

4TH ANNUAL UNIVERSITY OF OREGON CLIMATE CHANGE RESEARCH SYMPOSIUM

FRIDAY, MAY 29TH, 8:30AM-7PM

MUSEUM OF NATURAL AND CULTURAL HISTORY, UNIVERSITY OF OREGON

TENTATIVE SCHEDULE OF EVENTS, SUBJECT TO CHANGE

8:30 AM - 9:55 AM

WHAT WE KNOW ABOUT CLIMATE CHANGE AND HOW WE KNOW IT

MODERATOR: KATHY LYNN, UNIVERSITY OF OREGON, ENVIRONMENTAL STUDIES

MEGHAN DALTON AND PHILIP MOTE

STAKEHOLDER-DRIVEN CLIMATE SCIENCE: WHAT DO THEY WANT TO KNOW AND WHEN DO THEY WANT TO KNOW IT?

The vision of the Oregon Climate Change Research Institute is to be the Northwest's Climate Knowledge Network. Several projects have been initiated by entities external to academia whose interest in climate knowledge is largely practical, and the results of which are intended to inform planning and policy. In this presentation we will provide examples of the research questions posed by partners ranging from the Bureau of Land Management and US Forest Service, to Native American tribes, to municipal governments. These partners are concerned about forest health, flooding, coastal hazards, human health, and more.

SAMANTHA CHISHOLM HATFIELD, KATHIE DELLO, ELIZABETH MARINO, AND PHILIP MOTE

CHANGING INDIAN TIME: THE GROUNDED TRUTH OF TRADITIONAL ECOLOGICAL KNOWLEDGE OF CLIMATE CHANGE, SEASONALITY, SPECIES INTERACTION, TIME, AND CULTURE

Elders and members of three Native American tribes in the Northwest were interviewed to discern what cultural changes they had noted in response to environmental changes. Visible expressions of culture - for example, ceremonies and songs - are usually connected to certain species and habitats which might be expected to change as climate changes. In addition to such visible expressions, which indeed show evidence of adapting to climate change, interviewees identified several common themes that extend to fundamental, largely invisible aspects of culture and even identity. In particular, the most important cultural consequence of climate change is how it affects the definition of time, in both seasonality, and the manner in which time is determined. In addition, we detected a very clear a sense of imbalance, confusion, or unknowing because new environmental conditions do not match the traditional information that has been passed down through generations.

PHILIP MOTE, DAVID RUPP, AND SIHAN LI

SUPERENSEMBLE REGIONAL CLIMATE MODELING FOR THE WESTERN US

Computing resources donated by volunteers have generated the first superensemble of regional climate model results, in which a regional model nested in a global model were implemented for the western US at 25km resolution. Over 136,000 valid and complete one-year runs have been generated to date: about 126,000 for 1960-2009 using observed sea surface temperatures (SSTs) and 10,000 for 2030-2049 using projected SSTs from a global model simulation. Ensemble members differ in initial conditions, model physics, and (potentially, for future runs) SSTs. This unprecedented confluence of high spatial resolution and large ensemble size allows high signal-to-noise ratio and more robust estimates of uncertainty. We describe the experiment, compare model output with observations, show select results for climate change simulations, and give examples of the strength of the large ensemble size.

DANIEL GAVIN

CLIMATE VARIABILITY AND FOREST FIRE CONTRIBUTES TO TWO ORDERS OF MAGNITUDE OF VARIATION IN FLOOD AND EROSION MAGNITUDE OVER THE LAST TWO MILLENNIA.

It has long been appreciated that flood hazard estimates based on the magnitude of a 100-year flood event is highly sensitive to climate variability and the inclusion of historical data of past severe events. Historical observations of past floods, however, normally only extend stream gage data a few decades; rarely does geologic evidence provide continuous evidence of flooding over millennia. Here we provide evidence from a 10-meter sediment core from the Siskiyou Mountains that records erosion magnitude for the last 2000 year. CT-scan of the sediment reveals mm-resolution structure in the sediment that allows us to estimate an annual series of erosion event. Power-law models applied to estimate the magnitude of the 100-year event shows two orders of magnitude variation that is correlated with fire intensity and centennial-scale climate variation. This study suggests that stream gage datasets greatly underestimate natural variability that is manifested over >100 year periods.

