mining proposal. "It's looting, theft." This paper uses this idea of a theft of resource potentiality as a window into broader vernacular discourses about resource extraction and temporality, focusing on stalled mining negotiations for a heavy mineral sands mine in Senegal's southern region. Based on fourteen months of ethnographic fieldwork, it raises such questions as: How can one "steal" an as-yet-unrealized possibility? How can a mining project that has yet to materialize have important socio-political effects in the present? In addressing these questions, this paper draws on literatures on resource materiality and the future. A considerable body of anthropological, sociological, and geographical work on operational mines has stressed the agency of the more-than-human world in disrupting and destabilizing attempts to extract resources; additionally, anthropologist James Smith posits a "temporal dispossession" of local residents and miners that occurs in some cases. However, as many mining projects take years to negotiate and realize,

some scholars have examined how governments anticipate and plan for the supposed eventuality of resource extraction. This paper draws on these bodies of work but turns attention to how communities, activists, and political groups live in the interregnum of negotiations, and how their views of the not-yet mine, the “colonial” state, and “vampire” multinationals highlight important intersections between the materiality of resources and the temporal implications of resource potentiality.

Julie Snorek (Clark University)

Militarization and extractivism in a landscape of terrorism: political geographies in Niger and Mali

The Sahel or ‘shore of the Sahara’ marks a geographical band moving from Senegal to Sudan. Its spatial nature has been constructed during the colonial period as a wasteland inhabited by a few nomadic groups, whose attitude towards the French was highly belligerent. The territory and its people were suppressed and the utility of the space was established only as its accessibility to European markets. In present times and also to access northern markets, migrants, people smugglers, drugs, and other goods follow these long-standing routes across the Sahel-Saharan region; however, in what appears to be a great coincidence, processes of extractivism and militarization are concurrently expanding across the Sahelo-Saharan region, particularly in Mali and Niger.

Foucault in his work on governmentality emphasizes that the state presents a political rationality, which in turn structures forms of intervention to the state-defined problem (Lemke 2001). This structuring of the problem plays out in the West African Sahel as a problem of terrorism within landscape rich with mineral and petroleum resources, which are framed as the key to the region’s development and peace. Stemming from more recent research about land grabs in the northern Sahel-Saharan region (Snorek et al. 2017), this research examines how a persistent discourse on the invalid nature of pastoral livelihoods coupled with rebellion and terrorist movements has opened opportunities for militarization and extraction. Entangled in this landscape and its transitions are patterns of migration from rural to urban areas, patterns of land degradation, human and natural forms of drought, and the imposition of market-based adaptation programs. Moreover, social movements, stemming from the strong desire of the indigenous people to develop and govern their own territory, have fragmented societies under a discourse of militarization and terrorism. This has been expressed most recently in the opening of an American drone base in Agadez. Stemming from theories of political ecology, extractivism, and biopolitics, the methodology focuses on multiple causalities related to the shifting local dynamics: an increasing military presence, securitization of development goals, shifting development policies, and a greater openness to foreign investment in mineral and petroleum assets. To do so, I take a participatory action research approach, including interviews with multiple political actors both in the diaspora and refugees communities.

Jennifer Lawrence (Virginia Tech)

Toxic Entanglements: Chemical Governance and Extraction in Assembly

Transparency is indispensable for environmental justice, enabling citizens not only to meaningfully engage in the environmental regulation of their communities, but also arming the public with knowledge about the toxic chemicals deployed in their communities so that they might advocate for policy change and regulation. 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). As such, the development of extreme energy draws into tension the right for citizens to know about health and environmental hazards versus the protection of fossil fuel companies by government (Cook, 2014). Under this regime of extraction, chemicals required for fracking, oil sands mining, and deepwater drilling are sheltered as proprietary intellectual property thereby disenfranchising citizens and marking serious threats not only to public and environmental health but also to justice and democracy. Drawing the rich scholarship of eco-governmentality (Luke, 1999) and biopower (Foucault, 2008) into conversation, this project addresses the problematic governance of toxic chemicals that accompany extreme extraction by highlighting citizen’s struggle for transparency about the toxic chemicals used for of unconventional oil development. First, I consider the conflicted governance of wastewater from hydrofracking and inquire into the ways in which the protection of trade secrets come into contestation with state responsibility to promote for the general welfare (Maule, et. al., 2013). Second, I illustrate the struggle for transparency around the use of 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 and public health hazards (Lawrence, 2015). Finally, I discuss the opacity of knowledge around the chemicals required for diluted bitumen, an oil sands product that must be thinned out from its viscous state with large quantities of liquid chemicals so that it is able to 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 excludes the lived experiences of citizens in relation to the effects of extraction. I argue that this creates a situation whereby the ruinous effects of oil production appear predetermined and uncontestable and demonstrate how this governmentality fails to acknowledge the toxic relationships between government and industry. I advocate for an understanding of chemical and environmental governance that concedes the systemic toxicity that has come to define the regulation of toxic chemicals – especially those required to sustain the fossil fuel energy complex. In final assessment, this chapter makes explicit the intertwined relationship between transparency, governance, and the struggle for environmental justice. In conclusion, I propose that it is more accurate to frame this toxic entanglement as an assemblage of extractionism, whereby the governance of extreme energy and

the chemicals necessary to sustain it might be understood as a metabolic complex in which resources, labor, capital, knowledge, health, and security are extracted in assembly.

Adrienne Kroepsch (Colorado School of Mines)

Groundwater Governmentalities and the Politics of The Century: Engaging with Denver and the Denver Basin Aquifer System

Groundwater is the most extracted resource in the world. Its use boomed worldwide in the latter part of the twentieth century, particularly to support agriculture and urbanization, and carries on apace (Wijnen et al., 2012). In areas that lack sufficient surface water, groundwater provides a “spatiotemporal fix” – allowing for growth that might otherwise be constrained and delaying a reckoning with surface water scarcity until an unknown future date (Bolin et al., 2008). Historically, many of the world’s cities tapped groundwater resources until they could support infrastructure projects that brought surface water from afar (Foster & Loucks, 2006). Today, surface water over-allocation, climate change, and the well-known ecological and fiscal impacts of large-scale surface water diversions make the answers to groundwater dependence less straightforward (McDonald 2014).

Here, I explore groundwater’s role as a spatiotemporal stopgap in the context of the Denver Basin Aquifer (DBA) system, which underlies Colorado’s Front Range and has supported the development of the drier reaches of the region’s rapidly growing (sub)urban corridor. In particular, I engage with lawmakers’ decision nearly 50 years ago to effectively set a 100-year life on the basin’s non-renewable bedrock aquifers via well permitting. As the Front Range nears the halfway mark on the DBA’s given lifetime, this mode of “groundwater governmentality” (Birkenholtz, 2015) begs several questions. How did historical decision-makers envision the 100-year future of the DBA, and does the future that has arrived thus far match their imaginings? What are the exit strategies for DBA groundwater dependence, and where might Coloradoans’ relationship to groundwater go from here? And what lessons about time and the nature of resource extraction might Front Range cities hold for the many cities worldwide that depend solely or extensively on subterranean water supplies (Margat & van der Gun, 2013)?

Hugh Deaner (University of Kentucky)

Geological formation, century-long R&D, two decade boom, millennial waste hazard, and activist action: mixing temporal horizons in Alberta’s petroleum-bearing sands

I present three summary cases drawn from the Alberta oil sands to highlight temporal aspects of this contested petro-extraction zone and its historical relations with North American petroleum geography. This begins with an overview of the oil mining industry: eighty years of dominion and provincial backed primary development of this geological petroleum reserve originating in the nineteenth century and peppered by entrepreneurial failures; 1970s industry toehold both hopeful due to high oil prices, and yet also leery of competition from US synthetic fuels; two decades of growth and boom; current status and future prospects amid US fracking emergence and carbon taxation. Temporal aspects of environmental impact become apparent in a case concerned with regulated impoundment of all waste tailings produced by oil sands mines, and plans for their long term disposition which entails millennial timeframes in this case. I end with a review of activist delaying tactics involving the Keystone XL pipeline (designed to transport Alberta oil sands production to Gulf of Mexico ports) to consider any potential role they played in what at this writing appears dwindling enthusiasm of its owner TransCanada Corporation to complete construction.

11. International Association for Environmental Philosophy Panel

Room 225

Organizers: Bob Sandmeyer (University of Kentucky)

Chair: Bob Sandmeyer

Keith Peterson (Colby College)

Political Ecology and Metascientific Stances

This paper entertains the possibility of a merger between philosophical and social scientific conceptions and approaches to political ecology. Philosophical and social scientific approaches agree that there are tight conceptual and empirical linkages between social hierarchies and environmental exploitation, and about the necessity of dehomogenizing the classes “human” and “nature.” It also appears that both engage in critical reflection about the relation of the sciences to environmentalism, although their considerations of this issue differ markedly, and seem to constitute an obstacle to further alliance. The paper engages with this issue of “metascientific stances”—tacit assumptions about the nature, practices, goals, and place of the sciences in society—and discusses three models that have been adopted by environmentalists. On the philosophical side, the “worldview clash” model became conventional among many environmental philosophers where an “ecological worldview” was contrasted with “the Modern scientific worldview”—the latter was taken to be an expression of Cartesian dualism, atomism, mechanism, and reductionist materialism—and indicted as one of the central causes of the ecological crisis (along with anthropocentrism and instrumentalization of nature). Science-driven environmentalism also embodies a specific metascientific stance. This popular understanding—embraced by practitioners, policymakers, and the public—relies on a conceptually bankrupt positivistic model of science that assumes a sharp boundary between observation and theory, an absolute distinction between subjective and objective constituents of knowledge, the unity of the sciences ideal, reductionist metaphysical materialism, and a gradualist model of scientific advance. In contrast to both, the paper argues that an account of social knowledge production that rejects the stereotypical rational-social dualism in accounts of the sciences, advocates pluralist discussion of the variety of conditions under which knowledge is produced, and provides better insight into potentials for intervention and generating social change, will better serve philosophical and social scientific political ecology.

Anne Portman (University of Georgia)

An Ecological Feminist Critique of Wendell Berry's Agrarianism

Academic feminist engagements with agrarianism tend to focus on the ways in which the material conditions of rural life perpetuate the oppression of women, and criticize views that would seem to romanticize agrarian life. While important, to me, these analyses overlook the ways in which Wendell Berry’s work, in particular, anticipated and advanced critical feminist insights. I read Berry’s *The Unsettling of America* as an articulation of what ecological feminist philosopher Val Plumwood calls the “problem of remoteness” – the spatial, epistemic, or consequential distance from the effects of one’s attitudes and/or behaviors. Like Plumwood, Berry’s agrarian response requires a rethinking of self as self-in- relationship. Berry also insists that exploitation relies on a false fragmentation between things that are inherently unified, interdependent, or co-constituting. However, Berry appeals to a normative cultural unity, and fails to seriously incorporate the politics of gender, race, and the history of settler-colonialism. While Berry’s views ought not be dismissed by feminists too hastily, unless American agrarianism is more attentive to disparities in power at the local level it will remain inadequate for connecting ecological concerns with questions of social justice.

Ian Werkheiser (University of Texas Rio Grande Valley)

Decolonizing “colonias”: Philosophy and Political Ecology in the US-Mexico Border

Along the border between the US and Mexico, there are some neighborhoods known as colonias. This term—which is used by NGOs, government institutions, as well as academic discourses—refers to communities which were built on unincorporated land, and as such have only limited access to public services such as streetlights, garbage pickup, utilities, emergency responders, and so on. Many private projects and public programs focus on improving the living conditions in colonias and eventually incorporating them into cities and towns. There is also a nascent conversation among some activist groups who work to help colonia residents about whether the term should be abandoned. This talk will examine the emerging debate about the use of the term. Bringing in resources from political ecology as well as philosophy has the potential to contribute useful analysis to this question. At the same time, the question of “colonias” brings up a host of issues relevant to

those two. Given this, it is surprising that colonias are so underexamined in academic discourse compared to similar issues such as so-called “food deserts.” This talk is an early step in a larger project to address this lacuna.

7. Seeing the Forest by Its Trees: Interdisciplinary Perspectives on Appalachian Forests (Session II)

Room 229

Organizers: Jasper Waugh-Quasebarth (University of Kentucky)

Chair: Jasper Waugh-Quasebarth

Discussant: Tammy Clemons (University of Kentucky)

Mary Hufford (University of California, Berkeley and LiKEN (Livelihoods Knowledge Exchange Network) Lexington, KY)

De-stigmatizing Appalachia’s Forest Commons: A Role for Environmental Humanities

“No ‘forest’ exists as an objectively prescribed environment. There exists only a forester-, hunter-, botanist-, walker-, nature-enthusiast-, wood-gatherer-, berry-picker- and a fairytale-forest in which Hansel and Gretel lost their way.” These words, penned in the 1950s by German sociologist and economist Werner Sombart, are rife with implication for interdisciplinary approaches to Appalachia’s mixed mesophytic forest. It is only over the past three decades that academic fields have begun grappling in earnest with those implications, through the rise of the environmental justice movement, the accreditation of transdisciplinary participatory action research models, and the emergence of the environmental humanities. Drawing on research with a citizen science forest monitoring project conducted in southern West Virginia through the 1990s, I describe three distinct forests anchored in the mixed mesophytic hardwood system of central Appalachia’s plateau region, also known as “the coalfields.” Each forest is discursively conjured as a distinctive ontologically and epistemologically consistent social imaginary. One is the forest of the corporate state, a biologically reduced but economically valuable forest monitored and evaluated in terms of board feet or quantities of biomass, tethered to global markets. A second is the forest of ecologists, a world-class biologically diverse system that sometimes goes by the nickname of the “Mother Forest.” A third is a vernacular forest that is tethered to specific, named localities throughout the region. In the case of my study, that locality is called “Coal River.” This forest is the most highly elaborated in terms of language, history, and use, and is thoroughly embedded in multi-species (including human) cycles of natality and mortality – circadian, annual, biographical, and historical. It persists through practices of commoning. A hybridized expression of pre-Columbian, settler, and industrial histories, this forest commons has yet to be recognized and brought into public conversation with the Mother forest and the forest of the corporate state. To the contrary, its identity has been systematically spoiled for centuries through the operations of what folklorists Amy Shuman and Diane Goldstein call “the stigmatized vernacular.” I explore in this paper some of the ways in which the environmental humanities can help to de-stigmatize the vernacular Appalachian forest, and to bring the three forests into public conversation.

Luke Manget (University of Tennessee-Chattanooga)

The Political Ecology of Root Digging in Nineteenth-Century Appalachia

Harvesting the forest commons has been an important social, cultural, and economic activity for generations of people living in the southern Appalachian region. This paper explores how the rise and decline of the botanical drug trade (the commercial trade in medicinal plants) in nineteenth-century Appalachia shaped relationships between human communities and the forest commons, as well as relationships between people.

Prior to the Civil War, the botanical drug trade was very limited to a small handful of plants, the most important of which was ginseng. Many of these plants were harvested by farm families as part of their seasonal subsistence patterns that relied on the forest as well as the farm. After the war, however, the trade blossomed into an economic force, and the social dynamics changed as well. Root digging became the domain of poor, landless mountaineers, who often had no other source of income. This led to the rapid depletion of ginseng and other lucrative medicinal plants and paved the way for the growth of ginseng cultivation, which altered the political ecology in favor of land owners.

Kathryn Newfont (University of Kentucky)

July Hazard (University of Washington)

Spitting in the River: a sci-fi poetics for the Appalachian forest

Remote cultural wasteland, sacrifice zone for coal extraction, degenerate region of former pioneer glory, twisted ground of xenophobia, addiction, and disease—easily figured as dystopic and even unsalvageable, the Appalachian forest is a crucial territory of queer relations. In particular, by providing a forum for the dissident and derelict undertakings of misfit, outcast, monstrous youth, the forest collaborates in forging of viable queer and trans selves. The authors are two displaced Appalachian trans queers, one a poet and professor from Southeastern Kentucky, the other a novelist and divinity student from East Tennessee. We explore the Appalachian forest where we grew up as an unstable uchronia/utopia of desperate necessity to young rural queers, a wild intimate world of diversely inhabited, haunted, and imagined terrain. Fishing spots might also be notorious rape spots, star-watching rocks double as makeshift animal sacrifice altars, and collapsing barns serve as sites for demon summonings and soul-selling. Forgotten graveyards and disused railroad trestles frame a space to escape and explore familial haunting and religious alienation. Where the Klan controls the town imaginaries and the church controls the household imaginaries, the woods can be the only place of refuge and solace for queer and trans kids. This affinity of sacrificeable children for the sacrificeable forest, disposable humans for disposable ecologies, undercuts the natural-unnatural dichotomy for queers. Our conversation considers a range of transgressive forest interactions, and taps/traces the aspirations, summonings, sacrifices, rumors, injuries, and succors of the queerly woodsy dispossessed. Jones's parsings of hundred-year-old ties of blood and spirit twine with Hazard's projections of 24th century human, ghost, and robot forest commons. We work to trace a haunted sci-fi poetics of transgressive relation for the Appalachian forest, a poetics that networks the disowned and rejected into a reconciliation ecology.

Tennessee Jones (Union Theological Seminary)

Spitting in the River: A trans sci-fi poetics for the Appalachian forest

Remote cultural wasteland, sacrifice zone for coal extraction, degenerate region of former pioneer glory, twisted ground of xenophobia, addiction, and disease—easily figured as dystopic and even unsalvageable, the Appalachian forest is a crucial territory of queer relations. In particular, by providing a forum for the dissident and derelict undertakings of misfit, outcast, monstrous youth, the forest collaborates in forging of viable queer and trans selves. The authors are two displaced Appalachian trans queers, one a poet and professor from Southeastern Kentucky, the other a novelist and divinity student from East Tennessee. We explore the Appalachian forest where we grew up as an unstable uchronia/utopia of desperate necessity to young rural queers, a wild intimate world of diversely inhabited, haunted, and imagined terrain. Fishing spots might also be notorious rape spots, star-watching rocks double as makeshift animal sacrifice altars, and collapsing barns serve as sites for demon summonings and soul-selling. Forgotten graveyards and disused railroad trestles frame a space to escape and explore familial haunting and religious alienation. Where the Klan controls the town imaginaries and the church controls the household imaginaries, the woods can be the only place of refuge and solace for queer and trans kids. This affinity of sacrificeable children for the sacrificeable forest, disposable humans for disposable ecologies, undercuts the natural-unnatural dichotomy for queers. Our conversation considers a range of transgressive forest interactions, and taps/traces the aspirations, summonings, sacrifices, rumors, injuries, and succors of the queerly woodsy dispossessed. Jones's parsings of hundred-year-old ties of blood and spirit twine with Hazard's projections of 24th century human, ghost, and robot forest commons. We work to trace a haunted sci-fi poetics of transgressive relation for the Appalachian forest, a poetics that networks the disowned and rejected into a reconciliation ecology.

12. Animal Studies and Multispecies Precarity: The Politics of Living and Dying Together

Room 209

Organizer: Phillip Drake (University of Kansas)

Chair: Phillip Drake

Kate McClellan (Mississippi State University)

Parallel Precarity: The Lives and Contested Values of Syrian Animal Refugees

In April, 2017, under the cover of armed bodyguards, a secret delegation of veterinarians, wildlife experts, and NGO staff travelled to the war-torn Syrian city of Aleppo to rescue thirteen abandoned animals from a local zoo. Lions, tigers, bears, and hyenas, along with two dogs – all verging on death – were removed from the zoo, treated by veterinarians in Turkey, and then resettled in Jordan. Referred to as Syrian ‘animal refugees’ by local and international press, the thirteen animals will spend the rest of their lives in a new wildlife park in northern Jordan, an hour’s drive from the famous al-Zaatari camp that houses nearly 100,000 Syrian refugees. Through the lens of this rescue mission, my paper examines the parallel precariousness of human and animal refugee life in Jordan. I explore how the tropes of risk, danger, violence, and rescue surrounding these animal refugees ultimately create recalibrated frameworks of human-animal value, both in Jordan and in the international aid community. I trace how the material conditions of the animals’ rescue – the time, resources, and risk that surrounded it – and the continued management of the animals’ care in Jordan result in public contestations over the relative worth of human and animal life and the moral politics of Western care. How do the rescue workers involved in this mission justify the risk to their own lives for the sake of thirteen animals? How do Syrian refugees point to this story as an emblem of the injustices and unevenness of Western aid in the Syrian crisis? Building on Tsing’s (2015) discussion of the transformative power of precarity – and the centrality of storytelling to such transformation – I suggest that this story provides a way to think through the conflicting models of worth, value, and care that surround the Syrian refugee crisis.

Phillip Drake (University of Kansas)

Parasites, Zoonoses, and the Politics of Precarity: Rabies and Tourism in Bali

Ubiquitous in our world, parasites are characterized by their “metabolic commitment” to their respective hosts, usually at some cost to the host. For the parasite, the host is merely a vector – a food source, means of transport, habitat, and/or substitute nanny – that makes life possible. In other words, exploitation is necessary to life in the world of parasites. This project examines expressions of parasitism in the Indonesian island of Bali, focusing on a recent rabies outbreak that has killed dozens of humans and thousands of dogs, and has led to nearly 500,000 dogs being killed in a government-run effort to control the disease. A biological parasite that destroys its hosts, rabies exposes both humans and dogs (among other mammals) to the threat of infection; however, this vulnerability is not felt equally. This paper explores the production and distribution of precarity among groups of people and dogs, noting the ways categories of ethnicity, nationality, species, and animality are mobilized to determine who is (and isn’t) entitled to safety. In the background of the rabies controversy is the ongoing development and expansion of the tourism industry, which not only puts pressure on health officials to control the spread of disease but also introduces social forms of parasitism via the exploitation of human and nonhuman resources on the island. By raising questions about the nature of exploitation in both biological and social contexts, this case study exposes and challenges manifestations of anthropocentrism in political and ethical deliberations that relate to disease management, prompting consideration of alternative multispecies alliances that more effectively promote health and safety.