CHRISTOPH SCHWORER

PROJECTED CLIMATE CHANGE IMPACTS ON MOUNTAIN FORESTS IN THE SWISS ALPS AND THE OLYMPIC PENINSULA

Mountain vegetation is strongly affected by temperature changes and is expected to shift to higher elevations with climate change. Since forest succession processes take place over decades and centuries we use a dynamic vegetation model to assess the impact of climate change on vegetation. As a reality check we first simulate vegetation dynamics since the last Ice Age and compare model output with paleobotanical data from natural archives. We then simulate mountain forests under future climate projections. As a result, our model indicates a rapid upward shift of mountain vegetation belts by ca. 500 m and treeline positions of ca. 2500 m a.s.l. by the end of this century in the Swiss Alps. This rapid expansion of the mountain forest to higher elevations and the drastic changes in forest species distribution has important implications for future ecosystem services. Especially the range of alpine plants may be drastically reduced due to topographic and edaphic constraints. In the Swiss Alps at least, resulting biodiversity losses in the alpine vegetation belt might be mitigated with low-impact pastoralism to preserve species-rich alpine meadows.

THE 2013-15 OREGON-CALIFORNIA DROUGHT: CONTEXT AND CAUSES

National attention has, rightly, focused on California's dire and unprecedented 4-year drought. But much of southern and eastern Oregon has also been in drought. Droughts in the northwest have three main types, each with a variety of causes, pathways, and impacts. The 2013-15 drought is a good example of the type of drought likely to become prevalent as the climate changes: low snowpack caused primarily by high temperature. Calendar year 2014 was the warmest in California, and winter 2013-14 was the warmest on record in western Oregon. The outlook for spring and summer 2015 remains favorable for drought development. Agencies are beginning to see that this year provides an opportunity to consider how to adapt to climate change.

10:00 AM - 11:25 AM

(IN)VISIBLE NEXUS: INSIGHTS ON CLIMATE CHANGE FROM THE HUMANITIES

MODERATOR: STEPHEN SIPERSTEIN, UNIVERSITY OF OREGON, ENGLISH

DANIEL PLATT

'THE MONSTERS WERE A KIND OF WEATHER': GENTRIFICATION AND CLIMATE JUSTICE IN COLSON WHITEHEAD'S ZONE ONE,

"Every decade or so," writes the environmental justice scholar Robert Bullard, "Americans rediscover the city." Colson Whitehead's 2011 novel *Zone One* explores the social and environmental consequences of that rediscovery—consequences such as gentrification, displacement, and the apportionment of environmental hazards—which often disproportionately affect the poor and people of color. In particular, hazards associated with climate change, such as flooding, storms, and food scarcity, are represented both literally and metaphorically throughout the novel. In my presentation, I will argue that *Zone One* raises timely questions about the intersections between gentrification and climate justice. *Zone One* (2011) takes place over three days in the post-apocalypse: a plague has transformed most human beings into flesh-eating zombies, and much of civilization as we know it—the central government, systems of commerce, the electrical grid and communications systems—has collapsed. In *Zone One*'s narrative present, however, the plague seems to be ebbing, and the survivors have begun to reorganize and reconstruct those systems. The novel's protagonist, Mark Spitz, is part of a team of "sweepers," civilian survivors charged with clearing out the last remnants of the plague from a walled-off portion of lower Manhattan so that the office buildings can be reclaimed. *Zone One* explores the ways that racial and social hierarchies are deeply embedded in the infrastructure of the city and can be reanimated, zombie-like, even in the wake of societal collapse. Ultimately, *Zone One* suggests that social and environmental justice won't spring organically from the transformation of urban space. Instead, Whitehead suggests that building resilient cities—cities prepared to weather the effects of climate change—requires an enduring commitment to the everyday labor of place-making and community-building.

RACHEL ROCHESTER

SPECULATIVE MIGRATIONS: THE RHETORIC OF INTERSTELLAR COLONIZATION

In the face of widespread environmental degradation and the undeniable evidence of climate change, scientists, explorers, and artists alike are looking to the future. In "Speculative Migrations," I examine the ways in which novels can both inspire interstellar colonization and emphasize or obscure the ways in which colonization has left a legacy of environmental and social exploitation. Two complex artifacts form the nucleus of this argument: Hari Kunzru's 2012 novel *Gods Without Men* and the official materials of Dutch nonprofit Mars One. In *Gods Without Men*, Kunzru limns an idealistic U.F.O. cult and examines the ways in which patterns of exploitation are often repeated. As members of the cult speculate that interstellar colonization will resolve their social and environmental concerns, Kunzru condemns their plan by highlighting a human history of ecosystemic devastation. Although Kunzru's novel models the ways in which literature can remind readers of a fraught colonial history in order to underscore the necessity of environmental consideration, not all literary considerations of interstellar travel have proven so ecosystemically aware. Kunzru's critique of both global and interstellar imperial expansion is particularly salient when read in conversation with the expansionist rhetoric of the Mars One Mission, which

proposes to begin the development of a human settlement on Mars by 2024. The candidates to man the mission have furnished a series of public application materials that illuminate the influences that have inspired their interest in colonizing Mars, including many speculative novels. These materials also reveal startling oversights: although most candidates specifically express concern about the human behaviors that threaten to make Earth uninhabitable, many simultaneously articulate a desire to repeat environmentally destructive activities in the proposed colony. This paper will consider which rhetorical strategies, if any, might make visible such oversights in considerations of interstellar expansion.

SHANE HALL

DESOLATE ECOLOGIES: NARRATIVES OF RESOURCE SCARCITY IN RECENT SUB-SAHARAN AFRICAN FOOD AID PHOTOGRAPHY

Access to adequate amounts of nutritious food and clean drinking water constitute the necessary minimum, both physically and ethically, of environmental justice. Viewed through this lens, the persistence of global hunger stands as the most dire environmental justice issue facing the world. According to the “State of Food Insecurity in the World” annual report, nearly one in eight humans living on the earth experienced chronic hunger in 2013 (UN Food and Agriculture Organization). Sub-Saharan Africa contains the highest prevalence of chronically hungry people, with nearly 235 million people currently experiencing chronic hunger, and millions more facing periodic food insecurity in the form of undernutrition (UN FAO 2013). David Pellow writes that comprehensive theories of environmental justice need to incorporate emphases on “history and processes,” in order to describe the social roots of environmental inequality formation (EIF) (2000: 590-97). Yet as important as describing history and process is to theorizing EIF, it is equally important for environmental studies theorists to describe those mechanisms which obfuscate processes of EIF to scholars and broader publics alike. In this study I look to the photographic images of food aid recipients in Africa archived by the World Food Programme, the world’s largest food aid distributor, in order to describe how these images often deploy narratives of resource scarcity and global climate change that mislead and mystify the structural causes of poverty and hunger in the Sahel. I argue that while anthropogenic climate change may currently and in the future constrain agricultural production, it will only produce hunger within specific historical relationships that encompass the economic, social, and natural. I argue scholars invested in drawing attention to climate change’s grave hazards must be wary of emphasizing climate change independent of larger injustices within the global economy.

PAULA WRIGHT

JOHN JAMES AUDUBON AND ‘THE THING WITH FEATHERS’

Many are familiar with John James Audubon’s magisterial *Birds of America* drawings, but few are aware that Audubon composed *Ornithological Biographies* with the intent of publishing these lively prose passages alongside the life-like bird portraits. Throughout the *Biographies*, Audubon recounts several hunting and specimen-gathering excursions in preparation for taking a bird’s likeness. The vivid portraits conceal the artist’s struggle to keep his specimens from rotting while taking their likeness. Revealing what the portraits keep secret, Audubon’s prose passages disturb the empirical natural history specimen drawings with the ornithologist’s ghastly recollections of crawling through feet of detritus and being spooked by gothic imaginations. Many scholars accurately locate the paradox in Audubon’s work of what David Mazel describes as memorializing the American wilderness. Anxious that, even though the literature of James Fenimore Cooper and others chronicles the wilderness and the material of the wild disappearing, Audubon is nevertheless “prolific” with his gun, as Donna Haraway notes (*Primate Visions*

34). Mazel identifies Birds of America as a force in the increasing commoditization of nature. In this paper, I consider how Audubon's Biographies, read against changing methods in natural history at the time, reflect still unsettling visions of nature and the environment. I will focus on the ways in which Audubon's texts are simultaneously scientifically exact and startlingly evocative.