Kristin Gupta (Rice University)

“We’re Queer, They’re Steer”: *Multispecies Encounters in the Gay Rodeo Circuit*

This paper sketches how queer life is managed through nonhuman animal pain and death within the International Gay Rodeo Association competition circuit. Founded in 1976 as a response to instances where competitors and viewers were turned away from rodeos due to their sexual orientation, the IGRA has grown from small charity events to a multinational system of chapters in the US and Canada that have been celebrated for their aim to provide safe spaces for all genders and sexual expressions. However, similar to its heteronormative counterpart, it is impossible to ignore that this rodeo community centers on an intense form of violence, where animals are often electrocuted to provoke dramatic reactions for the crowd and routinely die tortuous deaths. Events such as bull riding that place human bodies in close contact with nonhuman ones in brief “bouts” thus curiously function to enact violence in an environment where indictments of “acts against nature” or bestiality have long been thrown at LGBTQ people in the forms of pejoratives and anti-sodomy laws.

With particular attention paid towards this history, this study contrasts moments when gay rodeos resist the imposition of rigidly heterosexual cowboy mythologies with heavily orchestrated competitions that frame multispecies encounters as “man versus beast”. It preliminarily proposes an analytic of violent intimacies, wherein LGBTQ competitors appeal to hegemonic notions of being through violent control over nonhuman bodies, legitimizing both their separation from animals and belonging within communities that otherwise would view their sexuality as a threat. The IGRA and its members may only encompass a relatively small and spread out life world, but it sits at a unique intersection from which to analyze how certain animals’ lives and deaths are intimately intertwined with human social formations, and vice versa.

Karla Armbruster (Webster University)

The End of the Ark

In this time of climate change anxiety, it's hard to deny the profound appeal of the idea of the ark — a human-created refuge that can carry whatever is most precious through hard times and into the safety of some barely-imagined future. Practical manifestations of this logic include seed banks and conservation centers for animal species endangered by habitat loss and other threats. But the notion of the ark plays a powerful psychological role as well, potentially preventing us from the necessary work of grappling with the specter of unprecedented loss. In this essay, I explore the allure of the ark on not just a cultural but also a personal level, beginning with my life-long penchant for the story of Noah: for most of my life, it resonated with my own deep love for the world and the creatures who live on it as well as with my sense of human responsibility for their welfare and — most critically — power to keep them safe. One way I have acted on this sense of love, responsibility, and power is through fostering and adopting numerous “rescued” dogs and cats over the years, and it is through these experiences that I first learned to question the logic of the ark: A beloved cat, killed unexpectedly by an equally beloved dog, dramatically gave the lie to my assumption that humans can safeguard other species or that any truly safe space can exist, whether in my own house or on our home planet. A near-lethal case of toxic shock syndrome just a week after losing a friend to early-onset Parkinson's disease drove home the ubiquity of risk, even within our own bodies. Only once “our dreams of safety” disappear, I argue, can we genuinely learn how to exist with other species as our world radically transforms.

Cleo Woelfle-Erskine (University of Washington)

Animating water through beaver encounters

Beavers' ability to re-animate wastelands, dry streams, and neglected urban channels has captured the imagination of riverine scientists and citizen activists seeking to restore degraded streams. These encounters between humans and beavers carry resonances of earlier encounters with trappers during the Fur Trade era, when beavers were alternately treated as commodity, weapon in multinational trade disputes, ornament, and nuisance. Because beaver dams frequently transgress or flood property boundaries, recharge common aquifers, and renew declining salmon runs, some people have considered them to be agents shaping multispecies commons, while others consider them to be tools that humans can use strategically to restore ecosystem services. As these various advocates mobilize beavers -- figuratively and in the flesh -- to benefit precarious salmon populations, they alternately praise beavers' free labor, applaud their ability to chew through regulatory red tape, develop technologies of multispecies collaboration such as 'beaver deceivers', and kill beavers for their repeat transgressions against property. Through analysis of in-depth interviews and conference conversations with scientists, policymakers, and citizen advocates, I probe the limits of multispecies commons as a conceptual force in animating imaginaries of water security. Thinking with indigenous and feminist scholars about practices of care for unloved others, I propose a relational ethics of trans-species collaboration that embraces stochasticity and contingency in rivers, climates, and social relations.

Session Block 3

3:20-5:00pm

9. Rethinking Approaches to Empowerment in Development (Session II)

Room 105

Organizers: Kaitlyn Spangler (Virginia Tech)
Daniel Sumner (Virginia Tech)

Chair: Kaitlyn Spangler

Kaitlyn Spangler (Virginia Tech)

What's in a household? Male out-migration, community spaces, and empowerment in the Nepali Mid-hills

This paper engages with empowerment and the feminization of agriculture in the context of international development. We draw on qualitative research conducted within a USAID-funded development project that aims to develop, disseminate, and sustain integrated pest management (IPM) practices across the mid-hills of Mid-Western Nepal. Our mixed-methods approach included 68 semi-structured interviews, seven focus group discussions, and participant observation with farmers and NGOs. Through these activities, we sought to better understand the implications of IPM on gender norms and expectations as they intersect with other social, economic, political, and geographical factors. Conceptual domains from the Women's Empowerment in Agriculture Index (WEAI) and the Gender Dimensions Framework (GDF) served as a guiding framework for discussion with participants; domains included control over finances, household decision-making, access to assets, workload and use of time, knowledge and perceptions, and group participation and leadership. Findings contribute to ongoing discussions of the (dis)empowering effects of the feminization of agriculture and disrupt the conceptualization of the household as a bounded entity of decision-making. Male out-migration patterns affect household decision-making over agricultural production and financial management, as well as alter workload responsibilities and corresponding gender norms. Furthermore, the collective power of farmer groups, mobility of men and women in the community, and public participation influence power dynamics within and beyond the household. To more accurately incorporate empowerment within the discourse of the feminization of agriculture, indicators must go beyond the household level; the changing nature of social spaces and community perceptions of gender are important factors. This paper argues for a more flexible definition of empowerment and a more nuanced approach to measuring it within development projects.

Erin Must (University of Guelph)

Empowerment, Repeated Action, and Space: Women and Cattle in Northwestern Botswana

This paper offers spatial insights on gender, development, and empowerment scholarship through a case study of women and cattle in Botswana exploring the interconnections between space, material action and subjectivities. Previously the sole purview of men, cattle access is increasing for women in Botswana. Using women's cattle access as an entry point, this paper extends conceptualizations of the empowerment process to highlight a spatial element. It particularly examines the ways enacting cattle rearing activities in certain spaces impacts women's pride and self-confidence, leading to changes in subjectivities and gender and spatial ideologies. It first explores empowerment in more detail, including the benefits of engaging with ideas of space and repeated action. It divides findings into three unique cattle spaces — namely the cattle post, grazing land, and the market — examining empowerment with attention to both the material and the ideological elements at play in each space. It then summarizes insights regarding the ways enacting cattle rearing activities contributes to the transgression of spatialized gender norms, and the simultaneous contestation and reproduction of gendered subjectivities. It is evident that subjectivities are both contested and reinforced through women's actions in cattle spaces in rural Botswana, and certain activities are simultaneously empowering and disempowering in certain spaces. Broadly, this paper demonstrates the importance of space and action in an examination of empowerment, and has implications for the implementation of gender mainstreaming policies and development objectives in Botswana and elsewhere.

Ryan Good (University of Florida)

Entrepreneurship and the gendered division of labor in the context of urban change in Tanzania's freshwater fisheries

The political ecology of fishing in Lake Victoria has been evolving rapidly during the last two decades, driven by the thriving Nile Perch. The Tanzanian port city of Mwanza has experienced noteworthy human population increases, commercial competition, and foreign investment, which have combined to change the physical and social landscape of the city. As the fisheries have become increasingly globalized, conditions surrounding the fishery have rapidly changed, including those around employment in the fishing sector.

This paper examines the nature and implications of these changes in Mwanza. Based on key informant interviews conducted in 2014 and 2017, the study contrasts fishing businesses based in the urban core with those in more suburban and exurban locations at the periphery of the city. This geographic division of labor has evolved in parallel to an almost-complete gendered division of labor between male fish catching and female processing and selling. The implications of this divide are significant: the ongoing decentralization of the city's fishing industry is resulting in an in-process shift of power away from the male fishers to the female processors. Following Butler's (2004) lead, this research conceptualizes gender not as static, but instead as something which is performed. As the geographic area in which fish are landed, processed, and sold has expanded, fishers and consumers must increasingly interact directly with a woman in their daily lives. The paper contends that these interactions are transforming gender norms in the industry and empowering women in a manner not historically quantified in studies of developing world fisheries.

Maria Elisa Christie (Virginia Tech)

Gendered Space and Subjective Indicators of Impacts of an IPM Project in Bangladesh

Development projects are often evaluated using quantitative indicators, utilizing frameworks such as the Women's Empowerment in Agriculture Index (WEAI) to identify gender disparities and objective measures of empowerment. However, there are increasing calls for employing qualitative methods as well as considering subjective measures to gauge the impact of donor investment on target beneficiaries. Within a USAID-funded research-for-development project in Bangladesh introducing *Trichoderma*, a bio-control agent, the authors focused on gendered space to assess mobility and knowledge of farmer beneficiaries. The project is implemented through collaboration between US universities, a Bangladeshi research institute, and an NGO. Together, they disseminate *Trichoderma* to smallholder farmers to combat soil-borne diseases and teach farmers how to produce Tricho-compost to apply on their crops. Tricho-compost is produced and managed primarily by women in the house-lot garden (HLG), where they spend much of their time due in part to cultural and religious norms that restrict their mobility. Men collect ingredients from outside the house-lot garden, such as water hyacinth from ponds, and women collect them from inside, such as ash from the cooking fire. The authors consider gender roles and farmers' perspectives on the impacts of *Trichoderma* through interviews with men and women farmers at nearly 40 households. Findings point to expected economic and agricultural benefits, but also to unexpected benefits: farmers reported increased recognition, confidence, self-esteem, and happiness, as well as improved intra-household relations. Subjective indicators linked to spaces inside the HLG were mentioned twice as often by women than by men. The paper concludes with recommendations for agricultural projects that aim to engage and benefit women.

13. Barriers and incentives for organic and sustainable practices in Kentucky agriculture

Room 129

Organizers: David Gonthier (University of Kentucky)
Amber Sciligo (University of California- Berkeley)
Aidee Guzman (University of California- Berkeley)
Amanda Skidmore (University of Kentucky)

Chair: David Gonthier

Discussant: Amber Sciligo

Farmers can use a number of management practices to build soils, minimize water contamination, conserve biodiversity, and provide social and economic benefits to their local communities. These practices may reduce input costs, enhance resilience, and improve farmer livelihoods and environmental health. However, while many incentives exist for farmers to adopt these practices, some farmers still face barriers that prevent them from doing so. These barriers may take form in land tenure and price, market access, high pest and disease pressure, little access to information, conflicting regulatory requirements, copious amounts of paperwork with increased regulations, and language that hinders their ability to participate in certification programs (e.g. USDA Organic) or incentive programs that reward the use of sustainable

practices. Lack of adoption of these practices may jeopardize the long-term ecological and socio-economic sustainability of their farming operations and local communities. This session will consist of a moderated panel discussion of Kentucky farmers and academics to address barriers to, and incentives for, the use of sustainable farming practices in Kentucky agriculture. The goal will be to identify research needs to help reduce barriers to adopting sustainable practices

Panelists:

Steve Muntz (Southern Sustainable Agriculture Working Group)

John Bell (Elmwood Stock Farm)

Ford Waterstrat (Sustainable Harvest Farm)

David Shrock (Lincoln County Produce Auction LLC)

Linda McMaine (McMaine's Riverhaven Farm)

14. Political Ecology 101

Room 205

Organizers: University of Kentucky Political Ecology Working Group

15. Poster Session

Room 221

Colleen C. Myles (Texas State University)

Approaching and applying political ecology: Some thoughts on the pedagogy and practice of PE in classrooms near and far

This poster explores how I practice political ecology in the various teaching/learning environments that I inhabit, including within formal political ecology courses and in "regular" environmental ones. I find that even in courses that are not topically focused on political ecology, I still endeavor to infuse the curriculum with the core interconnections of environment, economy, and equity and power, politics, and diversity that define political ecology. This practice – especially when attempted among students who are immersed in a conservative cultural context (i.e., central Texas) – creates both opportunities and challenges, as one might expect. In this poster, I share these (relative) successes and challenges as related to political ecology pedagogy in a variety of course formats, including campus-based courses and international field courses.

Whitney Ricker (James Madison University)

Urban Heat Islands and Sustainable Development: A Spatial Analysis of Neighborhoods in El Paso, Texas

Due to human-induced climate change, cities across the globe will experience increasing extreme heat events. One of the principle causes will be the urban heat island (UHI) effect, as more areas are urbanized and large quantities of land are paved over, leaving little to no natural vegetation. Multiple studies have shown that UHIs correlate with health issues, poverty, outmigration of younger residents, and other negative societal impacts. This is the case in El Paso, where research has shown that some of the most impoverished residents live in the hottest parts of the city. This study will focus on access to economic development initiatives and sustainable resources within El Paso neighborhoods. While past studies have generally focused on health and societal impacts of extreme heat, I will look at this issue from an environmental justice standpoint, focusing on whether or not the individuals in these "hot spots" have equal access to sustainable resources, such as community gardens and organic foods. Using MODIS heat data from the past three summers, I will present findings from a spatial analysis to show where current hot spots are. Overlaying multiple socioeconomic and sustainability indication layers, I will demonstrate correlations between hot spots with indicators such as housing foreclosures locations, stores that sell organic products, and proximity to

community gardens. As our society continues to urbanize and UHI generates extreme heat, these findings will become increasingly important in our efforts to adapt.

Ryan Booth (James Madison University)

Belmont Vineyards: The rise of commercial wine production in the United States

Wine production has had a distinguished legacy in the state of Virginia. While the state currently boasts a \$1.4 billion dollar industry that boomed in the 1970s, the history of commercial wine production can be traced even farther back to 1858 when Marcus Buck founded Belmont Vineyards, one of the first successful commercial vineyards in The United States. Until Belmont Vineyards was established, wine production in the United States was primarily subsistence-based. The study draws upon the viticulture blossoming in the United States and the shifting market demand for native grapes. The success of Marcus Buck's approach to wine production is compared to past failed vineyard operations. These failed operations attempted to grow French and German varieties of grapes to satisfy extant demand for mock-European wines. These operations were largely a failure due to the inability of the grapes to adapt to the dynamic nature of Virginia's climate. Marcus Buck, however, used native grapes and innovative methods of "scientific farming" to grow his vineyard in a region where others had failed. The research will cumulatively seek to determine the socio-political factors and environmental opportunities that led Marcus Buck to found Belmont Vineyards and successfully achieve commercial production levels during the nascency of wine production in the United States.

Jamison Clarke (James Madison University)

Mapping Sustainable Development Networks in the Shenandoah Valley of Virginia

Mapping Sustainable Development Networks in the Shenandoah Valley is a data-driven project that originated in 2015 to inform both sustainability practitioners and Education for Sustainable Development (ESD) scholars about ESD efforts within the northern Shenandoah Valley of Virginia. This poster illustrates the extent to which organizations and agencies within the Shenandoah Valley identify their work as being part of 'education for sustainable development' by:

- summarizing the ongoing survey of environmental and sustainability-oriented government agencies, nonprofit organizations, and businesses regarding their education and outreach programming;
- presenting data about the ways in which these organizations interact with one another as they pursue their missions and purposes;
- provoking discussion about information sharing gaps in the ESD network within the Shenandoah Valley.

This research relies on a political ecology perspective to better understand organizations and actors participating in ESD in the Shenandoah Valley.

16. Towards a Political Ecology of Superfoods

Room 229

Organizers: Emma McDonell (Indiana University)

Chair: University of Kentucky Political Ecology Working Group

Discussant: Garrett Graddy-Lovelace

Gretchen Sneegas (University of Georgia)

Panacea or Poison? The Political Ecology of Raw Milk

Raw milk, or fluid milk that has not been heat treated to kill bacteria, is a controversial foodstuff. Proponents view raw milk as a "superfood," claiming that unpasteurized dairy can treat asthma, allergies, eczema, lactose intolerance, and myriad other health issues. Food scientists and public health officials, on the other hand, view raw milk as inherently dangerous due to the increased risk of pathogens. Previous scholarly investigations of raw milk have focused on topics such the biopolitical dimensions of raw dairy and how pasteurization restructured the U.S. dairy industry in the twentieth century. However, raw milk has yet to be explicitly examined through the lens of political ecology. My paper seeks to address this gap by examining how the modern raw milk movement employs indigenous foodways and knowledges used to legitimize

raw milk consumption. In particular, I focus on the Weston A. Price Foundation (WAPF), an organization founded in 1999 which is largely responsible for shaping the modern raw milk movement. WAPF draws on the research of the eponymous Weston A. Price, a dentist whose research among indigenous populations in the early twentieth century gave rise to his claims that the modern diet was responsible for diseases that were rare or nonexistent in non-Western cultures. My paper argues that the raw milk movement leverages the “traditional” knowledge of indigenous peoples researched by Price, with raw milk serving as a physical vehicle for “good” bacteria to offset the ravages of a modern, Western lifestyle. This project employs Science and Technology Studies, materiality theory, and social construction to outline a political ecology of raw milk, thereby shedding new light on the modern raw milk movement.

Christopher Jarrett (The University of Texas at San Antonio)

Who Owns Guayusa?: The Intersection of Intellectual Property and Commodity Chain Governance in a New Superbeverage Industry

Guayusa (*Ilex guayusa*), a holly leaf native to Amazonian Ecuador, has become a popular ingredient in many beverage products since around 2009, when a social enterprise called RUNA began exporting it in the form of boxed teas to the United States. Prior to its widespread commercialization, guayusa had long been central to the daily life and cultural identity of the Amazonian Kichwa people, who are now the primary producers of guayusa leaves for this new industry. This paper explores the various disputes and debates surrounding the ‘ownership’ of guayusa as it has been transformed from a plant primarily consumed as an early morning tea in Kichwa communities into a global commodity marketed as a ‘clean energy’ superbeverage with high levels of antioxidants, flavonoids, and other nutrients. It explores how ideas about intellectual property rights related to guayusa intersect with disputes over the way the guayusa industry is structured, with RUNA as by far the largest enterprise in the industry. It discusses how applying a political ecological perspective to the question of who guayusa’s rightful ‘owners’ are might lead us to a deeper understanding of the contested terrains that emerge in the context of new superfoods industries. I ask, fundamentally, what is at stake in disputes over intellectual property rights to guayusa, and what does owning guayusa mean in the context of fundamental structural inequalities between indigenous producers and non-indigenous entrepreneurs?

Darcy Mullen (Georgia Tech)

Matcha, Turmeric, Spirulina, and Neoliberal Pica

In October 2017, Bon Appetit made quite the statement about this year’s food trends. In an (almost) opinion piece, Kate Dwyer wrote, “What do matcha, turmeric, and spirulina have in common besides their status as wellness A-listers? They’re powder, they’re pretty, and they taste like dirt. Yes, I said it. If you drink a mug of matcha without knowing that it was matcha, you’d probably hate it...”

Following near-instant backlash, the magazine edited their piece to read that these foods tasted “earthy,” not “like dirt.” These three superfoods have a lot more in common than their taste—in American culture they operate within a particular rhetorical system.

In this presentation, I use Piers Blaikie’s early work on erosion in connections with the rhetorical tool of “ideographs” from Michael McGee. I combine these methods to illustrate what I am terming “neoliberal pica.” Specifically, I argue that rhetorical tools can benefit political ecology to expand possibilities within methodologies.

Plenty has been said about why describing these foods as “tasting like dirt” is both culturally insensitive and racist. In this presentation I want to argue that there is much more to add to the discussion about the political ecology of calling these foods “dirty.” The rhetoric here is a case study in how, and why, rhetorics of dirt and food are political, and collide in our neoliberal conceptions of super foods.

Emma McDonnell (Indiana University)

Quinoa, the Not-so Lost Crop of the Incas: A Critical Examination of Culinary Extractivism in Peru

In the past decade, quinoa has transformed from a disparaged “peasant food,” produced and consumed almost exclusively in the Andean highlands, into a world renowned “superfood.” By all accounts, quinoa’s story appears to be a tale of discovery – a crop lost to the barbarities of colonialism and discovered by Western health-food fanatics centuries later. And that’s certainly the principal plot told about quinoa in mainstream media. This paper troubles this story. I want to push us to problematize narratives of loss and discovery by asking who these stories exalt as heroes and whose work they obscure through probing links between lost/discovered food narratives, fashion cycles, and boom-bust markets. I focus on the case of quinoa, considered a poster child of a successfully lost/discovered food in Peru, and its location within Peru’s broader “gastronomic revolution” which is largely based upon revalorizing lost dishes and ingredients. I make three arguments: (1) Foods we term “lost foods” are often poverty foods that are not lost, forgotten, or in decline – they are unknown, unvalued, or neglected by elite consumers; (2) Narratives of discovery of lost foods can be linked to a long history of discovery narratives in areas colonized by

European powers. Protagonists of these stories are generally white, male outsiders – and today’s Peruvian chefs can be read as a contemporary manifestation of this enduring personage; (3) Consumer desires for lost/discovered foods are linked to dynamics of class distinction and fashion. This is concerning due to the connection between fashion cycles and boom-bust markets. I then call for specifying what we mean by discovery and success by tracing the shifting geography of quinoa production and consumption over the past decade to highlight how quinoa’s “success” has prompted quinoa booms in some regions and busts in others.