HANNAH FULLER

EXAMINING AND IDENTIFYING EFFECTIVE RHETORICAL STRATEGIES, MESSAGING, AND THEMES IN CLIMATE CHANGE BOOKS FOR A GENERAL AUDIENCE

Doomsday. Disasters. Rampant capitalism. Increasing CO2 emissions. These images and stories are ubiquitous in coverage on global climate change. Yet scare tactics are often far from empowering and fear of the future rarely inspires action. For those who seek solutions, there are a number of books for the casual, yet concerned, reader. Since global warming came to the international stage, notable authors like Bill McKibben, Thomas Friedman, and Naomi Klein have attempted to take it on as more than just an issue of atmospheric chemistry. These authors are not scientists, rather they are journalists or science writers who seek to translate climate science and activate lay readers by offering their solutions to the global climate crisis, and presenting scenarios of adaptation and hope for remediation. By reading and comparing these popular science books for a general audience I aim to identify their most salient arguments and strategies in order to create a rubric for more effective communication about climate change. I see these books as a potential archive of "best ideas" which tend to get drowned in the larger projects of the books but might be identified and carried into activist contexts. My hope is that the rubric "the best ideas about what to do about climate change" may be used to empower individuals and inspire action in communities.

11:30 AM - 12:30 PM

KEYNOTE SPEAKER

RILEY DUNLAP

HOW CLIMATE CHANGE BECAME CONTROVERSIAL: AN ANALYSIS OF THE CLIMATE CHANGE DENIAL MOVEMENT

Global warming had become widely recognized as a problem by the early 1990s, but a long-term and ever-evolving campaign to deny its reality and significance has turned contemporary climate change into a major controversy. The basic findings of climate science are constantly challenged by a growing set of interconnected actors who portray climate change as uncertain, even a hoax, leading significant segments of the public and numerous policy-makers to dismiss its importance—and thus the need to take action. Key actors in what has been termed the “denial movement,” the economic and ideological interests motivating them, and the primary strategies and tactics they employ will be outlined, with emphasis on how they have all evolved over the past quarter century.

Riley E. Dunlap is Regents Professor and Laurence L. and Georgia Ina Dresser Professor in the Department of Sociology at Oklahoma State University, and previously served as Boeing Distinguished Professor of Environmental Sociology at Washington State University. A Fellow of the American Association for the Advancement of Science and the American Psychological Association, Dunlap is also Past-President of the International Sociological Association’s Research Committee on Environment and Society. One of the founders of environmental sociology, Dunlap’s recent work has focused on the socio-political controversies surrounding climate change. He chaired the American Sociological Association’s Task Force on Sociology and Global Climate Change, and is senior editor of the forthcoming volume produced by the task force: *Society and Climate Change: Sociological Perspectives* (Oxford University Press, 2015). His prior books include *the Handbook of Environmental Sociology* (Greenwood Press, 2002) and *Sociological Theory and the Environment* (Rowman-Littlefield 2002), both of which he co-edited. Dunlap has received a number of awards for his scholarly work, most recently the William R. Freudenburg Lifetime Achievement Award from the Association of Environmental Studies and Sciences in 2012.

12:30-1:00

LUNCH BREAK

1:00 PM - 2:25 PM

CULTURE AND CLIMATE CHANGE

MODERATOR: BURKE HENDRIX, UNIVERSITY OF OREGON, POLITICAL SCIENCE

CARSON VILES

GUIDELINES FOR CONSIDERING TRADITIONAL KNOWLEDGES IN CLIMATE CHANGE INITIATIVES

As climate impacts become increasingly apparent, both tribal and non-tribal communities are working to adapt and mitigate climate impacts. The use of Traditional Knowledges (TKs) is being explored increasingly in tribally led and non-tribally led adaptation and mitigation efforts. While adaptation efforts that rely on TKs have positive potential, there is also potential for harm to TKs and Indigenous communities. In the United States, current collaboration between tribes, Traditional Knowledges (TKs) holders and federal agencies are becoming increasingly popular. However, there is insufficient guidance for either TKs holders or federal agencies to help ensure effective collaboration. Climate initiatives involving TKs have the potential to be mutually beneficial, equitable and effective. However, they also have the potential for misappropriation and infringement on Native peoples' rights. This paper provides a framework to increase understanding of issues relating to access and protection of TKs in climate initiatives and interactions between holders of TKs and non-tribal partners. This is a collaborative project undertaken by a self-organized, informal group of indigenous persons, staff of indigenous governments and organizations, and experts with experience working with issues concerning traditional knowledges. Carson Viles participated in this workgroup both as a contributing author to the paper "Guidelines for Considering Traditional Knowledges in Climate Change Initiatives," and as a lead author for the annotated bibliography that accompanies the Guidelines. This work is part of the Pacific Northwest Tribal Climate Change Project, which is a collaboration between the University of Oregon Environmental Studies Program and the USDA Forest Service Pacific Northwest Research Station.

CRAIG KAUFFMAN

SCALING UP BUEN VIVIR: GLOBALIZING LOCAL ENVIRONMENTAL GOVERNANCE FROM ECUADOR

How does the population of a small Ecuadorian province influence the development strategies pursued nationally and consequently push the global conversation toward an alternative model of sustainable development? This paper explores watershed management reform in Tungurahua, Ecuador, to analyze how local communities challenged the dominant international model of sustainable development and—through a process of negotiation, learning, and network construction with international partners—produced an alternative model infused by indigenous norms of human wellbeing, or *sumak kawsay*—*el buen vivir*. The institutionalization of these norms was a catalyst for the development of Ecuador's National Plan for Wellbeing (Buen Vivir) and Ecuador's quest to change the way the world thinks about development and sustainability. This case illuminates how local populations working with competing interpretations from international agendas construct new environmental governance regimes, and how the scaling up of these regimes carry local norms of environmental management to the global level.

LIZ CURRY

THE DENIAL OF SPECTACLE: IAN MCEWAN'S SOLAR IS CLIMATE FICTION THAT REDEFINES DISASTER

Apocalypse, as a default plot contrivance for many Cli-Fi novels, reflects a popular mythological engagement with environmental collapse. Apocalyptic narratives employ a discourse of doom that resists a more vulnerable rhetorical position—one that accepts the uncertainty of climate change and its spatial and temporal diffusiveness. Novels that rely on pre-, post-, and temporarily immediate apocalyptic events represent climate change not as the slow process that it proves to be, but rather feed into modern impatient desires to see catastrophe strike. Yet, the realities of climate change exceed such simple narrative contrivances. I argue that climate fiction grounded in an anti-apocalyptic realism best represents the always already distorted climate. Disaster is not imminent, as the dominant climate discourse contends, but is (in environmental terms) well underway. I look to contemporary critiques, non-fictional accounts, and literary representations of climate change that attempt to illustrate the profound tragedy—the scope, the slow creep, and the multitudinous permutations—that is the end of the world as we know it. I also focus largely on the novel *Solar*, in particular, as an alternative to apocalypse-oriented novels because it represents many of the problems confronting both the planet and climate change discourse. Ian McEwan's novel begins to represent the scope of climate change at the macro- and micro- levels, which elides most narratives that invoke apocalyptic themes. *Solar*'s flawed protagonist invites criticism as he stands in for a culture preoccupied with gratuitous desires and fixated on comfort, but the novel also registers, at several points, the ongoing tragedy that is climate change—a tragedy to which the individual contributes and cannot conceivably escape. My presentation will include a read paper along with a brief (4-5 slide) PowerPoint presentation that displays images and a few main textual quotes.