17. Political Ecologies of Landscape and Subject Formation

Room 229

Organizers: Joshua Eichen (University of Minnesota)
Joseph Getoff (University of Minnesota)

Chair: Joseph Getzoff

Charlie Corwin (University of Illinois at Chicago)

Actor Network Theory as Methodology: A Case of Cover Crop Farming in North Central Illinois

This paper makes the case for actor network theory (ANT) as an ontological framework for exploring the co-production of knowledges in the row crop farming landscape in north central Illinois. Although ANT is often critiqued for its neglect of broader state politics and global markets, it is useful in the context of knowledge production and agriculture because of its ontological orientation that draws in non-human actors (Rydin, 2013). ANT uses research tools, such as spatio-temporal maps and descriptive narratives, to represent the activity of network building among key actors (Read & Swarts, 2015; Spinuzzi, 2008).

Here, I provide a detailed methodology to explore the interactions among farmers, agricultural institutions, local ecologies, as well as the larger climatic and economic forces. Exploring such interactions in different cropping systems through ANT exposes the various actors, knowledges, and practices involved in network formation. Specifically, I compare cover crop farming with conventional farming in the Vermilion River Watershed in Livingston and Ford County, Illinois, to understand how co-production of knowledge and network building may change in a divergent cropping system.

The purpose of this paper is to show that actor network theory offers important tools for research on knowledge networks and agriculture. Through exploration of the particular case of cover cropping in north central Illinois, this paper proposes specific methodology that incorporates elements of ANT for use in agro-ecological research.

Kaytee Canfield (University of Rhode Island)

Catalina Island: A vacation in paradise, a life of environmental injustice

Catalina Island is a southern California tourist destination that has served as an island oasis from the mainland life since the early 1900s. One family manages 99% of the island through its ownership of and/or influence over the Catalina Island Company, the Catalina Island Conservancy, and the research institute on the island. This creates not only tension among the company’s management, affiliated groups, and residents, but also environmental injustices of resource distribution and process access. Residents face water restrictions and usage fees, are rarely able to own property, and often feel their voices go unheard. Employees are afraid to share their opinions on tourism development even confidentially for fear of employment ramifications. The Catalina Island Company managers’ continued exclusion of residents has manifested in classed and owned subjectivities. Residents feel they are the isolated, disposable, unimportant “others” in a community prioritizing tourists’ memories over residents’ needs and employees’ contributions. Residents also express a sense of ownership over the island and rights to influence island development though they lack legal titles to land, leading to this idea of “owned subjectivities”. Use of executive decisions rather than community inclusion in development ignores these subjectivities through exclusion of local knowledge of best development practices for the island. This paper analyzes how one hundred years of private management of an apparent paradise has created and perpetuated environmental injustices of process exclusion and perceived unfair resource distribution, the subjectivities this has highlighted in understanding the communities, and the importance of increased community involvement to develop an island with a sustainable tourism economy and environment.

Joshua Eichen (University of Minnesota)

Racial State-Making on Sugar Plantations in the Early Modern Portuguese Atlantic: Co-Producing Environments and Subjects

This paper explores the transformation from indigenous to imported African labor-power on the sugar plantations of Northeast Brazil over the long sixteenth-century as an opportunity to consider how environment-making is inseparable from the subject-making practices of space, time and ontology. Beginning with Weber's claim that the state is determined by who has the monopoly on the legitimate use of force over a given area (Weber 2015), I argue that first, with their monopolies of violence, sugar plantations were states, and second, expanding on the theorizations of the racial state (Goldberg 2002) and racial capitalism (Pulido 2016), I examine the ecological practices of transforming forests into sugar plantations and producing sugar to argue that plantations were race-making states through their production of racialized and racializing landscapes and the formation of racialized subjects.

Clare Beer (UCLA)

Metabolism and the state: Toward a theory of environmental statecraft

Marx's conceptualization of 'metabolism' (Stoffwechsel) is frequently used by political ecologists and critical human-environment scholars to describe the productive exchange between nature and society. Missing from most analyses of metabolism, however, is clear articulation of the state's mediating role. While social and ecological forces constitute metabolism, it is the state that commands how these forces are allocated, measured, regulated, and stabilized. This paper argues that the state is fundamental to metabolic relationships, and that foregrounding the state as such requires the reconsideration of existing conceptual and theoretical paradigms. My argument unfolds in two parts: first, I propose a tripartite conceptual framework of nature-capital-state relations, integrating Bob Jessop's strategic-relational approach to state theory with the geographical political economy of nature. By re-working the state-society and nature-capital binaries, this framework allows for the simultaneous consideration of nature and the state, thereby producing a more robust understanding of metabolic production and historical change. Second, I operationalize this framework through a proposed theory of environmental statecraft. Environmental statecraft explains how nature, capital, and the state mutually engage, presenting each as dialectical co-evals that come into being through the others. In contrast to more orthodox foundations of state theory, environmental statecraft prioritizes – instead of marginalizes – the role of nature in political statecraft.

18. Confronting Extraction: Resistance to the Extractive Industries in the Neoliberal Era

Room 209

Organizers: Sarah Renkert (University of Arizona)
Claudia Díaz-Combs (University of Arizona)

Chair: Sarah Renkert

Claudia Diaz-Combs (University of Arizona)

"Fluye el Petróleo, Sangra la Selva" (As the Petroleum Flows, so Bleeds the Jungle): Ecuador vs. Chevron

In 1993, 30,000 Ecuadorians filed a class-action lawsuit against Chevron Oil Company for extensive damage to ancestral lands as a result of petroleum extraction in the Amazon. More than 20 years later the lawsuit continues. This mixed methods study considers the trajectory of the case through interviews with lawyers, activists, Indigenous peoples, and others in order to understand how and why the plaintiffs prevailed in the highest court in Sucumbíos, Ecuador. In addition to qualitative interviews, water samples were collected from 60 homes to measure for microbial and chemical contaminants from oil drilling. Initial analysis indicates the presence of E. coli and fecal coliforms, both of which are not permissible in drinking water at any level according to the EPA. Along with these environmental measurements, a questionnaire was distributed in order to assess an overall exposure to the contaminated water to the community members. One of the main questions posed was whether participants ensured that the quality of drinking water was safe, either by boiling, adding chlorine, or changing filters. The most common responses to this question was no, and although community members were aware of the contamination, they simply stated that "this was just the way things were." This work is centered with a political ecology framework to understand the relationship between state structures, multinational oil corporations, and marginalized communities in the Ecuadorian Amazon.

Sarah Renkert (University of Arizona)

Tourism, Petroleum, and Resistance in the Yasuní National Park

The Kichwa Añangu Community lives in Ecuador's Yasuní National Park. In 2007, the park gained international fame when Ecuador's then President, Rafael Correa, made a groundbreaking request of the global community. In front of the United Nation's General Assembly, he offered to leave 900 million barrels of petroleum underground inside of Yasuní's Ishpingo-Tambococha-Tiputini (ITT) oil block. In exchange, he asked donors from across the globe to contribute 50% of the profit Ecuador would have accrued from extracting. On August 15th, 2013 Correa announced that the Yasuní-ITT Initiative had not raised sufficient funds and would be canceled. As of October 2016, drilling began in the ITT block.

While Yasuní may be known for the failed ITT Initiative, the Kichwa Añangu Community is attempting to reshape the park's image through community-owned tourism. Añangu's rationales for pursuing tourism are complex, but this research demonstrates how the Añangu are resisting the larger petroleum industry through tourism. For one, the Añangu do not own the subsoil rights to the petroleum reserves quietly resting under their land. Yet, they are strategically working to produce popular and political awareness about their project, with the hope of protecting their land from future threats. Second, it is well known that petroleum is one of the highest paying industries in the region. While tourism cannot economically compete with petroleum, it creates job opportunities that are locally based, in line with Kichwa ontologies of ecological stewardship, and serves as a curational tool of cultural reclamation. In evaluating this process, this research examines how community-owned tourism can be deployed as a tool of resistance to petroleum extraction in the Ecuadorian Amazon.

Elizabeth Eklund (University of Arizona)

The thinness of Paper Parks as a means of resistance

There were many factors that went into the effort to designate the mountains of Sierras La Giganta and Guadalupe as a Biosphere Reserve. Under Mexican Law (LGEEPA, Article 28) Biospheres have a strict legal definition, tied to an international framework as part of United Nations Educational, Scientific and Cultural Organization (UNESCO) Man and the Biosphere (MAB) program. The overt reasons to protect the mountains were tied to the discourse of the intrinsic value of nature, protecting ecosystem services in particular water sources, and to maintain the cultural heritage of a traditional way of life. Mining was never an official reason in any of the documents produced by conservation actors who worked on the proposal. But it was a clear subtext that came up in conversations. It was built into the discourse about protecting water sources and the idea of preserving the traditional ways of life for the rancheros against "other activities" that could come to the mountains. Biosphere reserves have been critiques as "paper parks" but the paper part the activists sought was a groundwork to resist extractive industries exploring the mountain back bone and primary water source for the State, especially after gold was discovered in Los Cabos. Unfortunately, activists promoting the biosphere reserve primarily lived in the state capital of La Paz. Layering a park over a vast residential space where ejidatarios and community members were not actively engaged in seeking a reserve has created conflict along with fears that a large protected area was tantamount to a massive land grab. The thinness of paper may yet prove to be too thick since the plan called for community-based management but the government of Baja California Sur has publicly noted that the communities who would be managing the area did not call for the reserve.

Stephen Oliver (University of Arizona)

Organizational Approaches to Food Security in Paraguay

For many agricultural producers, participating in the export sector can provide a number of benefits that are potentially too profitable and too appealing to outright resist. Despite the unstable and exploitative nature of export agriculture in developing countries, national level agrarian policy, international economic demand and neoliberal development models can encourage smallholder farmers to produce primarily or exclusively for the export sector. However, the form in which those producers participate and the organizational model they use to represent them on the international market can itself be a form of extractive resistance. Two sugar cane cooperatives in Paraguay's Cordillera department reveal how cooperativism and smallholder-driven agriculture attempts to negotiate the space between community-driven development and export agriculture within the neoliberal development model. This research places the cooperatives within the greater Paraguayan context which overwhelmingly relies on soy and other high-yielding, low labor-intensive export crops which tend to be inharmonious culturally and nutritiously with the communities where they are grown and are characterized by the use of environmentally harmful external inputs. By examining the changes commonly associated with neoliberal transitions through a food security and food sovereignty framework, this research looks at how cooperatives address the impacts of these transitions, the specific initiatives and strategies employed by the cooperatives, and the impacts of successful cooperative structures on community and individual livelihoods.

Moriah Stephenson (University of Arizona)

The Oklahoma Standard: Resisting Resource Extraction and Re-imagining Okie Identity

Dominant narratives of Oklahoma identity, history, and belonging lead to a discursive interconnectedness between the oil and gas industry and imaginings of Oklahoma-ness. The entanglement of Oklahoma-ness with the energy industry creates challenges for Oklahoma environmental activists who must not only challenge the energy industry's actions but also resist a pervasive oil and gas-centered ideology of what it means to be "Okie." Environmental activists working within Oklahoma employ multiple strategies to illuminate counter-narratives of Oklahoma history and identity in order to imagine ways of being Oklahoman that include resistance to resource extraction. Activists in Oklahoma resist the energy industry's dominance, not solely because of environmental degradation or fears of climate change, but because they experience oil and gas as a center of power and force of marginalization in the state. Environmental activists creatively challenge the dominance of the oil and gas industry through historical narratives, religious discourses, and direct action. However, the overwhelming presence of the energy industry creates challenges for activists, and at times, activists unintentionally reproduce dominant narratives of statehood and identity that hinder their work and lead to further marginalization within Oklahoma. My research incorporates ethnographic analysis, discourse analysis, and experiential, embodied knowledge as a person from Oklahoma who participated in environmental protests before entering the field as an anthropologist. Examining resistance to the oil and gas industry in Oklahoma from 2013 to the present, I consider the contextual struggles that Oklahoma environmental activists face in hopes of further supporting and creatively imagining resistance to resource extraction.

Session Block 4

9:00-10:40am

19. 'Green-washing' Settler Colonialism: Dispossession, Sustainability, and Natural Resource Management

Room 105

Organizers: Sara Salazar Hughes (Mount Holyoke College)

Chair: Sara Salazar Hughes

Gabi Kirk (University of California Davis)

Trees, Trains, and Terraces: Unnatural Nature in Palestine-Israel

Palestine-Israel is a place of “constructed narrowness” (Khalili 2015) – skinny through natural boundaries, made narrower through the amalgamation of spatial and social realities and mythologies, incredibly evident through transit and navigation. To challenge the racial hierarchy manifested on its physical landscape through settler-colonialism, which posits Palestinian society and infrastructure as “underdeveloped,” a wild part of the natural landscape (McKee 2016), one must challenge the nature/culture binary and complicate the false division of material and epistemological domains (Jensen 2017). Doing so exposes the blurred lines between Palestinian nature and culture, and also exposes the dialectical relationship between Israeli infrastructure’s colonial past and present (Gregory 2004): Israeli infrastructure only exists in its developed form because of settler-colonial militarism, and its nature is also constructed. In this paper, I offer a multi-species ethnography (in the spirit of Tsing 2015), meandering through a history of the social nature of Palestinian and Israeli landscapes. I will offer reflections on the biodiversity (human and more-than-human) and infrastructural history I encountered during two visits to south Jerusalem/AlQuds in 2013 and 2016, through two walks I took through the valley crossed by the Tel Aviv-Jerusalem Railway. To understand how Israel has increased its control on the lands of the villages of Al-Walaja and Battir, and analyze the state’s military and conservation tactics (and their overlaps), I draw theoretical and historical insights from political geography (Weizman 2007; Rotbard 2015), political ecology (Cohen 1993; Davis 2015) and intersections.

Joseph Getzoff (University of Minnesota)

'Afforest the Waste': Settler-Colonial Sciences in the Naqab-Negev

This paper explores the relationship between Zionism, settler-colonialism, and institutional environmental knowledge by focusing on the emergence of the Jacob Blaustein Institute for Desert Studies (BIDR) in the Naqab/Negev desert in Palestine/Israel. It draws from field research conducted between July 2015-May 2017 and employs archival collections that seek to narrate the importance of BIDR for Israeli state building and global environmental action. The Naqab/Negev has long been a site of intense land conflict between the state and indigenous Bedouin citizens whose very physical presence disrupts Zionist plans to “develop” the region, that is, increase the Jewish population and bring all land under state control.

Zionist narratives of development argue that pioneers “make the desert bloom.” Claiming they follow from first Prime Minister David Ben-Gurion’s imperative to “conquer the desert”, academic institutions in the Negev/Naqab continue “developing the Negev,” often enrolling the environmental sciences in the expansion of settlement south. Indeed, Zionism has long relied on claims of scientific expertise to justify its settler-colonial project and to garner international support. From the 1950s to the present, scientists connected to BIDR (and its earlier institutional iterations) often linked their individual projects to state goals. Further, they began to connect their work to other arid regions, producing a network of scientific connections and expertise in the Global North and South. In the case of BIDR, Zionist scientists attempted to universalize their situated settler-colonial practices in the way they addressed global environmental issues such as desertification and arid zone agriculture. Therefore, I argue that settler-colonialism renders its own processes of dispossession as scientific experimentation and knowledge.

Sara Salazar Hughes (Mount Holyoke College)

“Greenwashing” the Occupation: Environmental governance and the Israeli occupation of Palestine

Debate about the Israeli occupation of the West Bank largely ignores Israeli agricultural activity in the Palestinian territories in favor of settlement growth, despite the fact that more land is appropriated for these uses than for settlement built-up areas. This ecological dimension of the occupation has far-reaching territorial implications, including humanitarian repercussions and risks to Palestinian state-building and civil society. In this paper I analyze the use of agricultural innovation, nature reserves, and “green” technology—ostensibly aimed at sustainable resource management—as tools of land appropriation and dispossession. I investigate how cutting-edge Israeli agricultural techniques—for instance organic farming, grey water, hydroponics, and drip irrigation—feed into age-old settler colonial discourses of “proper use” of indigenous lands. I also investigate how land appropriation is being legitimized as climate change mitigation and natural resource management, and how Israel is positioning itself as a global leader in sustainability, afforestation, and desalinization, without reference to the wider geopolitical context. The examination of Israeli agriculture and resource management in the occupied West Bank brings up tricky questions around indigenous rights to the land, “best use,” and human transformation of the environment. Ideas around “restoring” desert landscapes (which are built on the assumption that Indigenous uses of these landscapes rendered them “wastelands”) play a tremendous role in ecological management in the West Bank. I am interested in how “expertise” in resource management is deployed as a means of territorial dispossession, and in histories of knowledge production and unequal relations of power around human-environment systems in settler colonial and other contested contexts.

Deondre Smiles (The Ohio State University)

Hidden Violence: Indigenous Resistance in Quotidian Settler Structures

As Patrick Wolfe (2006) asserted, settler colonialism is a structure, not an event. Nevertheless, much work in settler colonial studies has done just that—focused on ‘spectacular’ events, rather than quotidian, banal structures. To date, this focus on the spectacular has arguably obscured attention from the banal, everyday moments where the settler colonial state makes its presence violently felt on indigenous bodies, such as through law enforcement, coding of spaces, and acts of Western scientific discourse, like autopsy. By focusing on the ‘spectacular’ we rob ourselves of insights into the ways that through indigenous people living their everyday lives according to their indigenous identities, they present an effective and potent resistance to settler colonial violence. I expand upon Audra Simpson (2014), where indigeneity ‘interrupts’ the different apparatuses of settler structures that manifest themselves on multiple scales. Through their quotidian acts, indigenous people, to quote Wolfe again, “get in the way” of settler colonial structures and disrupt their eliminatory discourses. It is here, I argue that it is here that we will find the true nature of contestation between indigeneity and settler structures. In particular, I will focus on Northern Minnesota, where actions such as the construction of the Line 3 pipeline, the attempted autopsies of indigenous bodies, and uneven criminal and civil jurisdictions have visited grimly quotidian violence to Anishinaabe/Ojibwe bodies, yet have sparked adept and resourceful responses from Anishinaabe people.

20. Crossing Fields & Sparking Interest with Art:Sci

Room 119

Organizers: Kaitlin Zapel (University of Kentucky)
Karen Stevens (University of Kentucky)

Chair: Kaitlin Zapel

Kaitlin Zapel (University of Kentucky)

Indigenous Artisans: Stewards of Nature; Mestizo Artisans: Eco-Friendly Entrepreneurs

Indigenous populations are often considered stewards of the land; they are stereotyped by others as being more closely connected with nature, and therefore responsible for maintaining and preserving nature, even as it is expected that other populations will exploit the environment for economic gain and convenience. Concerned by the impact of craft production on the environment, mestizo artisans in Otavalo, Ecuador have begun creating recycled and/or eco-friendly art that mainly caters to tourists. Indigenous Otavaleños have faced pressure to change their production methods to meet growing demands by tourists for small, cheap goods and have often willingly done so through innovative techniques that many indigenous artisans see as necessary progress for craft production to continue. Non-indigenous populations are often alarmed at the changes indigenous artisans are willing to make and voice these concerns under the banners of

“authenticity and tradition.” In light of this, I argue that perceptions about indigenous peoples’ relationship to nature and craft production is more about power and social status than about environmental stewardship.

Building on dissertation research which focuses on the gendered labor of craft production and distribution of Otavaleños, this presentation analyzes the interaction between people and nature in terms of craft production and distribution, especially in terms of materials used and waste produced. What are the impacts of changes in production methods and importing mass-produced goods? This presentation explores the racial and ethnic implications in terms of craft production’s environmental impact.

Emily Horton (University of Georgia)

In response to international fishery declines, thousands of marine protected areas have been created around the globe in recent decades. Marine Extractive Reserves (MERs) are a type of marine protected area in Brazil that aim to ensure sustainable natural resource use and safeguard the livelihoods and culture of traditional populations. MERs employ a co-management framework, whereby governments and communities share power and responsibilities. On the one hand, this presents an opportunity to adaptively co-construct management approaches through processes of dialogue and co-learning that engage diverse perspectives. However, in environmental governance and policy arenas, different framings of issues can privilege certain viewpoints and values while marginalizing others. This continues despite the recognition that multiple, partial perspectives can inform discussions on how to more equitably pursue well-being and conservation goals. Governance that is not responsive to localized socioecological conditions and needs, risks falling short of, or even undermining intended outcomes. This study engages multiple perspectives by drawing from the social sciences, natural sciences, and visual arts to explore the social and ecological dimensions of small-scale fisheries governance in Marine Extractive Reserve Cururupu. In this photo essay, I focus on the visual arts component of my research, exploring how I have employed photography (documentary and participatory) to address research questions, disseminate findings to communities, and inform more inclusive fisheries policy concerned with sustainability and well-being.