APRIL ANSON

FAILING BETTER: THE CHALLENGES FOR CLIFI FORM

In a moment marked by consumption without consequence – reliance on seemingly invisible forms of energy and intentionally obscured forms of violence – the climate crisis has elicited calls for Climate Fiction (CliFi) to cultivate an environmentally responsive readership. However, theoretical and formal foundations for conceiving of such a genre have tended to rely on Western epistemological structures, ways of knowing resonant with the consumptive narrative of progress and infinite growth central to scientific racism and US nationalism, and productive of ongoing cultural and environmental devastation. Contrasting Ian McEwan's CliFi novel *Solar* with Thomas King's *On The Turtle's Back*, this project reads both novels as offering an important investigation into how a narrative's regard for failure can work to mobilize or pacify imagination. Building on theorizations of environmentally and politically potent forms, this essay compares *Solar*'s failures to *On The Turtle's Back* for how they suggest a mode of "survival ecology" that can inform CliFi's genre considerations. As a lens, survival ecology makes clear that if climate change is certain to defy our expectations, climate fiction must privilege ethical imagination as well as the possibility of adaptation and survival in the face of such overwhelming and unsettling failure. Locating these novel's most provocative "failures," the presentation turns to Greg Johnson's IPCC Haiku and Warren Cariou's "Tarhands: A Messy Manifesto" to investigate how survival ecology may be a useful lens for considerations of genre and form in climate change fiction.

REFINERIES OF DENIAL: THE FOSSIL FUEL POWER STRUCTURE OF CLIMATE CHANGE DENIAL

This paper builds on the work of Brulle (2013) and Dunlap & McCright (2011) to advance a more general proposition about the contingent role of energy industry influence over energy policy. Beyond the single case analyzed in the paper, our comparative approach advances this central proposition: energy corporations with dense network ties to the central business organizations of a country utilize points of class leverage to dominate policy discussions on energy development, impair assessments of changing energy needs, promote denial of environmental problems associated with the dominant energy industry, and limit solutions for addressing concerns around climate change and environmental contamination. In short, the political capacities of energy-industries are enhanced by their position within intercorporate networks. Using original data to test this and other propositions relating to previous research on climate denial networks, we trace the series of ties between participants at two annual Koch Industries political meetings to a larger fossil fuel network and conservative political coalition in the US, 2007-2012. Every major climate denial organization, as listed by Brulle and Dunlap, is within 2-steps of the Koch meeting participants.

2:30 PM - 3:55 PM

RACE OR SNAIL PACE? HUMAN RESPONSES TO CLIMATE CATASTROPHE

MODERATOR: MARK CAREY, UNIVERSITY OF OREGON, HONORS COLLEGE

GALEN MARTIN

CLIMATE CHANGE: IMPLICATIONS FOR GLOBAL AGRICULTURE AND FOOD SECURITY

The paper considers the reciprocal relationship between climate change and agricultural practices. Food production is a major contributor to greenhouse gas emissions. At the same time, climate change, especially climate volatility and extreme weather events, heightens the challenge of meeting an increasing demand for food.

MEIAN CHEN

SEIZING THE OPPORTUNITY: CLIMATE POLITICS IN CHINA

Over the past decade, China's climate governance has undergone a shift from being an aggressive opponent to an active participant for greenhouse gases emissions cuts. China has proposed its own voluntary quantified emissions reduction target in international climate negotiation, and is starting to adopt carbon-trading scheme, increase investment on the development of green technology and renewable energy and set up mandatory emissions cut target in its Five-Year Plan. The paper seeks to explain the puzzling shift in China's climate governance. Drawing on recent fieldwork, this paper explores the interaction among governmental officials, the epistemic community, environmental NGOs, and business groups, and to what extent this diverse set of actors are able to shape climate governance according to their own interests and objectives. I demonstrate the ways in which these groups use economic and political benefits generated by climate mitigation to provide an important opportunity for the Chinese government to achieve its own economic and environmental goals.