Benjamin Fash (Clark University)

Political Ecological Possibilities from Sensory, Decolonial, and Participatory Experiments in Film

While many art forms have the potential to open new ways of thinking and being, few art interventions are successful at creating the ruptures and social engagements that scholars experimenting with the arts may like to see. This has much to do with not just the form and content of the work but also the processes of how work is produced and shared. This paper will examine these issues with documentary film, and highlight innovations from visual anthropology, decolonial praxis, and archival cinema. Finally, it will suggest how these will be integrated in collaborative research with organizations actively producing alternatives to extractivist economies. Sensory ethnography, indigenous film, and participatory experiments with archival footage all offer interesting possibilities and limitations toward social change. Sensory ethnography such as the 2014 film *Leviathan* focuses on the affective fabric of human and animal existence—drawing attention to dimensions of the world that are otherwise difficult or impossible to access with propositional prose—yet its production and dissemination tend to fall in the trappings of elite contemporary art. Meanwhile, indigenous cinema, such as in the Zapatista VIDEOASTAS project, offers examples of work produced by, about, and for communities to mobilize members in collective action, though its form and dissemination is often following a passive relationship between viewer and producer. Finally, participatory experiments with archival video, such as the *Lost Landscapes of San Francisco* series, demonstrate the wild popularity of engaging publics in collective history production by prompting them with ephemeral clips of the past, though the political force of this may be ambiguous. Drawing on the strengths of each of these innovations, this paper will propose a Participatory Action Research agenda for dissertation research focused on documenting, analyzing, and mobilizing alternatives to extractivist economies in Honduras.

Dylan Harris (Clark University)

Coal Miners in Brooklyn? A Critique of Climate Art-ctivism & A Proposal for Climate Storytelling

Critical and social theorists have argued that climate change – its spatial and temporal scales – is too large to perceive in its entirety. Further, some scholars have argued that contemporary climate change is post-political, meaning that it has transcended the realm of democratic possibility, or that it is seen as something ‘too big’ to politicize at a local or regional level. If left unchecked, climate uncertainty leads not only to inaction, but also to injustice and inequality for the world’s most vulnerable populations. Scientists share these beliefs and have recently turned towards the arts in hope of help in conveying their import. Yet while climate-focused artistic interventions have proliferated in recent years, most are in locations geographically or culturally inaccessible to the majority of U.S. citizens. Following Tsing et. al.’s (2017) call for Arts on a Damaged Planet, this talk seeks to think deeply and critically about the type of art that is currently being produced around climate change, and to articulate theoretical and practical approaches to the interfaces of climate art, activism, and science. This talk will discuss and critique two recent artistic interventions – a play about extinction titled *Pluto: No Longer a Play*, directed and produced by the Superhero Clubhouse in Brooklyn, NY; and an art installation in the Harvard Forest titled *Hemlock Hospice*. Then, this paper will make the case for

thinking about new forms of socially and critically engaged art, focusing on storytelling specifically. This talk will conclude with a discussion of my upcoming dissertation research and a developing project with Foxfire in Mountain City, Georgia that deals specifically with storytelling and climate change. The ultimate aim of this discussion is to take seriously the inertia that is bringing climate scientists and artists together and to consider the possibilities of these encounters.

21. Beyond Big Tobacco: Evolving Sustainable Livelihoods and Communities after Tobacco

Room 129

Organizers: Tony Milanzi (University of Kentucky)
Ann Kingsolver (University of Kentucky)

Chair: Tony Milanzi

Discussant: Ann Kingsolver

Mary Beth Schmid (University of Kentucky)

"It's a family-run thing": Tobacco and Tomato Farming in Southern Appalachia

When you ask a Burley tobacco grower in western North Carolina about their life, many of them will begin with a phrase like, "grew up raisin' tobacco" to then go on and tell you about their tomato farming enterprises. The story of a now retired, western North Carolina tobacco farmer's lifetime often starts in the 1930's or 1940's when s/he would work as a child in the crop with their grandparents, and other kin. Over a lifetime, U.S. tobacco went from being the basis of a honorable collective livelihood – an agricultural commodity whose global trade was brokered by the U.S. federal government – to being a profitless venture, an out of favor U.S. agricultural commodity which now "competes" in the "global market". A retired tobacco farmer's life history reveals a decades-long process of re-shaping of agricultural marketshare, a re-shaping which resulted from an agricultural revolution and in the mass dispossession of tobacco farming enterprises. However, in the 1950's tobacco farming families began to cultivate tomatoes counter-seasonally with tobacco on the same piece of farmland resulting in a year-round farming livelihood. As one farmer puts it, "The tobacco season starts to wind down just as the tomato season starts to pick up." This paper explores the micro-regional history of this tobacco-tomato cash crop cultivation strategy through the memories of agricultural industry actors in western North Carolina. The paper addresses the ways in which farming families adapted to the changing agricultural commodity market landscape, as U.S. trade policy transitioned from "protectionist" to "free market" and genetically modified seed varieties increased yields, reshaped production schemes, and transformed labor market demands. Notably, the paper shares examples of creative alliances between tobacco and tomato farming families and shows how the socio-demographics of farming families diversified in southern Appalachia alongside the diversification of cash crop production.

Tony Milanzi (University of Kentucky)

The Tobacco Industry in Malawi: Shaping Perception of Risk, Perpetuating a Livelihood Crisis.

The Tobacco Industry in Malawi: Shaping Perception of Risk, Perpetuating a Livelihood Crisis.

Changes in the global system of agricultural production have been extensively studied by scholars in the agro-food studies tradition. Studies have shown that a restructuring global agriculture (as a result of trade liberalization, changing production and consumption patterns) has had negative impacts on agrarian populations of growers, workers and communities (Goodman and Watts 1997, Craig 2005, Bacon 2005, Ambinakudige 2009, Wilson 2010). The implicit assumption has been that agrarian crises are an inevitable part of economic restructuring. The role of histories and power dynamics within industry institutions in producing, shaping and mediating livelihood crises has not been adequately investigated (Fraser et al 2014; Hausserman and Eakin 2008).

This paper examines the role of state and industry institutions in creating and perpetuating a livelihood crisis among smallholder tobacco growers in Malawi by masking growers perception of the long term viability of tobacco farming. Specifically, the author examines the strategic actions of the state and the tobacco industry in shaping discourses around the livelihood crisis among smallholder tobacco growers resulting from fluctuating and generally declining prices paid to smallholder tobacco growers in Malawi. By placing the blame for low prices on growers' lack of attention to quality and on the global anti tobacco campaign, the state and the industry precludes smallholders from taking a long term view of the viability of tobacco farming, and therefore forestalling farm and income diversification initiatives. The author argues that transnational tobacco companies selectively adopt and use contradictory discourses to marginalize growers and hold them in a constant state of crisis. The livelihood crisis among smallholder tobacco growers in Malawi is not an inevitable outcome of global agricultural restructuring,

but the result of machinations of the tobacco industry acting in concert with the state to ensure continued production of a harmful but lucrative commodity.

Marty Otanez (University of Colorado- Denver)

Labor Trafficking in Malawi Tobacco Farming Sector

Youth as young as five years old pick tobacco and are denied an education and basic food requirements in Malawi's tobacco growing sector. Children and adults are trafficked to farms both within Malawi and in neighboring Zambia, Tanzania and Mozambique. Tobacco families remain impoverished through tobacco company practices such as collusion over leaf prices, and unfair contract arrangements with tobacco companies. The study of trafficked persons requires a critical approach to sensationalized 'modern day slavery' narratives that circulate in tobacco control and human rights discourses.

A structured questionnaire was administered to 40 farmers and farm workers for health, social and economic information. We conducted content analysis of national and regional newspapers and interpretive narrative analysis of in-depth ethnographic interviews with five tobacco farmers and farm workers.

A representative case of trafficking involves a man, his wife and two children who receive from an illegal labor recruiter a promise of paid work. Labourers are transported over 800 kilometers. Ultimately, parents send their children to the fields instead of schools and the family remains indebted to the farm owners due to insufficient or non-payment of earnings. Farm owners sell their tobacco to global leaf buyers who, in turn, sell to companies such as Philip Morris. Most study participants indicated that they have no finances to exit tobacco farming or return to home. Some individuals acknowledge that their workplace dissatisfaction while others are determined to stay on with plans to be independent tobacco farmers.

Trafficked persons and forced laborers respond in diverse ways to their conditions. An informed approach to labor trafficking seeks to improve health outcomes for workers and challenge tobacco industry behavior that perpetuates exploitation. Global tobacco control needs counter-narratives of tobacco farm workers as resilient and courageous, instead of as victims and targets of policymaking.

22. General Session: Urban Political Ecology

Room 205

Organizers: University of Kentucky Political Ecology Working Group

Chair: University of Kentucky Political Ecology Working Group

Megan Styles and Amy McEuen (University of Illinois Springfield)

The Political Ecology of Memorialization in Conservation: Community Engagement & Ecological Practice in Lincoln Memorial Garden

In this paper, we examine the political ecology of 'memorialization' in conservation through the lens of Abraham Lincoln Memorial Garden (LMG), a 100-acre woodland and prairie restoration area located in Springfield, IL. LMG was designed in 1935 by landscape architect Jens Jensen, whose prairie style design philosophy incorporated native plants and preserved organic features of the local landscape. Jensen believed that communal practice in nature would help garden visitors develop a sense of civic responsibility. Locally, the garden's creation was spearheaded by Harriet Knudson, who expertly mobilized garden club volunteers and society women to build support and locate funding for the effort. Both intended for the garden to be a 'living memorial' to Abraham Lincoln. Visitors remember and commune with Lincoln by walking in a restored landscape with tree and plant species native to the places where Lincoln lived. In recent years, the park has raised operating funds by allowing community members to memorialize their loved ones through benches engraved with Lincoln quotes. We explore the ways that memorializing an American icon (and prominent local residents) in a 'garden' setting has impacted community engagement and ecological practice in LMG over time. We also examine the ways that 'memorialization' has shaped the creation of environmental subjects in LMG, and the ways ecological management decisions have been bounded by this design philosophy.

Laura Grier (University of Michigan)

The Political Ecology of the Local Food Movement in Ann Arbor, Michigan

Activists and consumers often portray the local food movement in the United States as a means of resisting the injustices resulting from the global industrial food system. Such is the case in Ann Arbor, Michigan, a college town where local food production and consumption is held up as building tight-knit communities. In this paper, I seek to answer the question “Does the local food movement as a means of resistance to the global industrial food system bring about environmental justice in Ann Arbor, MI?” In doing so, I analyze the narrative of tight-knit community surrounding the local food movement of Ann Arbor. I first present the methods I used to perform such an analysis, which include a review of existing literature and participant observations. Next, I discuss the politics of the local food movement, analyzing it in terms of forces of capitalism, Marxism, and neoliberalism. Then, I present evidence of environmental injustices perpetuated by the local food movement including divisions along the lines of race and socioeconomic class. I conclude that the movement does not promote environmental justice, as it is rather a self-serving system that grants certain actors power while continuing to limit access of other communities, all in the name of building community.

Austin Martin (University of Michigan)

Socio-economic geographies of lawn consumption and their potential effects on urban wild bee communities

Urban areas can provide havens for insect pollinator species richness and diversity. As urbanized land expands, monocultural turf grass lawns and lawn care inputs expand in tandem. Hence, the role cities play in pollinator conservation and restoration becomes increasingly relevant. Socio-economic demographics likely factor into patterns of lawn care and cultivated plant diversity which affects pollinator communities in ways urban ecologists are only beginning to grasp. Here I present a study in which I analyze relationships between census data and wild bee species richness and abundance. Wild bees were sampled using pan traps and netting in lawns across a socio-economic spectrum of Metropolitan Detroit: from suburban to urban lawns. The classed aesthetics and geographies of lawn consumption play a likely role in spatial variations in the health of pollinator communities, although factors such as microclimatic conditions and surrounding floral diversity are also considered. In drawing connections between pollinator health and urban socioeconomic dynamics, these findings have potential relevant policy suggestions regarding lawn chemicals and urban planning. Overall I put forth a unique combination of methods and perspectives spanning urban ecology and political ecology to connect structured economic dynamics, individual lawn consumption patterns, and wild bee community health.

Andy Scerri (Virginia Tech)

On not taking sustainability seriously in the US's Piedmont Sprawl Belt

Scenarios analysis (Terando et al., 2013) shows that left unchecked low-density suburban sprawl in the US's Piedmont bioregion will grow by 192% by 2060. ‘Megapolitan political ecology studies equate such sprawl—a ring of asphalt—with detrimental socioecological consequences and call for more research into the regulatory, land management and cultural dimensions of the political ecology of sprawl (Gustafson et al., 2014). Mobilized by this prompt, the paper employs Portney’s (2013) 38-point index, which ranks how seriously cities take sustainability (CTSS/38). Examined are efforts by the 111 local governments that make up the 13 Piedmont Metropolitan Statistical Areas (MSAs). Portney identifies five factors influencing the ranking of the 55 largest US cities: (1) “perceived level of commitment to sustainability by public officials” (2), “contact with environmental groups”; (3) “contact with labor unions”; (4) “% of workers employed in manufacturing”, and (5) “presence of Creative Class”. Preliminary indexing of the Piedmont sprawl MSAs suggests that only cities, not counties or towns, take sustainability seriously (median CTSS score 6.5/38 against Portney’s 25.3/38). Of the Portney’s five variables exerting independent influence on the highest-ranking cities, only (5) is significant to the Piedmont outliers that do rank highly: they are ‘college towns’. The most significant factor is in fact the presence of ‘sprawl’ itself’. Further research may examine how ‘sprawl’ engenders its own ideology—suburbanism—knowledge of which may contribute to the megapolitan political ecology of sprawl.

23. Women and Gender Equity in Agriculture Practitioner Panel

Room 218

Organizers: Heather Hyden

Garrett Graddy-Lovelace

Panelists:

Allison Smith

Tiffany Bellfield

Karyn Moskowitz

Michelle Howell

Cassia Herron

24. Subversive Mobilities: Infrastructures, Boundary Objects, and Everyday Ecologies of Breaking Borders

Room 219

Organizers: Galen Murton (James Madison University)
Joel Correia (University of Arizona)

Chair: Galen Murton

Elana Zilberg (UC San Diego)

Bridging Divides: A Material Politics of River Revitalization and Other Infrastructural Ambitions in "The New Los Angeles"

In Los Angeles, the relationship between water and borders is all too concrete. Not unlike the Rio Grande at the U.S.-Mexico border, the LA River quickly became a topographic feature in the new Anglo American landscape. The imprisoning of river in a concrete straight jacket for flood control purposed consolidated its status as an internal border between . The point at which the Sixth Street Bridge crosses the the river is a particularly charged marker for this marginalization of Mexican LA (Sanchez 2004). Today this concatenation of water, concrete and steel is a renewed "site of political intention" (Boyer 2014). The bridge is slated for replacement, and the river for ecological restoration. The discursive commitments of both projects acknowledge this legacy of "spatial apartheid" (Goldberg 1990), and the need to bridge these divides. Yet, the reengineering of the river and the bridge are tied to LA's unrequited search for "World Class City" status through riverfront revitalization. Thus while these infrastructural projects are promoted as "technologies of integration" (Harvey and Knox 2012), they may serve yet again as "technologies of distantiation" (Dalakoglou and Harvey 2012). This paper examines the contentious "material politics" (Dominguez and Fogué 2013) around these "aspirational infrastructures" (Gupta 2015), and the competing claims of "neoliberal urbanization" (Smith 2002) through ecological gentrification (Peterson 2012, Wolch 2014) against those of spatial and environmental justice. The paper considers how the river and the bridge have become magnets for a politics of disagreement (Rancier 2004), and the material terrain onto which political resistance and contestation are displaced (Gupta 2013).

Joe Bryan (University of Colorado)

The Spectrum of Defense: Community Radio and Land Rights in Oaxaca, Mexico

This paper revisits the question of the commons in light of new focus on infrastructures through a discussion of community radio in southern Mexico. Many of these stations have been created as part of social movements to advocate for indigenous rights and confront privatizations. They are now presently threatened with criminalization by reforms to telecommunications laws. Community activists have responded to this threat by taking up the language of land rights to defend radio space as part of their territory. Their efforts reveal a volumetric dimension of territory that both addresses the narrow focus on land and resources that has dominated popular mobilization and posits an expanded understanding of commons.

Ramzi Tubbeh (Pennsylvania State University)

Cracks in concrete: interrogating different forms of resistance in the Colca-Majes-Siguas engineered waterscape

Narratives legitimating the creation of engineered waterscapes range from restoring a disturbed hydraulic equilibrium (Swyngedouw, 1999) to spatially and temporally balancing water supply with demand (Vera Delgado, 2007). Yet, these “harmonized” waterscapes are never neutral, but power-laden and conflict-ridden projects of statecraft (Swyngedouw, 1999, 2009). They simultaneously express statements of national integration and racialized marginalization from water use. (Tejada & Rist, 2017). The Majes-Siguas irrigation project in southwestern Peru exemplifies these tensions. A significant piece of 1970s agrarian reform, the project aimed to expand the agricultural frontier towards uninhabited tracts of desert land, creating efficient economies of scale for settler-peasants (Stensrud, 2016a). As water is diverted from the already water-stressed Colca to the Siguas basin, indigenous pastoralists and farmers in the Colca highlands build rustic micro-dams to store water and replenish aquifers while demanding payments for ecosystem services as compensation. Others have dynamited the main canal and built their own irrigation infrastructure. Still others squat in the irrigation site and plant trees to demonstrate possession (Stensrud, 2016b). In sum, concrete in hydraulic infrastructure is both a conveyor—a mechanism enabling access—and a bounding container of water—a mechanism of exclusion. And yet, marginalized water users find “cracks” in concrete, assembling “illegal” canals, claiming irrigated lands, or demanding payment for ecosystem services (Vera Delgado & Zwartveen, 2008). The project presents opportunities for interrogating these “critical engagements with the modern” (Anthias, 2016) as acts of resistance, adaptation, or reluctant performances of acceptable forms of indigeneity (as in Hale’s, 2004 indio permitido).

Carter Hunt (Penn State University) and **Larry Gorenflo** (Penn State University)

A Post-Infrastructural Political Ecology of Development and Conservation in Cartagena Bay, Colombia

With a historical peace agreement ending 50 years of civil unrest, Colombia is poised to undergo a period of unprecedented economic and infrastructure development. Two large infrastructure projects, both with transformative ecological repercussions, are at the center of development policy for Cartagena Bay. In recent decades, the bay and neighboring coral reef ecosystems have experienced extensive anthropogenic disturbance in the form of sedimentation, eutrophication and point-source pollution emanating from the Canal del Dique, a shipping canal connecting Cartagena Bay with the interior of Colombia. Despite the canal’s ecological impacts, Varadero Reef, containing the highest coral coverage in Colombia, was recently discovered under the sedimentation at the mouth of Cartagena Bay. Although the reef provides a unique opportunity to develop improved understanding of resiliency in highly threatened coral communities, the Colombian government plans to dredge Varadero to increase shipping access in response to the expansion of the Panama Canal. Current infrastructure development plans also include redirecting the Canal del Dique away from Cartagena Bay. With consequences of these infrastructure projects not well understood, concerns are high that the projects will place coral reefs in the region, and the Afro-descendent populations dependent on them, in jeopardy. This political ecological analysis showcases competing conservation and development discourses in Colombia by situating these two infrastructure projects—Varadero and the Canal del Dique—at the center of the extraction-conservation-development debate. At the expense of environmental conservation, social adaptive capacity, and livelihood protection, these projects embody a national development discourse that prioritizes capitalist expansion. As local and global anthropogenic processes accelerate the pace of social and environmental change, the competition between these conservation and development discourses is intensifying, with immediate consequences for vulnerable human populations and the ecosystems on which they depend.

Joel Correia (University of Arizona)

Stuck between the lines: Infrastructural violence, indigeneity, and disruption on the margin of a highway in Paraguay's Chaco

This paper examines the intersections of infrastructure, indigeneity, and injustice by considering how violence, environmental racism, and resistance operate through (im)material infrastructures. I draw from recent research with two Enxet indigenous communities dispossessed from the cattle ranchers where they had long lived and labored to the margin of a highway in Paraguay's Chaco. The two communities were literally hemmed into the margin, between the highway and a fence, for decades. In this paper, I consider how the highway and the fence—quintessential infrastructural elements—have been sources of violence and political possibility for the Enxet. Moreover, the paper shows how historic patterns of patrón-peon relations are sedimented in the material landscape through land dispossession and state policies that produced the violent political ecologies each community occupies. Weaving debates about infrastructural violence and political ecologies of indigeneity with an ethnographic analysis of resistance, I suggest that Enxet peoples from each community are reworking dispossession to create a territorial politics that disrupts histories of racialized exploitation that converted the Chaco into a central node of global cattle capitalism. The two cases illustrate that rights and resistance come without guarantees; whereas one community has subverted the fence and the road, the other is still stuck between the lines. My arguments draw from 16 months of ethnographic research I recently conducted with Enxet peoples in Paraguay.

25. General Session: Animals, Resources, and Conservation

Room 225

Organizers: University of Kentucky Political Ecology Working Group

Chair: University of Kentucky Political Ecology Working Group

Eric Godoy (Illinois State University)

Predators and Sympathy: The Political Ecology of Big Game Hunting

In the summer of 2015, dentist Walter Palmer shot and killed Cecil the Lion on a hunting trip. His actions sparked an outrage that led to a swift response from a range of people, companies, and organizations. Big game hunting is not a rare occurrence, so what was unique about Cecil? This paper draws from the moral sentimentalist, ecofeminist, and political ecological traditions to understand how racial and gendered politics influence the expression of sympathy for non-human animals—sometimes even more so than for other humans. I focus in particular on moral reactions to the killing of large, predatory animals that regularly harm humans. The paper has three aims. First, I sort through the terminological confusions surrounding sympathy, empathy, and 'the moral sense' that plague cross-disciplinary research on the subject. I then examine how the sport of hunting in the US developed in reaction to a perceived threat to masculinity during the presidency of Roosevelt, the repercussions of which are still evident today. Finally, I look at how cultural differences, such as exposure to the threat of predatory animals, can greatly affect attitudes of sympathy. Sympathy demands we understand lions as threatened rather than threatening. Cecil the lion rather than the surrounding farmers are portrayed as victims; predators lions rather than the farmers who were relocated by the post-colonial government of Zimbabwe, a former white settler state, to what would later be designated a protected lion reserve; the farmers whose livelihood is in direct competition with lions, predator animals who feed on livestock and quite often on people as well. What is an object of sympathy cannot be a threat and vice versa. Coded within the cultural reaction to Cecil (primarily coming from North America) then are racial and gender politics worth examining.

Dave Knieter (West Virginia University)

Disentangling the Conservation-Development Nexus: A case study analysis of the co-management of Bushbuckridge Nature Reserve, Mp

South African land reform policy attempts to address issues of empowerment and poverty through co-management conservation regimes that simultaneously seek to advance international biodiversity goals. Integrating these goals within established municipal frameworks has proven difficult in South Africa due to lack of capacity building and high levels of local distrust. A review of policies suggests that conservation goals are integrating social justice objectives into new environmental regimes yet co-management strategies predicated upon fenced enclosures offer limited socioeconomic benefits. Livelihoods are of paramount concern, especially in highly impoverished rural areas where local populations were forcibly displaced from their land during the colonial and apartheid periods. This paper uses the Bushbuckridge Nature

Reserve (BBR NR) land claim as a case study to explore how co-management regimes negotiate diverse livelihoods within heterogeneous communities, and assesses the degree to which these regimes are democratic and empowering in newly protected areas of control. Data were collected via formal and informal interviews, participatory observations, and document analysis. Here it is argued that initiatives situated in the conservation-development nexus in South Africa paradoxically (re)-produce colonial processes of dispossession, effectively increasing livelihood vulnerability by alienating historically marginalized communities from much-needed natural resources.

Russell Fielding (University of the South)

Pollution and Protests: Unlikely Partners in Cetacean Conservation

As long-lived, high trophic-level marine carnivores, toothed cetaceans from a variety of species are subject to the bioaccumulation of environmental contaminants in high concentrations. Biochemical analysis of tissue samples collected from cetaceans caught for human consumption have led researchers to the conclusion that consuming food products derived from these whaling operations often presents a clear human health risk. In addition to its compromised status as a source food for humans, whaling is a highly controversial activity within the environmental ethic of most citizens of developed nations. Anti-whaling sentiments and actions have been part of the modern environmental movement since its inception. This paper investigates ways in which the trajectories of anti-whaling environmentalism—especially in the form of targeted publicity and direct action against whaling communities—and the study of pollution in the marine environment have converged. Specifically, it considers the use of findings from contaminant research by anti-whaling activists as further evidence that whaling should cease, and their alarmingly uncritical rejection of these findings as evidence of an ecological crisis in its own right.

Cody Peterson (University of Colorado Denver)

Fabricated Forests: A Historical Political Ecology of Fuelwood Collection in South India

Much of India contains complex and ambiguous post-colonial environmental histories. While some landscapes have experienced substantial land cover change, the exact social circumstances behind those changes are often unclear. Within the international clean cookstove development discourse, it is assumed that fuelwood collection for cooking is a significant factor in the overexploitation of forest biomass. This brand of storytelling is certainly applied in India where a series of programs have long targeted household fuelwood collection activities as a way of reversing rates of deforestation. Such claims are oftentimes difficult to refute because the historical record of these landscapes is somewhat equivocal. This essay outlines the enigmatic and peculiar environmental histories of two distinct regions in South India. Here many pressures other than fuel collection have helped alter vegetation and reduce fuel availability, particularly the expansion of commercially cultivated land in recent years. Moreover, a variety of historical contingencies, such as mass displacement from dam construction and the deliberate seeding of an invasive species complicate one-dimensional or reductive explanations of landscape change. Through retrospective analysis we describe how this land use narrative, like so many other sustainable development discourses premised on ambiguous and faulty information, is repurposed and recycled uncritically in diverse settings. We argue that historical political ecologists must be prepared to grapple with these types of uncertainty within historical environmental records, while also asking why certain information remains elusive, buried and incomplete while other knowledges, accounts and explanations rise to discursive prominence.

26. General Session: Food, Community, and Farming

Room 229

Organizers: University of Kentucky Political Ecology Working Group

Chair: University of Kentucky Political Ecology Working Group

Carrie Chennault (Iowa State University)

Rethinking community food project evaluations: visceral encounters at the Washington Neighborhood Community Garden

In my dissertation fieldwork, I have participated in a multi-year statewide collaboration between Iowa State University Extension & Outreach, community gardeners, and food pantries, an effort called Growing Together. Participants communally grow, harvest, and donate fresh produce to assist local food pantries in addressing food insecurity in their communities. Evaluating Growing Together's success was important both to Extension and community partners from the outset, and initial evaluations of the project emphasized quantitative outcomes, such as

pounds of produce and hours volunteered. Channeling critical food scholars, I reflexively asked, 'what counts beyond that which can be counted?' I have approached Growing Together as an opportunity to explore everyday practices in community food collaborations, and their potential as sites for decolonization and radical relationality. Rethinking evaluation from a lens of feminist political ecology, my research employs a model, Political Ecology of the Body (PEB, Hayes-Conroy & Hayes-Conroy 2013), which analyzes political ecological relationships as simultaneously structural, epistemological, and affective. I consider the political potential of Growing Together in fostering seemingly mundane new experiences and affective food-body encounters, relations that are important for bringing decolonized worlds into being. In this paper, I draw on fieldwork at one Growing Together site, the Washington Neighborhood Community Garden in Dubuque, Iowa. Using PEB, I explore the role that community food collaborations can have in the transformation of agricultural and food relations, while also calling attention to the anti-oppression and anti-racism work needed to facilitate these transformations.

Jacques Fils Pierre (UFRRJ [The Federal Rural University of Rio de Janeiro] UK Intern at the UK Horticulture Research South Farm)

Characterization of family Farming in Haiti: Food Security Challenges and Sustainable Agriculture Solutions.

According to Chaves and Campos (2012), Family farming is an important ally in the implementation of sustainable rural development, as a productive and social segment, as it is an essential element both for its internal consumption and the food security of the population, as well as for the occupation and generation of work in the rural environment, so that families do not leave their rural properties to live in cities. The purpose of this study is to make a diagnosis of family farming in Haiti, and analyze if the productive practices adopted by the farmers in this region are helping to promote the development of family farming with sustainability. Methodology: This is an exploratory-descriptive study with a qualitative approach, using field research. The data were obtained through direct observation of the rural worker in his natural work environment. photos, recording, filming and semi-structured interviews were used to obtain data. Data collection was carried out from May 18 till June 15, 2017, through interviews with a sample of 44 rural producers from the the region of Bayonnais,Haiti.Findings: After the analysis, it was verified, Family farming in this region is of subsistence. Most of them have low levels of education and low family incomes, with no technical assistance from the authorities.In addition, Considering the data obtained in the research, it can be said that the productive practices adopted by family farmers in Bayonnais do not yet contribute to promote and develop family farming with sustainability.Conclusion & Significance: Recommendations are made for establishing an outreach program to accompany small farmers on the different problems faced during agricultural production based on good public policy to develop family farming in Haiti.empower the Family Farming sector can used as a strategic role in fighting hunger in Haiti and creating self-sufficient farmers in rural Haitian areas.

Wayne Teel (James Madison University)

Unlocking wider use of biochar for agriculture and carbon sequestration.

The use of biochar, a lightweight, highly porous form of charcoal, in agriculture derives from the discovery of its widespread use in the pre-Columbian Amazon as an amendment to improve notoriously infertile tropical soils. More recent work on biochar shows it has the capability to modify low quality soils nearly everywhere, increasing nutrient holding capacity, water holding capacity, improving tilth and lowering the need for inputs like fertilizer. At the same time it sequesters photosynthetic carbon for hundreds to thousands of years, helping to drawdown atmospheric carbon dioxide while improving agricultural productivity. Yet despite these documented positive aspects widespread adoption of biochar's use on farms remains elusive. While making biochar is an exothermic process that can provide energy for tasks like kiln drying wood or producing electricity from biogas, companies are reluctant to invest in the equipment to do this without a proven market. Farmers, who are notoriously risk averse, are reluctant to invest in biochar without broader scale demonstration of its ecological effectiveness and a low cost supply. This dilemma also has political and economic roots. The reluctance of politicians to fund research in technologies that can counter global warming leaves the private sector holding the economic risk from investing in a novel agricultural amendment, even one with deep historic evidence of efficacy. Solving this problem through timely intervention in public and private partnerships is the key to the use of biochar as a way to improve agro-ecological stability and allow farmers to participate as primary players in reversing climate change.

Matthew McKay (University of Florida)

Changing Economic Geography of Southern New England's "Tobacco Valley": Surviving in the 21st Century

The specific suburban/exurban municipalities of the prime agricultural lands of the Connecticut River Valley, at one time, entailed large-scale tobacco crop production as a substantial agricultural activity. "Tobacco Valley" encompassed open-field and "shade" tobacco farming that was dominant throughout much of the 20th Century, given that this type of tobacco had prominence on the rural landscape. The uniqueness of tobacco production in this area of New England was due to the soil conditions, topography, and microclimatic summer seasonal conditions that provided an ideal growing environment for the major inputs utilized to manufacture high quality cigars. The tobacco inputs from the

Connecticut River Valley provided wrappers and binders for finished cigars. Consequently, the inputs toward cigar manufacturing were transported elsewhere for final assembly in the cigar commodity chain (given that filler components would be produced in other tobacco-growing regions). However, property owners of tobacco (and other) farms witnessed falling revenues and profits during the mid-to-latter part of the 20th Century, thereby necessitating a transition of land toward becoming increasingly suburbanized. Yet, "Tobacco Valley" in New England has had an important role on the region's economic geography, and certainly tobacco production has contributed to and been influenced by globalization, in addition to changing consumption patterns. With the decline of tobacco production after the 1960's at this particular spatial scale, despite the continued niche market being fulfilled at yet a smaller scale, warrants further investigation so as to better understand the changing land use patterns that have ensued.

Jack Braunstein

Making Purity in Northern Vermont's Maple Sugar Industry

Maple sugaring, the process of producing concentrated sugar or syrup from the sap of maple trees, is both an iconic cultural practice and an important agricultural industry in the U.S. state of Vermont. Maple producers, boosters and scientists present the sweetener as a wholesome alternative to common sweeteners--natural, grounded in place and, always, 'pure.' Political ecologists have long been committed to better understanding what animates our understandings of what is and is not 'natural' (eg. Kosek 2006), and part of that responsibility involves tracking who consistently stands to benefit from these visions of nature, and who is left out (Robbins 2014). By interrogating narratives of nature with a focus on power-laden social and historical processes and the material qualities of things, political ecology has shown how naturalness emerges as a narrative through networks of uneven power relations between people, spaces and non-human life. In this paper, I engage the techniques, or "arts of noticing" (Tsing 2016) of these political ecologists to interrogate the social and material history of maple syrup production in Vermont. What is 'Pure Maple Syrup'? How did maple syrup become 'Pure Maple Syrup'? Who benefits and who is erased in the production of purity in the maple syrup industry? What kind of labor takes place to produce and define the meaning of pure maple? I argue here that the meaning of 'pure maple syrup' as a material, political and social thing emerged from a complex, far-reaching set of narratives that brush against the length of Vermont's history. I trace the purity politics of Vermont syrup from the dusk of American slavery to the shadow of the eugenics movement, and I argue that the story of 'pure maple syrup' is far from over. I will also share stories from those who are actively involved in the definition, re-negotiation and mobilization of purity and discuss the possibility of grappling with the compromised social history of 'pure' maple syrup.

Session Block 5

12:30pm – 2:10pm

19. 'Green-washing' Settler Colonialism: Dispossession, Sustainability, and Natural Resource Management (Session II)

Room 105

Organizers: Sara Salazar Hughes (Mount Holyoke College)

Chair: Sara Salazar Hughes

Adam Fix (SUNY College of Environmental Science and Forestry)

Adherentes and Allies: Settler Colonialism and Indigenous Solidarity Movements in New York and Chiapas

Indigenous social movements often receive political support from non-Indigenous “allies” (Manno & Chawhdaguywhawdoes, 2008; Hansen & Rossen, 2007) and progressive non-governmental organizations (Swords 2007). These alliances, while frequently providing critical aid (Zedler, 2016), are also regularly fraught with racial and cultural tensions (Esteva, Babones, & Babicky, 2013; Fix, 2014). It begs the question: is there a role for settler colonial “allies” within Indigenous movements?

This paper engages with this fundamental question by analyzing two disparate cases: one in New York, where Haudenosaunee collaborate with the self-proclaimed “ally” groups Neighbors of Onondaga Nation (“NOON”) and Strengthening Haudenosaunee-American Relationships through Education (“SHARE”); and one in Chiapas, Mexico, where the Zapatista movement has developed networks of adherentes including the Mexico Solidarity Network and Unitierra. This paper utilizes oral history interviews conducted with a number of activists from each case to develop an understanding of Indigenous/non-Indigenous collaboration in North American (Turtle Island) environmental solidarity movements.

Elizabeth Shoffner (University of Washington)

Settler Environmentalism and Conservation Governance along the Río Uruguay

The region bordering the Río Uruguay, in the province of Misiones, Argentina has become home to four generations of cross-border migrants from Brazil known as “colonos”. The settlement and agricultural practices of these colonos have shifted and limited indigenous Mbya Guarani territorial possibilities and occupancy patterns by fundamentally constricting their mobility and semi-nomadic practices of environmental management, while contributing to a rapid deforestation of the native forest known as selva paranaense. Concerns over protecting and preserving what remains of the “virgin” selva paranaense in Misiones have been heightened by a second, gentrifying wave of settlement by “porteños”: young, neo-rural inhabitants able to purchase land cheaply and make use of urban connections and education in order to access alternative “ecological” markets and salaried jobs in tourism and education. Though porteños contribute to increasing pressures on local ecosystems, these more recent inhabitants are often particularly invested and active in environmental causes. In 2012 a tract of land within the Yabotí Biosphere Reserve in Misiones was sold to an English conservation NGO by a large landowner unable to profit from timber extraction due to conflicts with the Mbya Guarani occupants. After a lengthy and tense negotiation process, this land was transferred to the three Mbya Guarani communities who reside there. Ongoing conflicts between porteño environmentalists and the “multicultural alliance” formed through this land transfer have revolved around an access road that would bisect state conservation land in order to reach the Mbya Guarani communities. Based on preliminary dissertation fieldwork, I examine the conditions of possibility for a conflict between settler “environmentalists” and national and international conservation NGOs over defining both indigenous access and the terms of conservation in the Yabotí Biosphere Reserve.

27. Scholar Activist Panel: Art and Political Ecology

Room 119

Organizers: University of Kentucky Political Ecology Working Group

Panelists:

John Sabraw (Ohio University)

Tammy Clemons (University of Kentucky)

28. Unsettling Political Ecology: Dialogues on the Legacies of Trauma

Room 129

Organizers: Alex Moulton (Clark University)

Stepha Velednitsky (University of Wisconsin- Madison)

Chair: Alex Moulton and Stepha Velednitsky

Discussant: Carolyn Finney (University of Kentucky)

Brittany Wheeler (Clark University)

Body, Place, Environment: The Meeting of Historical and Future Injustice

This paper aims to reflect upon the temporal dimensions of moral geography, utilizing repatriation and reparation as both guiding principles and legal processes. It asks whether there is a relationship between historical incidences of 'taking things and leaving' and contemporary incidences of 'watching situations and abstaining,' bringing together reflections on cultural and environmental injustice, primarily to gather thoughts on climate migration. Is the halting or unbridled political support for historical justice, reparation and restitution, or apology connected to the way anticipatory futures are approached, regulated, or ignored? In what way do repatriation and reparation help us process complex issues of causality that unfold in more than one timescale? In pursuit of thoughtful answers, this paper explores several contemporary forms of legal redress (and their categorized nature), the dimensions of grounded and more ontological conceptions of spatial justice, and the lessons in considering past bodies 'out of place' and future bodies that may become so.

Nicholas Padilla (Western Michigan University)

Indigenous natures, trauma, and enduring in Cauca, Colombia

Bernard C. Perley (2014) has argued that traumas – historical and contemporary – mark the lives of indigenous peoples. Indeed, Colombia's indigenous communities frequently identify their ability to simply 'endure' over more than five centuries of violence, ethnocide, and marginalization as a central to their particular indigenities. Indigenous peoples navigate these traumas and the oppressions of the colonial present to practice their identities on their own terms. Yet, the interconnections between indigeneity, trauma, and nature remain opaque. Indigenous lands are pockmarked with traumas – industrial sugarcane farms, large-scale gold mines, hydroelectric dams, and continued territorial dispossessions in Cauca – and the traumas of these natures pervade indigenous livelihoods. In the paper, I ask where do nature's traumas and contemporary indigenous identities and practices intersect among Cauca's indigenous peoples? I draw upon 'critical indigeneity' to argue that trauma pervades indigenous lives and natures, and, more importantly, their responses to trauma are strategies to practice their indigenous identities on their own terms. Drawing on nearly one year of ethnographic fieldwork in Cauca, I use everyday practices of cleansing territory to demonstrate how traumas are acknowledged, remembered, and incorporated into Cauca's indigenities. I argue indigenous peoples' claims and efforts to cleanse Mother Nature are one example of the daily practices that demonstrate how indigenous natures are not dead. Rather, they are enduring.

Courtney Cook (University of Texas at Austin)

Daddy Lessons: An auto-ethnography of Haunted Feminist Becomings

This auto-ethnographic inquiry is a personal, historical, and fragmented journeying through violent inheritances that began as an attempt to know how violence-masculinity entangle with personal and political origins in pursuit of an anti-white feminist pedagogy. This journey of memory work ended with a diagnosis of PTSD; an embodied manifestation of violent-masculine inheritances. As the progeny of criminal kin I'm haunted by thieves, invaders and by their victims' ghosts, childrens' children. The personal is political and pedagogical in this work because critical pedagogy remains in danger of rendering the triangulations of settler colonialism <> heteropatriarchy <> capitalism

indiscernible; a triangulation that has been rearticulated to conceal masculinity, whiteness, and the violences they harvest. These histories demand attunement to the ethics involved in teaching histories of violence to pre-service teachers. Violences were scripted and refined by settlers, through the creation and destruction of “the ownable and murderable slave” (Arvill, Tuck, & Morrill, 2015); through pasts I was taught to forget. Mythologies sanctioned and concealed genocidal common senses within enduring structures (Wolfe, 1999) that continue to endorse whiteness as justifiable violence and masculine parameters as borders not to be fucked with. Or else. Or else begets my body, my refusal of settler narratives, my spiritual laboring through past worlds. Personal ghosts find fellowship in a cosmic community of inheritances in this séance conjuring apparitions – some whose stories I want to hear more fully and others whose blood-stained hands I refuse to scrub clean. Asking how violence-masculinity persists in contemporary projects of extinction and erasure; how my knowledge of myself as [potential] feminist, educator, ally, are invaded, I aspire towards pedagogical practices that refuse whitewashed marketplace feminism and violent-masculine common-senses presently in order to refuse to threats of or else, out of a concern for justice (Gordon, 1997, p. 60).

29. Political Ecologies of Urban Resilience to Extreme Weather Events

Room 205

Organizers: Katinka Wijsman (New School for Social Research)
Melissa Davidson (Arizona State University)
Erin Friedman (City University of New York)

Chair: University of Kentucky Political Ecology Working Group

Katinka Wijsman (The New School) and Bart Orr (The New School)

Racist Seawalls? Confronting challenges of transdisciplinary climate adaptation planning in environmental justice settings

The complex and multi-faceted nature of urban environmental issues caused by climate change has led to increasing calls for inter- or trans-disciplinary approaches in tackling these challenges. The interplay of ecological, political, social, and historical concerns that underlie these issues may make inter- or trans-disciplinarity not only preferable but a prerequisite for research and community engagement. As some have noted trans-disciplinarity is rapidly becoming mainstream in environmental research literature. However, despite best intentions, trans-disciplinary approaches present numerous challenges both theoretically and in practice, as tensions between differing ontologies, epistemologies, and methodological traditions persist throughout the research process, while researchers may be hesitant to address or acknowledge such differences to avoid being perceived as disrupting a sense of cooperation and compromise.

This paper presents a study of a self-described transdisciplinary research network’s process of community engagement and participatory research done in partnership with a neighborhood environmental justice organization. The research network, organized around the theme of resilience to extreme events, comprises doctoral students, post-doctoral fellows, and university professors drawn from disciplines in both the environmental and social sciences. Through over twenty five interviews with researchers from within the network, local community members, as well as leadership and staff from the environmental justice organization, we highlight the challenges of moving trans-disciplinarity from theory to practice in the context of local community engagement and efforts towards knowledge co-production. In particular, we look at how the research network addresses (or fails to address) issues around race, class, historical context, and ideas of expertise.

Mathieu Feagan (Arizona State University)

Tensions in the science and politics of data visualization: situating urban resilience to climate change

This paper looks at the science and politics of data visualization in the case of urban resilience to extreme weather events, exploring ways that visualizing data might help or hinder efforts to steer urbanization along more sustainable pathways. On the one hand, data visualization has played a key role within the wider process of making people and extra-human nature legible -- and therefore manageable -- in the interests of state-led improvement schemes, within capitalism’s ongoing development. In this context, data visualization could be seen as part of what has allowed the state and capital to establish the particular world-ecological regime driving climate change in the first place. On the other hand, visualizing data is a critical exercise in making sense of the world from a particular standpoint, and in the current context of more intense and frequent extreme weather events, various forms of data visualization could be said to have helped people better understand the threats they face and how to build greater anticipatory capacity for withstanding future climate events. The purpose of this presentation, then, is to offer different frames for making sense of the role of data visualization in supporting researcher-practitioner- community alliances that build community resilience and sustainability. Through a discussion of some of the complexities and tensions in understanding the

relationship between data visualization and urban development, this paper offers key principles for engaging with data visualization in ways that challenge state power and offer alternatives to capitalist development, while supporting community resilience to extreme weather and the forces driving climate change.

Ly Quoc Dang (Chiang Mai University)

Urban Floods in Can Tho City, Vietnam: Vulnerability and Resilience among women

Cities throughout Asia are growing rapidly and are of increasing importance to those countries' development trajectories. Many of these cities are highly vulnerable, however, to the risks posed by climate change, particularly floods, because of their geographic location, limited governance capacity, and uncurbed urbanisation. Vietnamese cities, in particular, are vulnerable to the threat of climate change. The country was ranked 7th in the 2016 Global Climate Risk Index. While scholars such as Garschagen have conducted extensive research on the governance of flooding in Can Tho, there exists a gap in this research: it has hardly touched on the gendered dimensions of flood vulnerability and governance at the community and household level. Using a feminist political ecology framework and the concept of vulnerability, this research seeks to address this gap, specifically by identifying women's perceptions of and organisation in response to flood risk events in urban communities. Based on fieldwork in four different urban communities, this study finds that women have a hard time adapting to flood events, which affect their incomes and businesses. Resilience planning still fails to involve women's organisations in climate actions, and city and national policies have difficulty seeing women's resilience in the face of changing floods. Urban women are differentially vulnerable due to social and economic status and geographic location. Climate resilience partnerships have to involve women's organisations in order to target their benefits towards women. This study used multiple methods to gather data, including participant observation, ethnography, field trip observation, and a review of the literature and documents on flooding in Can Tho and Vietnam.

30. Women and Gender Equity in Agriculture

Room 218

Organizers: Garrett Graddy-Lovelace (American University)

Padini Nirmal (Clark University)

Chair: Veronica Limeberry (American University)

Discussant: Christine Smith

Jean Eells (independent researcher)

Owning the land is not enough

An overlooked aspect of women's role in agriculture is women's landownership and delivery of conservation services. Agency programs and media focus on women farmers, not on women who own land -- the rightful decisionmakers about land management to protect and sustain the people and wildlife who depend upon it. In the Midwest USA women own or co-own half of the farmland, but often have little say in how the land is treated when they are non-operators -- not dissimilar to international women farmer's experiences without land. This was described in work (Eells) exposing discrimination by omission in the agricultural conservation community.

As much as 60 percent of Midwest farmland owners rent their land to farmer/producers who have higher than expected power over male and female owners in determining how the land is managed. Non-operator women farmland owners, who we see have higher affinities for land protection, must be empowered with appropriate access to conservation programs and strategies for implementation. The importance of Midwestern farmland soils to climate change and food provision demands they be brought within the scope of research into gender equity in agriculture.

Inequality in service provision is the focus of further research and curriculum development that puts women in a peer-to-peer learning environment, empowering them to act to protect their land. Women non-operating landowners are responding well to changes in conservation service delivery. New research examines the next generation of women inheriting farmland and reaching women owners in large urban areas disconnected from agriculture.

Eric Mogren (Northern Illinois University)

Negotiating power on the farm: Progressive era farm women and gender dynamics of agricultural reform in the early twentieth century

Feminism, at its core, is an inquiry about power – who exercises it, who does not, and how we understand those power relationships. Part of that broad analysis is also about the ways in which people assert autonomy within dominant gender and sexual social constructions. American agriculture has always been an occupation marked by gendered power assumptions. During much of our past, men generally exercised agricultural activities, including such essential ones as property ownership, market interaction, capital acquisition and manipulation, and political power. Yet, we also know that day-to-day agricultural lives relied upon contributions from men and women to achieve their personal goals.

Progressive-era agricultural reformers reinforced these dominant gender expectations in identifying the limitations of rural Americans' lives and in prescribing solutions. The Cooperative Extension Service (created in 1915) highlighted conflicting approaches about how to best address the economic and social limitations of farm families. Rural people usually argued that they simply needed greater financial returns for their products. Extension agents and home economists, trained to approach rural problems as social science issues, asserted that improved living standards on farms were rooted in separation of farm production from domestic spheres so that rural woman could devote their full energies to household management and promoting the gendered domestic expectations of the era. At the center of this tension were women who accepted – even celebrated – dominant gender assumptions but who also sought to assert control over their circumstances within those expectations. This paper will explore the ways in which farm women navigated the agricultural reform policies and energies of the Progressive era. While they embraced the prevailing gender norms of the period, farm women nevertheless sought to assert power to influence both the economic sphere, but also the social programs designed to reshape and “modernize” rural America.

Padini Nirmal (Clark University)

Exploring Agrarian Feminist Resistance Among the Adivasis of Attappady

Drawing from my ethnographic research among three Adivasi (or indigenous peoples) communities in Attappady, Kerala, India, I will explore the complexities of agrarian feminism as a modality of resistance. Attappady has been the site of resistance against land grabbing, or the taking of Adivasi lands by rural settlers, by the state and by private companies. This resistance has taken many forms over the years, but its most recognizable forms have been seen through a patriarchal lens that centers men and masculinist discourses about land, and land alienation. However, there has been a growing recognition of female presence and activism, especially within the last six years which have witnessed an exponential rise in what is seen as problems within women's domains— such as neonatal and infant malnutrition, maternal and infant mortality, and alcohol-related deaths, especially among Adivasi men. By situating these problems as effects of land loss and land alienation within an intersectional and decolonial feminist lens, I will explore various discourses about resistance, and its modalities as responses to such fundamental changes in Adivasis ancestral, rural landscapes. In my talk, I will weave together snippets of various strategies and modes of resistance employed by diverse groups of (those identifying as) women to bring attention to various problems associated with systematic and structural land alienation and land loss. I take a multi-scalar approach in doing so, by drawing from organized, collective, invisible, everyday, individual and emergent forms of resistance. For instance, I will be drawing on particular resistance events organized by the 'Thaikula Sangam' (the mothers' committee), as well as from particular narrative interviews with its members. At the same time, I will also be drawing from narrative interviews with rural-extension officers working for the Integrated Tribal Development Program, forest watchers working for the Forest Department, teachers, land rights activists, NGO workers and rural settler activists. Together, I hope to not only highlight the agentive, activist role of Adivasi women as those who imagine sovereign futures of their own making, but to also bring attention to the complexities of agrarian feminism in Attappady as it operates within a communist context (in the state of Kerala) and within a larger socialist-democratic and often neoliberal context within India.

Veronica Limeberry and Garrett Graddy-Lovelace (American University)

Femming the Farm? Agrarian Feminism and the Limits/Goal of Gender Equity through Agricultural Policy

Globally the visibility of gender and gender equity in agriculture has increased. No longer merely farmers' wives, women grace the covers of Farm Bureau brochures and FAO mission statements. Agricultural support policies target women growers, and international food security organizations boast of female leadership. Yet, how does this rhetoric--and subsequent policy--translate to the lived experiences of the women and men working in the fields themselves? To what degree do these laudable discourses reflect or impact reality? Given civil rights lawsuits alleging USDA gender discrimination and the lack of implementation of women's land tenure in India, it becomes clear that authentic gender equity remains elusive. Furthermore, those who may achieve it tend to already be dominant-class, landowning women, benefitting from racialized hierarchies and gender norms. This paper emerges from preliminary research on the tensions between the discourse and materiality of gender equity policies in the US, India, Norway, and Peru and asks: how and where does gender-equity rhetoric translate into

actual agricultural practices, land tenure, and agency? Which voices and faces are represented in gender equity agriculture policies and programs, and who is left out? How is agrarian feminism being articulated, advocated, and actualized across these various countries, and what are the notable parallels?

24. Subversive Mobilities: Infrastructures, Boundary Objects, and Everyday Ecologies of Breaking Borders

Room 219

Organizers: Galen Murton (James Madison University)
Joel Correia (University of Arizona)

Chair: Joel Correia

Brent Sturlaugson (University of Kentucky)

Handpicked: Migrant Farmworker Housing and the Infrastructure of Food

Migrant farmworker housing has been the subject of much architectural speculation, yet the realization of these projects remains few. In the 1990s, Bryan Bell and Victoria Ballard Bell established Design Corps to promote the value of design in rethinking the migrant farmworker housing problem. Speculation into other aspects of the food system are also present in architectural history, but the implementation of these ideas is even fewer. In the 1960s, R. Buckminster Fuller outlined the agenda of the “design scientist” using an illustration of a reimagined food infrastructure. More recently, architectural historians, including Meredith TenHoor, have analyzed the infrastructure of food and its relationship to labor, extending an appeal to contemporary designers to account for the representation of labor in logistical drawings.

Building on the intellectual tradition of architects reimagining the landscape of food production, this paper documents the design research of students in an undergraduate architecture studio. Operatively, the studio began with a pile of fruit that was grown in the United States and was picked by hand; thus, each piece of fruit embodied a specific geography of production, both proximate and remote. Students followed their fruit up the supply chain to find its place on a farm, creating a map that represented the entangled geography of fruit sold at the local supermarket. From this map, students selected sites for intervention at key points of production, exchange, or consumption. Through historical research and precedent analysis, students designed a program that combined housing for migrant farmworkers and infrastructure to facilitate alternative futures.

Ciara Segura (University of Texas at Austin)

On the spatial politics of environmental buffer zones

In October 2016, DPR passed statewide regulations that prevent the application of restricted-use pesticides within a quarter mile of schools during school hours and establish a complex reporting and notification system between growers, schools, and parents. Tens of thousands of children - most of whom are children of color - attend schools located within a quarter mile of farms, and many activists and community members argue these buffer zones do not sufficiently protect children from the risks of airborne pesticide drift. Conversely, growers and private industry are concerned that the regulations will harm farming profits by encroaching on land that would otherwise be put to productive work. This debate over the appropriate scope of environmental regulations is one that is increasingly typical of regions located at the agricultural/urban interface where farms and neighborhoods meet. How are different spatialities such as scale, place, positionality, networks, and mobility reflected in the moral and safety considerations of school buffer zones? How do different stakeholders invoke the geographies of ag-urban interfaces to expand or limited regulatory oversight? I argue that the physical and political geographies of ag-urban interfaces limit the scope of environmental protection residents can demand from the State, and for this reason, local activists and community residents invoke multiple spatialities in addition to scale in their mobilization against pesticide exposure. Other have explored how rural agricultural communities deploy scale-based tactics to demand stronger environmental protections from the state (Brown and Guthman, 2016; Harrison 2006, 2008, 2011; Guthman 2017) and how the state’s approach to risk assessment and mitigation is spatialized. I argue that forces beyond human control such as chemical composition, weather, and the physical landscape itself complicate how people may hold farms accountable for the risks of exposure and shape the conditions of possibility for stronger environmental protections.

Kyle Wicks (James Madison University)

Speaking for Those Without a Voice: Environmental Degradation Along the U.S.-Mexico Border

Border walls have been the subject of contentious debate for the past few decades. In addition to geopolitical tensions, border walls are increasingly generating new environmental challenges. The U.S.-Mexico border is an excellent example of such challenges because there are large expanses of biodiverse ecosystems which are being dramatically altered from the construction of border walls. This region has been affected not only by physical infrastructure associated with border walls, but also legislation affecting human migration and transportation of goods across the border. In this paper I will explore the unintended consequences of the U.S.-Mexico border wall on the region's ecosystems, specifically on wildlife. For example, the Sonoran pronghorn's habitat has been effectively cut in half by the construction of border walls in this region, and the jaguar has similarly seen its habitat fragmented. These species are just two examples of wildlife affected by the U.S.-Mexico border wall, and just a small portion of wildlife affected by border walls elsewhere in the world. As such, this paper focuses on the political ecology of border walls. In doing so, I seek to understand the effects the U.S.-Mexico border wall has on wildlife and to what degree such policy changes influence ecosystems.

Manuel Galaviz (University of Texas at Austin)

Música, Baile, y Abrazos: Disrupting Border Security Infrastructure at Border Field State Park

Since the 1990s, San Diego County in California has been a primary location in the United States where border enforcement measures have proliferated and been enforced via militarized strategies. In this paper, I explore how border fences, like oil pipelines and freeways, are not just material objects but are integral components of the social-cultural and political worlds that surround them. I present an ethnographic analysis of two events, "The Fandango Fronterizo" and "Opening the Door of Hope" that take place annually at Border Field State Park, a state park of California located in San Diego County where the U.S. border fence and the Tijuana River meet the Pacific Ocean. For the purpose of this paper, I define the border's militarized security infrastructure projects as constituting a technology and practice of surveillance that is physically shaped by the policies aimed to systematically curb Mexican and global migratory flows into the United States. The border security infrastructure projects located at Border Field State Park are intended to deter and prevent Mexican human mobility between the two nation-states. Yet, the "Fandango Fronterizo" and "Opening the Door of Hope" offer a spatial temporal dimension that suspend the intended qualities of border security infrastructure projects in San Diego County and Tijuana, Mexico. I demonstrate that despite border security infrastructure projects, such as border fences, floodlights, infrared cameras, drones, border patrol personnel, artists and activists are publicly transforming the border from a space of separation and militarized surveillance to a temporary space of congregation.

Galen Murton (James Madison University)

Crossing borders within: Identity, mobility, and politics across a Himalayan borderzone

Unlike the rugged mountain landscapes that characterize the majority of the Nepal-China borderlands, the state-line where Nepal's Mustang district meets China's Tibet Autonomous Region resembles an alpine plain more typical of the expansive Tibetan plateau than the rugged Nepal Himalaya. The border lies atop a mountain pass, known as the Kora La, that has for centuries served as a main corridor for trans-Himalayan caravan trade as well as a high mountain landscape for agro-pastoralist practices. However, in contrast to most other Nepal-China frontier areas, today a barbed-wire fence runs incongruously across the Kora La, marking and controlling the official border at nearly 4000 meters in elevation, and a massive new Chinese customs house is now under construction as well.

This paper analyzes the spatial operations of power in the Mustang-Tibet borderlands to argue that border regimes are made, maintained, and performed as territorial controls over social connections, cultural practices, and state space. To make this argument, I look at the ways that landscapes are transformed into state territories and examine the Mustang-Tibet border at two different registers. First, I look at where the border lies physically as a marker of state territory between Nepal and China, and why it stands where it lies today. Second, I analyze how the border lies socially and culturally for borderland populations, and ask how socio-cultural considerations shape borderland lives between China and Nepal. Paying close attention to the ethnographic terms (Megoran 2006) upon which the Mustang-Tibet border has taken shape and continues to be managed, I use a mobility-containment framework to write a border biography about (re)materializations of this trans-state space as well as the ways in which the border enables particular terms of mobility for some while defining different rules of containment for others.

31. General Session: Controversies and Challenges of Extractive Technologies

Room 225

Organizers: University of Kentucky Political Ecology Working Group

Chair: University of Kentucky Political Ecology Working Group

Aron Massey (West Virginia University)

Almost Level, West Virginia: An Extended Case Methodology of Political Ecologies of Mountaintop Removal Coal Mining

Mountaintop removal coal mining continues to be one of the most controversial forms of resource extraction utilized in North America today. It is most prevalent in central Appalachia, where the mantra of "coal is king" has long been eschewed by the politically embedded coal industry. However, many residents of Appalachia challenge this mining method and the myriad environmental and social concerns that accompany its use through the formation of protest groups. These anti-MTR groups deploy nuanced spatial and scalar tactics that reflect their environmental imaginaries that are appropriately examined through a lens of political ecology. This paper builds upon a previous research project that evaluated these groups in the coalfields of southern West Virginia and their strategies nearly a decade ago. An extended case methodology, based on Buroway (1998), is applied to this most recent examination of these protest groups to track changes in tactics since the last round of fieldwork. Where possible, the same activists and protest groups, are interviewed through various qualitative methods to reveal how their struggle against environmental degradation and exploitation has evolved and how these tactics can be evaluated through new political ecologies that have recently emerged.

William Hunter (National Park Service)

Edwight Mines: Reconciling Material Space, Spaces of Representation and Representations of Space on Coal River

To investigate emancipatory political movements that challenge regressive environmental politics, this paper will examine the way in which representations of space were deployed by a collation of activist scholars and scholar activists to contest environmental injustice on Coal River in Raleigh County, West Virginia. Specifically, this paper will examine how communities of practice highlighted the environmental injustices associated with the location of Marsh Fork Elementary below a large coal slurry impoundment as representative of the larger ecological and social catastrophe wrought by the coal complex on this once remote valley. Yet, although political ecology is a narrative of explanation, the role of capital, bio-power and material processes of ecological degradation that produced this landscape, and specifically the role of generations of human beings in its production, was unexamined, or even obscured by this representation. Through detailed observation and description of abandoned landscapes surrounding the school, this paper demands that we confront what remains of these ruins by engaging with their specific history, their relationship to nature, and their transitoriness as a fundamental to the way in which the extractive economy produces landscapes and places in the Kanawha Coal Field and beyond. By examining the material process of coal extraction at the mining communities once adjacent to the school, and mapping the apparatus of production and degradation through time, this paper explains the material circumstances that produced the relationship of Marsh Fork Elementary School to the slurry impoundment, while complicating the epistemology of its representation.

David Oonk (University of Colorado)

Fracking and Technological Momentum: Unconventional Oil and Gas Development in Colorado

Unconventional oil and gas development across the United States, and in particular horizontal drilling and hydraulic fracturing has largely contributed to a growing and robust energy production industry in the United States. The boom in the early twenty-first century was driven by the advent of this technology, one where its distributed production across suburban and rural communities created unique opportunities and challenges. Accompanying the economic benefits have been numerous conflicts with front-line communities and environmentalists over questions over its impact public health, local environments, infrastructure, and climate. This study takes a critical lens in understanding the technology of horizontal drilling and fracking through the science and technology studies literature (STS). Scholars in STS have, at times, described our relationship and use of technology as deterministic, where the efficacy of human decision-making is dwarfed by the technology, but the relationship with and use of this particular technology is not wholly deterministic, but rather it generates a 'momentum' whereby its adoption and use creates a positive feedback which incentivizes expanding its use. This momentum is generated through distinct technological features, economic practices, policy-decisions, and social choices. At the meso-scale this momentum can be seen as the oil and

gas industry enters a new region; one 'proven' well quickly snowballs into hundreds and thousands over a few years. This study, by critically analyzing this industry through an STS lens, seeks to understand this emerging industry's practices and anticipate its future plans and resulting conflicts with communities. The implication is that perhaps the conflicts we have already witnessed across the United States are only the beginning, and far more profound challenges lie ahead.

32. Louisville as a Living Lab: Thinking Ecologically and Politically about our Urban World

Room 229

Organizers: Allison Smith (Metro Louisville)
Angela Storey (University of Louisville)

Chair: Angela Storey

Allison Smith (Louisville Metro Government)

Bringing People in: Community engagement in Brownfields redevelopment

Brownfields and their resulting contamination are ubiquitous in modern cities and can have a significant impact on a community's health, economy, and quality of place. Issues of equity and disproportionate impact are at play not only in the siting of the industries that result in brownfields but also in the remediation and redevelopment process of these sites. How do community values and priorities affect the end use of former brownfields? What benefits accrue when residents are part of the process? To what extent can community members influence large-scale development projects on former brownfields?

When dealing with complex environmental and economic issues that are presented by these projects, many municipalities rely solely on experts, often leaving neighborhood residents out of the process. Louisville Metro Government (LMG) has been involved in the redevelopment of both large- and small-scale brownfields and, over time, has adopted an approach to these projects that is more community driven. This process has not only increased buy-in for the proposed projects but also raised awareness of the relationship between economic development, the environment, and quality of life while building neighborhood capacity.

As Louisville and other cities work to reverse the damage done by historical environmental injustices, federal policies such as Redlining, and decades of disinvestment, brownfields remediation and redevelopment offer one avenue to empower disenfranchised communities while improving the environment.

In this paper, I examine LMG's work to expand community engagement on brownfields remediation, particularly exploring the role of innovative collaborations and attention to local histories of political and urban ecological marginalization.

Lauren Heberle (University of Louisville)

Measuring Community Benefits of Brownfield Redevelopment: Louisville, KY Pilot Study

Most research and decision making surrounding brownfields redevelopment focuses on the economic outcomes of the end-uses that are measured using traditional cost benefit analysis and do not necessarily specify to whom costs and benefits accrue. In addition, what counts as "community benefits" varies depending on priorities of those doing the measuring. Funded under the EPA Brownfields Technical Assistance and Research (k)6 program, we are developing a toolkit to empower communities to project and track community benefits associated with brownfield redevelopment and clean-up. The project proposes to develop models and data collection methods that will better specify to whom benefits accrue and systematically document benefits not normally captured in traditional cost benefit economic analysis at the neighborhood level.

The Russell Neighborhood in Louisville, KY serves as a pilot for this research and toolkit development. Data collection for this project combines publically available, geo-coded data with hyper-local data collected on the ground. This paper will discuss testing the mobile application to be used for data collection in the field, preliminary results, and next steps in the development of our toolkit.

Haileigh Arnold (University of Louisville)

The Influence of Policy and Local Organizations on Beekeepers in Louisville, Kentucky

When one thinks of the domestication of animals, what comes to mind? The answer might be pets, livestock, or garden plants, but what about an insect? In fact the only insect that could be considered domesticated is the honeybee. Humans have a long history of the practice of beekeeping, which is essentially breeding, housing, manipulating, and harvesting from honeybees. The purpose of beekeeping is to harness the power of pollination while gaining honey and other products as well. However, recent threats to honeybee populations and other pollinators, threaten this relationship. In the face of such threats it is important to examine the context in which humans operate. In this case beekeepers are the main actors in establishing and promoting honeybee populations, but they operate in a political and social context as well. Therefore it is vital to ask these questions: What national, state, and local policies and social organizations are in place that affect Louisville beekeepers and their practices? In this paper I answer this question by first discussing the importance of this topic looking at the importance of the honeybee, the history of beekeeping, and current issues and threats to pollinator populations. After establishing that this is an issue of concern I will turn a critical eye towards the United States, Kentucky, and Louisville policies that have affected and will continue to affect the practice of keeping bees and how local organizations are operating under these policies.

Angela Storey (University of Louisville) and **Allan Day** (University of Louisville)

Seeing the Urban Environment: Linking Ethnographic Methods and Pedagogical Practice in Louisville

This paper explores the difficulties of “seeing” the environment by examining how students reflect upon urban socio-natures within a participant observation assignment. As a central method of ethnographic fieldwork, participant observation activities are often utilized to encourage the development of anthropological thinking grounded in everyday experiences and places. Here we consider the methodology of participant observation in terms of its fit with learning about the relation between urban ecologies and social interactions. Drawing from students’ experiences, we examine the challenges and possibilities that arise from utilizing structured processes for observing human-environment interactions, asking: How is it similar to, or different from, observing other kinds of (social) interactions? How does it engage thinking about built versus natural environments, or human and nonhuman actors therein? Such inquiries serve to trouble conceptions of what constitutes “nature” as related to the human; thus, if the environment itself is definitionally elusive, what does observation do in terms of divining the environment as a site of critical inquiry? In asking these questions we draw from Tsing’s discussions of “noticing” in framing more-than-human assemblages (2015), considering how this approach might be useful for bringing together pedagogical and methodological praxis. By grounding this discussion within the greater Louisville metropolitan area, we discuss how learning practices of observation can highlight the lenses through which we collectively interpret the socio-ecologies of a particular place.

Session Block 6

2:30pm – 4:10pm

33. Legal and Extralegal Dispossession: Extracting Value and Exploiting Difference across Uneven Spaces

Room 105

Organizers: Daniela Aiello (University of Georgia)
Benjamin R. Rubin (City University of New York)

Chair: Benjamin Rubin

Benjamin Rubin (Graduate Center, City University of New York)

Financial Risk and Legal Regulation: Crisis Management as a Site of Innovation for New Forms of Dispossession

This paper attempts to bring together analysis on the limits of state power with literature on the expansion of different forms of capital power. A long line of scholarship has highlighted the limits of state regulation to maintain health of environments and people's bodies, a contemporary condition with long historical precedent (Pulido et. al. 2016, Markowitz and Rosner 2013). The power of finance capital to shape places and environments likewise has deep historical roots (Hudson 2017), despite changes in its formation under the rise of financialized neoliberal state governance; both of these are also profoundly shaped by the use of (flexible) racisms to naturalize and legitimate their socially uneven impacts (Pulido 2017, Sze 2006, Melamed 2015). I bring these together by using environmental and health crises as a lens to compare different kinds of responses: the legal – regulation and court adjudication – with financial – risk management strategies, financial hedging, credit rating adjustments. Interrelationships between this seemingly separate spheres create space for experimentation and innovation beyond the legal, allowing for the develop of new practices which can then themselves become normalized and formalized, whether legal or not. I argue that the development or abandonment of these different kinds of responses from various (unaligned) interlocutors of capital are a key element in reinforcing, re-creating, or producing new racial regimes which underlie the emergence of new forms of dispossession.

Rachelle Berry (University of Georgia)

Dispossession through Emergency Management: Winners and Losers in Detroit's Bankruptcy

In this paper, I make sense of how the state used emergency management in Detroit as a tool of dispossession. Emergency management is a suspension of local democracy that gives emergency managers (EM) unprecedented powers to make the decisions of any city official including placing the city into bankruptcy. Detroit filing for bankruptcy while under this governance scheme was no accident. Consequently, the local elected leadership had no input to whose contracts are dissolved and whose contracts are honored through Detroit's bankruptcy. The final bankruptcy plan of adjustment allowed for the dispossession of pension holder's health care benefits and the restructuring of the Southeast Michigan region's water governance in favor of suburban leadership. Detroit's loss of the sole control of the region's greatest natural resource and city pensioner's benefits came with a transfer of \$5 billion dollars worth of debt from the Detroit Water and Sewer Department to a new governing body, the Great Lakes Water Authority. Preserving bondholder debt over pension holder's benefits is exactly what the Emergency Management law was made to do. In fact, bondholder's contracts are the only contracts that cannot be dissolved or changed at the sole discretion of the emergency manager. Thus, bondholders have more rights to the city than retired workers.

Max Ritts (UBC)

Accumulations of Knowledge: Enclosure and the Political Economy of Coastal citizen science

Across Canada's remote coastal regions, the capacity to register marine environmental transformation is being distributed across vast technological sensors and online viewing platforms: cabled observatories, hydrophones, GoPros, and conservation apps (ONC 2014; Jepson et al. 2015; Matabos 2017). These efforts involve a diversity of settler and Indigenous communities, each of whom are being solicited to participate in eco-monitoring in contexts of energy development (e.g LNG) and proliferating environmental risks (e.g. ship strikes, oil spills, ocean noise).

Projects like Smart Oceans and BearWitness are not simply the “bottom up,” “place-based” developments they appear to be, however. They operate with the active support of liberal governments, large tech firms, and scientific research communities. In austerity contexts like Northern British Columbia, they appeal to cash-strapped community colleges and band councils, who seek free learning tools and assistance (Strangway et al. 2013). This talk investigates the key actors supporting the proliferation of citizen science (CS) in coastal Canada: innovation hubs; research partnerships; private firms; and state-funding mechanisms. In problematizing CS, my goal is not to critique community interests in science. Rather, it is to chart a new political economy of volunteered geographic information, cohering around environmental science and statecraft, reconciliation politics, and markets in environmental monitoring technologies. Using Marx’s theory of enclosure as a guiding analytic, I explore emerging grammars of technologically-mediated citizen “sensing” (Gabrys 2016; Pasquinelli 2014, 2017). Given the new prominence of CS in environmental regulation, it is imperative to ask whether and to what degree legal and extra-legal processes of enclosure underlie, deflect, and reform initiatives claiming local decision-making, community access, and self-determination as guiding principles.

Daniela Aiello (University of Georgia)

Lessons from legal, extralegal and illegal evictions in Atlanta and Vancouver

In this paper I consider two sites of dispossession through the lens of the eviction crises in Atlanta, GA and Vancouver, BC - two cities with significantly divergent historical-geographies of race and dispossession. Though the outcome of most eviction processes are similar, evictions in these cities take place through starkly different means. Carried out at the county level amid a regulatory framework in Georgia that offers almost no protections for tenants, evictions are a relatively easy, low-cost undertaking for landlords in Atlanta. Local legal advocates estimate that an average of 700 evictions per week were carried out in Fulton County throughout 2016 - most of which correlated with African-American census tracts. Meanwhile, in Vancouver’s Downtown Eastside, though tenants have more robust protections under provincial law, low-income, Indigenous and Chinese-Canadian residents are instead evicted through largely informal means - attempts at intimidation, payouts, complex legal loopholes, and a lack of legal and language resources are what keep them in a constant fear of eviction. This paper considers these multiple moments of eviction as contrasting enactments of legal, illegal and extralegal mechanisms which produce uneven processes and experiences. And yet, their end result is an ongoing form of racialized dispossession - a chronic and cyclical state of housing insecurity experienced by low income racialized and Indigenous people. These differential experiences of eviction across these cities provides an important theoretical opening or examining the dynamics of uneven racial capitalism and settler colonialism.

34. ‘The Gold Fish Casino’ film screening & discussion

Room 105

Organizers: Sarolta Jane Vay (Independent Filmmaker, San Francisco State University)

Chair: Sarolta Jane Vay

‘The Gold Fish Casino’ is a 33 minute queer slapstick musical about salmon migration and the uprising of an emergent water commons.

At The Gold Fish Casino, a plucky Salmon must gamble her eggs for high stakes: enough clean water to get home to spawn. The Water Nymph, a veteran of the Water Wars, charms the Salmon while dealing dirty cards. Onstage, The Army Chorus of Engineers sing cheerful numbers about Manifest Destiny while at the bar the down-trodden River Creatures hatch plans to topple the Water Tycoon.

As a mighty storm brews in the distance, the Water Tycoon shuffles in for a cataclysmic show down: Will the Salmon and her fellow creatures rise up, or will it all go down the drain?

Following a screening of the film the playwright (July Hazard), director (Sarolta Jane Vay), and science consultant (Cleo Woelfle-Erskine) will discuss how fantastic surrealities and art-science collaborations can reshape environmental politics; and the ensuing tensions between artistic and scientific modes of knowledge production.

Throughout a genealogy from one-act play to musical to film, The Gold Fish Casino, has engaged biologists as performers and audience, and sparked dialog among queers, river activists, water wonks, and artists around water politics. Yet, how these encounters shape water politics is difficult to assess.

Decisions about how to manage rivers and endangered species are typically delegated to scientists and economists within a technocratic setting. Political art has been integral to social movements from ACT UP to the WTO protests to current climate justice efforts, but rarely engages scientists as co-creators or audience.

We will explore the role of queer political art in shaping debates about environmental governance, and in furthering transspecies, transnational, feminist possibilities of world-shaping.

Sarolta Jane Vay (San Francisco State University)

July Hazard (University of Washington)

Cleo Woelfle-Erskine (University of Washington)

35. Opiates and Human Systems: From Medicinal Plant Compound to Disease Epidemic

Room 129

Organizers: Alice Melendez (Independent/Action Researcher)

Chair: Alice Melendez

Alice Melendez (independent researcher)

Opium for the Masses- mass-produced opium and dis-illusion

Most media coverage of “the Opiate Crisis” today, when it seeks to situate the problem historically, goes back to Purdue Pharma and the massive influx of high-potency pills they engineered and profited from. This paper recalls to the public discourse that the opium poppy has been used for centuries and that where it has become available and a customary form of use has taken hold, it has always held sway in the lives of many people. And yet, in our modern iteration, the plant’s impact seems to be more destructive than ever.

The opium poppy’s supply chains and customary use adaptations take on the flavor of their time and geography, from the first Sumerian references to “the joy plant,” through the fall of Troy and the Opium Wars over British control of its trade in Asia, to our modern medically-induced ‘epidemic.’ This time around, they are infused with 1) mass production and mass marketing, 2) the prison-industrial complex, 3) modern technologies for handling plant medicine which depend on a reductionist approach and hyper-refinement, 4) community breakdown including widespread experience of trauma that tends to be hidden, ‘domestic’. What would stand in direct opposition to these ‘infusions’ is a return to the ancient reverence for plants and healers, for every person and for communities. Having passed through superstition, if we return to recognize the sacredness of our everyday experience, we can live in a new way that will allow our people to heal rather than be shuttled through bureaucracy, trauma, cages, and dope addiction. My paper draws on family and neighborhood experiences with prescriptions, jail, Child Protective Services, hustling, being broke, treatment centers and so on. For the oppressed creature, “the demand to give up the illusion about its condition is the demand to give up a condition which needs illusions.”

James Nolan (West Virginia University)

“The Sun Does Not Rise or Set:” A Sociological View on the Opioid Crisis in American Communities

What we “know” to be true is often our biggest obstacle to change. In the same way the Earth’s rotation makes the sun appear to rise and set, the spin of our political, health, economic, and criminal justice systems makes problems like crime, violence, and drug abuse appear to us in a certain way. The author presents a sociological view that first shows how failing social policy aimed at crime and illegal drugs continues to be reproduced. He then challenges some of our most fundamental assumptions about law enforcement and its impact on the health and safety of a community. Finally he presents a conceptual framework for change that is grounded in social cognitive theory and supported by federally funded research in a rural southern state.

Carrie Oser (University of Kentucky)

Social-Ecological Barriers to Medication Assisted Treatment for Appalachian Inmates After Release from Prison: A Clinician's Tale

The opioid epidemic in rural Appalachian counties is having profound repercussions on the economic, criminal justice, and health care systems within Kentucky. In response, Kentucky passed legislation in 2016 providing earmarked funds so the Department of Corrections (DOC) could offer extended release injectable naltrexone to (XR-NTX) to eligible inmates prior to release from prison to reduce relapse and recidivism. XR-NTX is a non-addictive medication to treat opioid use disorder via a monthly injection, which reduces the reinforcing effects of opioids. It is ideal for correctional settings due to its low risk of diversion, but DOC data indicate low acceptance of XR-NTX among eligible Appalachian inmates. This social-ecological study is based on qualitative interview data from all 15 social service clinicians (SSCs) in Appalachian counties and was designed to provide clinician's feedback on the barriers associated with offenders' initiation and continued use of XR-NTX after release. SSCs are employed by the DOC to provide intensive and/or therapeutic social work services to re-entering offenders, including treatment referrals. Two independent coders conducted line-by-line coding, followed by focusing coding, and memoing. Individual barrier themes to the use of XR-NTX included lack of motivation, health concerns, limited transportation, and a lack of insurance. At the interpersonal level, homophilous networks and uneducated networks were barriers. Institutional barriers included large SSC caseloads, uneducated parole officers, and few XR-NTX providers. While SSCs have positive views of XR-NTX, especially in comparison to other medication assisted treatments for opioid dependence, most individuals chose not to initiate XR-NTX. Implications for increasing education and improving interagency communication are discussed.

Kenneth Anderson (HAMS Harm Reduction Network)

We Already Know How to Reverse the Overdose Crisis

Although overdose death rates have skyrocketed in the United States in the past two decades, in a number of other countries in the world overdose death rates have plummeted. These countries include Australia, Germany, Greece, Italy, Luxembourg, Norway, and Switzerland. What all of these countries have in common is extremely good access to medication assisted treatment (MAT). In the majority of these countries methadone dosing can be done in pharmacies or doctors' offices and only a minority of clients utilize methadone clinics. This presentation will make the case that mandatory counseling, urine testing, and sanctions against parallel drug use function as barriers to access to MAT. The methadone clinic system in itself is a barrier to MAT; most clients do not require clinic supervision and will do better with office-based or pharmacy-based dosing. It will also demonstrate that most diverted methadone is prescribed for pain and that diversion of maintenance methadone is a rarity. Moreover, when methadone is diverted it is usually used for maintenance and not to get "high." This presentation will make the case that the solution to America's opioid crisis is in pharmacy and office based methadone dosing. Recent reports make it clear that, outside of a few major cities, MAT coverage in the US is painfully inadequate. Moreover, buprenorphine is expensive and building a methadone clinic in every small town and rural area is likewise expensive and impractical. However, pilot programs such as those in Lancaster, Pennsylvania have demonstrated that pharmacy dosing and office based dosing of methadone is highly practical in the US. The laws and regulations must be changed to allow low-threshold access to methadone and dosing at pharmacies and doctors' offices, else we shall see the death rate continue to rise.

Andrew Ozinkas (Bastyr University)

A look at three ways that Botanical Medicine is an ally in the modern addiction crisis

Within a clinical setting, we effectively utilize herbs to increase healing of the body systems & organs after damage is caused by harmful substances. While specific medical needs are addressed, increased overall health also improves recovery from, & resistance to, addictive patterns. Legal & non-addictive herbs can provide a safer alternative to more dangerous consciousness-altering-substances. While humans seek altering substances (sugar, coffee, alcohol & beyond) as a modifying response to our environments, we can utilize herbs which heal & balance each persons constitutional needs, while also providing a safe & pleasant shift in our perspective. Finally, the culture & growing economic powerhouse of herbal & alternative medicine can be a key player in helping to improve Appalachian, mid-western & southern cultural wellness & viability. We live in one of the worlds most significant 'medicine baskets', & by working to develop our region as a player in the world herbal medicine economy, we can help to lift our region out of the long depression which has lingered here.

36. Urban Ecologies and the Commons

Room 205

Organizers: Caitlin Cunningham (Virginia Commonwealth University)
Patrick Korte (Virginia Commonwealth University)

Chair: Patrick Korte

Rachael Baker (York University)

Mother Land: An ethic of the commons

Today Detroit is home to some 680,000 people, and approximately 90,000 properties and 30,000 buildings - residential, commercial and industrial - are vacant in the city. Green infrastructure is being explored as a state-led redevelopment strategy for 30 square miles of land, though repurposing property for 'green' projects (including urban farms), has been taking place in Detroit since the 1970's; defying the boundaries of property lines and communing parcels of land for community use. As Detroit emerges from bankruptcy, urban farmers are faced with a new redevelopment agenda that shifts the city's previous strategy of decreasing vacancy through voluntary stewardship by residents, to a property ownership model. Detroit's post-bankruptcy property governance regime challenges farmers' claims to property and effectively revokes rights of adverse possession, pricing farmers out of ownership through development-led reassessments, despite the contributions and sweat equity urban farms and gardens make to neighborhoods as providers of resources including food, "eyes on the streets" surveying, community space and anti-racist educational opportunities. Both scholars and activists have made Detroit a focal point in discussion about the potential for an actualized urban commons, given the 40 square miles of open space the city of Detroit of which the city of Detroit holds the deeds, and many urban agriculture practitioners steward. The commons, as it is traditionally treated within Marxist orthodoxy, is referential of the English property system of the sixteenth century; the era of the global expansion of British colonialism, including the development of the transatlantic slave trade. Reckoning with the white and colonial origins of the commons is necessary if the framework is to be of any use in a city with a nearly 85% black population. This work examines the helm of woman and mother leadership that is commoning open space in Detroit, in the name of black intellectualism, liberation, and reconstruction.

Eleanor Finley (University of Massachusetts, Amherst)

The Rojava Revolution, Social Ecology, and the Commons

Political ecology refers to the interdisciplinary study of relationship between power, society, and the natural world (Escobar 1996, 2012; Greenberg and Park 1994; Perrault, Bridge, and McCarthy 2015; Robbins 2012; Stott and Sullivan 2000; Watts 2015). From a scholarly and analytic standpoint, social ecology can be understood as a tendency within political ecology. However, social ecology is not only an analytic theory, but a way of educating out the general features of a rational and ethical globalized civilization. Social ecology has influenced social movements from the 1970s until the present, most recently with the adaptation of social ecology to the Kurdish Freedom Movement and the Rojava Revolution.

This paper engages and problematize the experiment in Rojava from a social ecology perspective. Using evidence in the form of ethnographic data collected among Syrian-Kurdish migrants in Hamburg, Germany, as well as the writings of imprisoned Kurdish political leader Abdullah Ocalan, this paper inquires after the implications of Rojava's experiment in democratic confederalism for future projects to transform social relations and reclaim the commons. In particular, it summarizes the central critique posed by Ocalan of traditional socialist collectivization practices and Third World nationalism, as well as explores the contradictions which arise from the conditions of former Marxist-Leninist party lead a "democratic" revolution under conditions of war and extreme economic deprivation. In the final analysis, it argues that the Rojava Revolution is more than events happening in Syria. It is the desires and perspectives of the people inspired by it, and a symbolic turning point for the global left.

Caitlin Schroering (University of Pittsburgh)

The Global Economy, Resource Conflicts, and Environmental Social Movement Resistance

Saskia Sassen (2014) writes that we live in a time of "expulsions" of people and the biosphere, caused by advanced capitalism and speculative finance. Given the elemental and ubiquitous issue of water, I examine movements of resistance to water privatization as a specific form of expulsion. Drawing on the work of Paul Almeida (2014) and Mangala Subramaniam (2014) I discuss how anti-water privatization campaigns are often inextricably linked to campaigns countering privatization of energy or resources. This makes them anti-capitalist campaigns in

general, of which water issues are but one component. Yet there is a body of literature that suggests that the threat of water privatization is a type of expulsion that elicits more social movement resistance than other resource conflicts around privatization. The idea of water as a human right—versus something that can be commodified, privately controlled, and sold at high prices— is at the center of this debate. The resistance and opposition to water privatization is linked to the broader themes of environmental justice, racial justice, health, reproductive justice, and the need to put human rights above profit for fair and sustainable energy policies. The idea of corporate profit off of water often evokes more moral outrage, I observe, than when the same process occurs with other resources. I am interested, therefore, in the similarities and differences of how groups in different parts of the world organize to fight for public control of water. Drawing on preliminary fieldwork, position papers, webpages, and alternative/activist news sources, I examine two water rights groups (one in the United States and one in Brazil). I submit that these movements present new types of political ecologies and global solidarity networks for water justice and human rights.

Vera Smirnova (Virginia Tech)

Territorial Formations of the Frontier: Extralegal Appropriation, Border Materialities, and Land in the Imperial Siberia

This paper explores the historical formations of land enclosure in the margins of the nation state, where enclosure reworks bordering territorial orders to create new operational landscapes in times of instability. Enclosure of the Russian land commune and fictive legality of landed property in the late Imperial Period have devastated both the urban and national periphery and emanated the whole series of dispossession. The urban periphery around central cities accommodated mass proletarianization, while Siberia became a contested frontier intended for the exploitation of some three million displaced peasants and the accommodation of excluded criminal subjects, followed, at last, by the alienation of its customary nomadic territoriality. Drawing on an archival fieldwork into these disputed experiences of land appropriation in imperial Siberia during the formation of essentially capitalist landed relations, this paper explores the frontier's role as an ontological device of 'exception.' In particular, it interrogates the ways exception operates in space through enclosure and, as a result of this dynamic, explores how frontier territories are actively assembled/manufactured through various discursive practices, bordering technologies, and infrastructural arrangements that turned Siberian periphery into a strategic and supporting territory of the crisis of imperial Russia.

30. Women and Gender Equity in Agriculture

Room 218

Organizers: Garrett Graddy-Lovelace (American University)

Padini Nirmal (Clark University)

Chair: Padini Nirmal

Discussant: Gina Thornburg

Megan Baumann (Penn State University)

Indigenous and campesina women's solidarity in Tolima, Colombia: Engaging a feminist decolonial methodology in relation to femin

In the arid Colombian southern highlands, peasant and indigenous women are negotiating the arrival of water to the newly completed Tolima Triangle irrigation district, now marked by investors as an ideal site for intensive rice and cotton cultivation. The women mobilize through Manos de Mujer (Women's Hands), a group resisting forces of agricultural intensification that threaten their land tenure, water security, and seed sovereignty. Following calls from scholars for research on the everyday realities of (Harris 2008) and resistance to (Zwarteveen & Boelens 2014) uneven impacts of water development projects, my research investigates the differentiated experiences of the recent arrival of irrigation water, with particular attention to gender and ethnicity. I bring together theoretical frameworks of feminist political ecology to attend to questions of environmental justice and intersectionality (Mollett & Faria 2011) and feminist geopolitics to complicate questions of geopolitical scale and the state (Pain 2008; J.K. Gibson-Graham 2002). These two lenses, along with a methodology informed by Latina feminist decolonial scholars, allow me to perceive and be attentive to what feminist decolonial philosopher Maria Lugones (2003) calls "infrapolitical resistance," often made invisible by dominant political and epistemic regimes. This paper articulates how a feminist decolonial methodology can strengthen the engagement of frameworks feminist political ecology and feminist geopolitics in relation to women's agrarian social movements.

Sumac Elisa Cárdenas Oleas (Iowa State University)

The intersection of gender and ethnicity in development policy and application

Gender inequality and a history of ethnic discrimination in the rural Global South has limited many people to fully benefit from agricultural production as their major source of employment and income. Gender inequality limits women's ability to acquire knowledge, resources, and inputs to increase their productivity, and ethnic discrimination isolates people and limits their access to valuable resources in post-colonial nations. Rural people's isolated locations and limited access to inputs creates and maintains their status as poor and marginalized people.

Since rural populations' main source of income is agriculture, especially for 79 percent of women, many developmental programs focus on increasing agricultural productivity and efficiency to reduce poverty. However, limited studies examine poverty and discrimination risks associated with having multiple identities, such as being both women and being part of an ethnic group. Instead, ethnic studies tend to be analyzed in isolation from gender issues. Thus, this literature review will describe the gender and development (GAD) and intersectionality theories with a focus on the Global South, particularly on Latin America. More specifically, on how international development search and application has focused on agricultural opportunities for women in isolation to other identities, such as their ethnicity, in postcolonial nations.

Katie Shedden (James Madison University)

(In)visibility and Meaning in Food Labor: A Feminist Autoethnography

My graduate thesis project entitled "(In)visibility and Meaning in Food Labor: A Feminist Autoethnography" aims to illuminate the gendered experiences of female food laborers and how women make meaning through their labor in this context. Gendered experiences do not stand apart from classed and raced identities, which I also aim to reflexively analyze throughout this thesis project. Women working within the food chain have been historically marginalized and made invisible, though they make up an increasingly significant portion of this workforce, a trend known as the "feminization of agriculture". The discussion of the work that women do when discussing food in the academic literature also focuses largely on nurturing and feeding tasks, which does not discuss the wide range of food work that women do such as picking, processing, distributing, and serving. Throughout my thesis, I will utilize autoethnographic methods supplemented with ethnographic interviewing to analyze my own experiences as a female food laborer. This thesis will discuss experiences growing up on an alpaca farm in rural Virginia, my employment as a cashier at Grocer's Market, as a voluntary laborer with the International Organic Farming program, and my experiences working alongside female farm owners in Ireland and Virginia. These narratives will be organized according to theme, which are entitled: gendered divisions, women's labor as invisible, and structural inequalities.

37. Political Ecologies of Environmental Engineering

Room 219

Organizers: Joshua Mullenite (Florida International University)

Chair: University of Kentucky Political Ecology Working Group

Discussant: Rebecca Lave

Mitchell Kiefer (University of Pittsburgh)

Sewage Infrastructure and Resilience in and around Pittsburgh

Cities around the world have taken up resilience as a strategy to manage social and environmental risks. Resilience, as the goal, is understood as the ability to endure hazards while remaining functional. One particularly strong critique of how resilience is implemented is its propensity to facilitate post-political governance. Specifically, technocratic solutions veil underlying – and problematic – power relations and assumptions regarding the environment, risks, and our ways of managing them. In this paper, I focus on the sewage and flood infrastructures of Pittsburgh to explore the power relations that govern environmental risks. Pittsburgh's infrastructure combines storm water runoff with wastewater, spilling raw sewage into rivers in times of floods and overflow. I adopt a political ecology framework to interrogate the processes of determining common problems and their solutions, using an analysis of the built environment and discursive governance. My study sheds light on how post-political governance, and the resulting construction of sewage and flood waters, silences potential narratives of socio-environmental relations. At the same time, ostensibly resilient solutions articulate risks in ways that encourage neo-liberal practices, such as urban revitalization and placing burdens on marginalized groups. In short, this case study adds to our understanding of how post-political governance works.

Fazilda Nabeel (University of Sussex)

The place of Groundwater in the Making of a Colonial Hydrology: Punjab in Nineteenth and Twentieth Century

Existing literature on colonial hydrology, hydro-imperialism and the notion of a hydraulic society has almost exclusively focused on colonial investment in large scale engineered works for surface water. This paper aims to explore the place of groundwater in the making of the colonial hydrology and its persisting legacy by studying the colonial approach to groundwater in the Punjab under British rule. The analysis starts with the colonial period where development of groundwater was incentivised through indirect policies of the state and records of wells were carefully maintained, 'experiments' with well designs and water extracting technologies were conducted to further the colonial agenda of agricultural commercialization and modernization - to comment on the importance of groundwater to the colonial state. In the post-colonial period, state-directed development of the resource begins with the arrival of well meaning foreign experts and multilateral funding to conjure the 'green revolution' in agriculture, but soon gets transformed by shifting currents in global ideas about groundwater management. By placing groundwater "mapping" and developments in the colonial and post colonial donor led era against the large-scale investments in surface water projects held symbolic of state building and "national" interests, the paper seeks to emphasize the importance of groundwater in the making of a colonial hydrology, as well as its persisting legacies in the post colonial era.

Martin Calvet (University of Manchester)

Urban terraforming: engineering urban sustainability to produce socio-environmental power

Rooted in early debates over the viability of developing livable Earth-like extraterrestrial environments by planetary-scale engineering, current scientific debates on terraforming also consider the analysis of very-large Earth-based projects of environmental production, management and sustainability. A critical scholarship on terraforming has emerged scrutinizing how terraforming experiments embed social engineering and commodification and produce artificial landscapes, as well as focusing on its appeal to mobilize social representations of power, utopianism and rebellion in popular culture. From an Urban Political Ecology perspective that focus on the urbanization of nature as a process driven by social power that produces cyborgian and urban socio-natural hybrids, this paper explores the possibilities of a distinctive 'urban terraforming' to contribute to the debates on socio-environmental transformation and control. Through a critical revision of the literature the paper draws a conceptual framework of urban terraforming as a promising analogy to the research of very-large engineered urban systems such as some eco-districts or sustainability infrastructure.

38. Getting Practical: Making Change with Critical Physical Geography

Room 225

Organizers: Lisa C. Kelley (Santa Clara University, University of Hawaii-Manoa)
Annie Shattuck (University of California- Berkeley)

Chair: Lisa Kelley

Discussant: Rebecca Lave (University of Indiana-Bloomington)

Chris Knudson (University of Arizona)

Forecast, fertilizer, fungicide: The use of climate information by resource-constrained coffee farmers

Coffee from the Blue Mountains (BM) of Jamaica is among the most expensive of its kind in the world. This high cost, however, has led to a niche market, with considerable price volatility. In 2017, Japanese buyers, who have long bought 80% of BM coffee, could not agree to a new contract with Jamaican exporters, resulting in 40% lower farm-gate prices than the previous year. In order to help increase the BM coffee farmers' yields, an international team of human and physical scientists, and non-academics, conducted a series of workshops in six BM communities. The workshops featured dialogues with the farmers to deepen their knowledge of the lifecycles of the coffee plant, and of coffee leaf rust (CLR), a destructive plant disease. In addition, farmers discussed how weather and climate are linked to these lifecycles. After the workshops, approximately 250 farmers began receiving monthly seasonal climate forecasts by text message. The goal of the forecasts is to allow the farmers to increase their yields within the context of low farm-gate prices. For example, with a knowledge of how CLR intensifies at the onset of spring rains, and a forecast for an especially rainy season, farmers can more effectively and efficiently apply fertilizer and fungicide to save their coffee plants. This paper draws on interviews with two farmers from each of the six communities, conducted monthly

between August 2017 to January 2018, to show how the understanding of, and access to, seasonal climate forecasts influence on-farm activities. We argue that the utility of an increased knowledge of the biophysical system – from the phenology of coffee and CLR to upcoming weather events – is constrained by the political economy of BM coffee, where the low and unpredictable farm-gate prices often prevent farmers' from deploying that knowledge.

Jenny Isaacs (Rutgers University)

Capturing the Flyway; Techniques and Technologies of Atlantic Shorebird Conservation

While remaining grounded within different intellectual traditions, 'more-than-human' and 'more-than-physical' critical environment geography research projects are extending the reach of and recursively working towards more interdisciplinary forms of political ecology (PE). Biogeographic research within PE is one area where efforts to practice critical "more-than" scholarship have been steadily advanced in both directions, often employing mixed methods which engage seriously with both natural and social sciences, in frequent conversation with the environmental humanities. As 'bio-geo-graphy' and 'dwelt political ecology' (Barua 2014), this paper contributes to the growing body of 'lively' or 'intradisciplinary' critical biogeography (Jepson et al, 2010; Lorimer, 2010) which critically focuses on uneven power relations within multispecies assemblages relative to the governance of wildlife / habitat and the production of knowledge about nonhuman subjects. Attention here is focused on the key role of field science in the management and shaping of landscapes across the "Atlantic Flyway" stopover network, utilized by several species of long-distance migratory shorebirds. Using insights gained from participant observation along the Delaware Bay in New Jersey, spatial and discourse analysis, as well as archival research with the Western Hemisphere Shorebird Reserve Network (WHSRN), I review the basis for and mechanisms of techno-scientific, data-driven management approaches which undergird shorebird conservation. I show how tagged birds as well as tracking devices themselves shape and regularly reshape the conservation map and practices of WHSRN/experts. Through a posthuman STS analysis, I show how and why this conservation territory is expanding and poised to grow. Conversely, I explain the limits of enrolling sites as static designated spaces of conservation, since local conditions and long-distance migrations are in flux and often contested. I conclude by discussing the practical and political implications of such insights for long-distance migratory shorebird conservation, stakeholder engagement, and "more-than-human"/"more-than-physical" critical biogeography within PE more generally.

Jimena Diaz Leiva (University of California, Berkeley)

Leveraging bioindicators and political ecology to understand mercury contamination from artisanal and small-scale gold mining in

Peru is the sixth largest gold producer in the world. While most of this gold is produced through formalized mining operations, approximately 13 percent is generated by informal, artisanal and small-scale gold mining (ASGM) operations in the Amazonian region of Madre de Dios. ASGM in Madre de Dios is not a new phenomenon, but the expanding environmental footprint of this activity has raised concerns about whether there is a future for ASGM in the region. In particular, public health officials and scientists alike are alarmed by the use of mercury in the gold refinement process. Mercury-laced tailings from mining operations infiltrate waterways, enter aquatic food webs, and accumulate in concentration in fish - a staple in the diet of the human inhabitants of Madre de Dios. When elemental mercury is released into the environment, it can undergo a transformation to an organic form that is readily accumulated in the tissues of biological organisms. The biophysical processes that determine whether this transformation occurs are not well known, but biomonitoring using indicator species can help us understand where this mercury ends up.

My dissertation research takes a holistic approach to studying mercury contamination from ASGM by understanding how arrangements of labor and technologies of gold extraction influence the movement of mercury in the environment. Drawing from political ecology's emphasis on resource materialities and the construction of socio-natures, my research will examine how the modalities of mining differentially impact the process of mercury bioaccumulation and biomagnification. This research will serve to inform better intervention strategies to mitigate the environmental impacts of ASGM.

Lisa Kelley (Santa Clara University, University of Hawaii-Manoa)

Politics and Policy along an Indonesian Commodity Frontier

Over the past decade, production crisis in the smallholder cacao economy has inspired millions of dollars of investment in a supposed sustainable intensification of cacao yields in Sulawesi, Indonesia. Policy proponents and much work within conservation science have generally emphasized the capacity of investments to "spare" further forest from clearance and/or drive a transition into more sustainable land use dynamics moving forward. This paper illustrates how embedding land use change mapping within a political ecological framework of analysis can help to challenge this proposition, revealing more relevant sites of policy attention. I do this by highlighting two core findings

from multi-year research in the region. First, the history of cacao production and smallholder tree crop production as a driver of not only of forest cover loss, but also landscape revegetation in long-fallowed grassland areas. Second, the failure of investments to mitigate ongoing forest cover loss in the region, in part because they are subsidizing further agricultural expansion into the forest among land-wealthy households.

Annie Shattuck (UC Berkeley)

The politics of imperceptibility: Risk, uncertainty and environmental health on a commodity frontier

Global agrichemical use is trending upward from the U.S. to Ghana to India and Bangladesh. Pesticides are now part of our second nature, there is more uncertainty as to their impacts and severity, and few acknowledgements of their promiscuous ubiquity. I explore the politics of risk and imperceptibility in the expansion of pesticide use, drawing on a case in Lao PDR, Until ten years ago, the Lao PDR was the lowest per capita pesticide user in the world. Despite now common overuse of pesticide and efforts by development organizations to reduce 'risk' – identifying just what constitutes that risk is freighted with political and epistemological choices. The struggle to define the 'problem' of pesticides and to mitigate the risk is emblematic of these dynamics more globally. I follow a community based action research project documenting the impacts of pesticide with local middle school students, an NGO trying to evaluate and document pesticide impacts, government efforts to regulate agrichemicals, the pesticide applicators themselves whose job it is to transform landscapes with herbicide, and draw on surveys and oral histories to understand the broader context in which 'risk' is lived and embodied.

39. Managing Bodies in East Africa: How Conservation Areas Condition Subjectivities

Room 229

Organizers: Jennifer Coffman (James Madison University)

Chair: Jennifer Coffman

Jennifer Coffman (James Madison University)

Invisible Lines, Multiple Pathways, and Shifting Networks: Re-defining “Being Maasai” in the Tanzanian Northern Rangelands

The tarmac road and parallel informal roads that define Longido, Tanzania, represent and make possible in-flows and out-flows of people and their ideas and products. Yet, this era of seemingly endless possibilities and connectivities, there is an increasing fixity-in-practice, and an attendant restlessness that grows alongside population numbers as it challenges some of the storied customs of “The Maasai.” Change is nothing new to any socio-linguistic group, but the forms differ in time and place. For example, the era of the “girl child” has led to some aspects of rural development taking on new elements of feminization – some women have become keepers of homesteads and livestock in ways uncommon a generation ago. The overt restlessness of youth retains a masculine overtone, as apparent in the constant buzzing of motorcycles and the illusion of greater mobility. And a public, belligerent escapism – another illusion of mobility while being stuck – has become increasingly common among elder Maasai men through alcoholism, which has grown proportionally with the traffic flow and within its vicinity. How then do these very 21st century realities influence and get influenced by “Maasai conservation,” a term that cuts at least two ways? Efforts that propose “ecological sustainable development” are meant to include actions by self-identifying Maasai to promote the conservation of rangelands, forests, and wildlife. Simultaneously, “Maasai conservation” also means to conserve attractive qualities of Maasai-ness, as Maasai peoples have long been tourist spectacles and iconic tribal sages thanks to a variety of popular culture outlets. This paper asks “what of the future of ‘Maasai conservation,’” as environmental subjects and objects are ever-evolving and the metabolic flows increase in rate and volume.

Kayla Yurco (James Madison University)

Beyond the Boma: A Gendered Approach to Conceptualizing Resource Access in Pastoral Households

Scholarship on resource access in pastoral communities in sub-Saharan Africa has tended to focus on rangelands where livestock graze, particularly as situated in or near contested protected areas. While rangeland spaces are indeed critical to livestock production and pastoral livelihoods, the emphasis on resources in rangelands has obscured the importance of livestock-related resources in other spaces; namely, the pastoral boma (home). Resources within the home, including livestock and the milk they produce as a principal source of food for pastoralists,

have tended to be underemphasized, as have the fact that such resources are managed within households primarily by women. This paper therefore considers how pastoral women mediate complex resource flows within extended kin networks across homesteads, male-headed households, and female-headed sub-households. Relying on mixed methods data collected over 14 months from 2014–2015 in a pastoral community in southern Kenya, this article uses a gendered approach to re-conceptualize resource flows in pastoral households by examining the multiple, gendered spaces and levels at which livestock management occurs. In so doing, this paper demonstrates how livestock-related resource flows transcend physical infrastructure of homesteads, normative perceptions of patriarchal household boundaries, and pressures from nearby conservation areas. This research finds that women’s decisions regarding intra-household livestock management are key to understanding food security, adaptive capacity, and gender relations across household and landscape borders near and far from home. More broadly, this paper provides evidence that gendered, intra-household variation in resource access can be key to conceptualizing human-environment relations for communities in the Global South.

Rachel Palkovitz (James Madison University)

“Of the knife-sharpening rocks”: contested border spaces surrounding Mount Longido Forest Reserve, Tanzania

Both community members and scientists alike consider Mount Longido in Longido District, Tanzania, as being the lifeblood of the district. As the only reliable source of potable water for miles, local residents, predominantly Maa-speaking pastoralists, rely on the mountain for natural and cultural resources and services, which are intricately tied together as a result of the group’s long-standing presence in the area. Major uses include drinking water, household building materials, critical dry season grazing land, herbs and medicinal plants, and significant cultural practices and ceremonies, including “meat camps” and livestock sacrifices to pray for adequate rainfall. As the Tanzanian state and its major economic partners have prioritized the development of both roads and of conservation areas to gain foreign revenue, local governments in areas like Longido are trying to profit from preserving “natural space”. The south-facing slope of Mount Longido is designated as a forest reserve, placing limits on local access to and use of the mountain’s many resources. In nine months of fieldwork from August 2016 to May 2017, I investigated Longido residents’ relationships with this forest reserve through semi-structured interviews, focusing on forest use and contestation of the reserve’s border placement. Findings suggest that Longido residents continue to assert their livelihood over the “hegemonic governmentalities” of the state and the tourism industry while simultaneously struggling to maintain their historic relationship with the mountain under economic strain, as informal economies of charcoal production and sale have recently proliferated in response to prolonged droughts and connectivity with regional markets.

Alyssa Withrow (James Madison University)

Degradation and Marginalization in Tanzanian Marine Environments: Blast Fishing and Seaweed Harvesting

Coral reefs are among the most biologically diverse and productive of the world’s habitats. Reefs are home to a wide variety of marine flora and fauna, protect coastal areas from storms, and generate tourism and thus domestic and foreign revenue. About half of the world’s human population lives within the coastal zone, or 100 kilometers from the coast, and more than \$500 billion is produced through ocean-related businesses. Yet, over 90% of coral reefs along the continental shores of the Indian Ocean are threatened by degradation and climate change. There will be an increase in negative consequences for communities and regions that rely on the ocean for survival if sustainable practices are not implemented. Using the guiding framework of Political Ecology, this project examines the policies that established and maintain Marine Protected Areas in Tanzania, as well as the practices to assess and ameliorate human-caused degradation of coral reef environments.