TOM BOWERMAN

HOW MUCH IS ENOUGH? A PUBLIC OPINION PERSPECTIVE

Climate-change research suggests that civilization and its ecological underpinnings may face catastrophe without profound changes in our collective cultural behavior. Yet, meaningful policy responses seem largely insufficient. This article describes a body of original research from the state of Oregon in the United States aimed at uncovering alternative pathways around the current stalemate. Drawing from sixteen studies conducted from 2008 to 2012, I find evidence of strong grassroots attitudinal support for reducing consumption, with agreement in the 70–88% range. Broad cultural agreement about excess consumption bridges ideological divisions regarding climate change. Seeing climate change as a symptom of the underlying problem—consumption—may reveal new solutions. The studies find deconsumption policy support to be marginal and at odds with policy-leadership views favoring economic growth. However, this work observes evidence of grassroots, consume-less attitudes and behavior despite ongoing policy to stimulate growth. The article discusses motivations, barriers, dissonance, and behavior about lowering consumption.

MARCUS MAYORGA

THE PSYCHOLOGY OF “A DROP IN THE BUCKET”: HOW HUMAN PERCEPTION AND EMOTION INFLUENCE PRO-ENVIRONMENTAL ACTION

In a great many situations where we are asked to aid or volunteer in environmental efforts, we are unable to solve the larger global problem. For example, driving your car less will lower greenhouse gas emissions but will not solve the larger looming problem of global warming. What causes some individuals to persevere in environmentally focused behaviors while others view it as a “drop in the bucket”? What are the emotional and motivational consequences of feeling like we are never doing enough? Decision making research can provide an empirical foundation for how the human mind interacts with large scale crises, including environmental concerns. Our research documents that very basic human cognitive properties like perception and emotion may be misguiding our motivations in large-scale humanitarian efforts. Motivating pro-environmental action in the shadow of massively deteriorating ecosystems is a dire concern for conservation efforts and policymakers alike.

ROBIN QUIRKE

WHEN VALUES AND BEHAVIORS ALIGN: A STUDY OF INDIVIDUALS WITH PRO-ENVIRONMENTAL VALUES WHO LIVE A LOW CARBON LIFESTYLE

Most Americans with pro-environmental values have been slow to make lifestyle choices that generate smaller, more globally sustainable carbon footprints. There is abundant research that aims to explain why making these environmental lifestyle changes are often slow to materialize, even when individuals have pro-environmental values. But what about the individuals who have made deliberate, calculative choices in how they have set up their lives in order to move closer to an equitable global carbon footprint? This unusual population is not always easy to find, but they do exist. Are they more prosocial, moralistic, altruistic, and/or pro-environmental than the average recycler? In reviewing the results of 16 interviews with individuals from this unique population, two striking commonalities emerged: utilitarianism and Universalism.”

4:00 PM - 5:25 PM

PROMPTING HUMAN CHANGE TO ADDRESS CLIMATE CHANGE

MODERATOR: RONALD MITCHELL, UNIVERSITY OF OREGON, POLITICAL SCIENCE AND ENVIRONMENTAL STUDIES

SONYA CARLSON

ENERGY FLOWS AND EMISSIONS AT THE UNIVERSITY OF OREGON

Under the American College and University Presidents' Climate Commitment, the University of Oregon is obligated to eliminate its CO2 emissions by 2050. It's an enormous challenge. The UO currently relies on a mix of ten distinct energy resources to power all institutional activities. Each has a unique carbon signature. This presentation summarizes the University of Oregon's complex flow of energy and greenhouse gas emissions. Our highly intuitive infographics document changes over time to UO's energy portfolio, efficiency improvements, behavior change, and the cumulative impacts these have on annual institutional CO2 emissions.

THIBAUD HENIN

INFLUENCING POLICY THROUGH THE USE OF PRIVATE TRANSNATIONAL STANDARDS

I argue that under certain conditions the adoption of private transnational standards by firms provides them with leverage in government negotiations over regulatory policy stringency. I define policy stringency as the opportunities costs of continuing the regulated behavior, and private transnational standards as those which are established by private authorities without the involvement of state or international organizations. There are two parts to my argument: firm preference formation and the necessary conditions for firms to use private transnational standards as a mechanism of influence. Firms which are cost-efficient and in highly competitive markets, where entry-costs are low and market saturation is high, prefer high stringency regulatory policies. These act as barriers of entry to less efficient competitors and allow cost-efficient firms to capture market share. Firms that are not cost-efficient or are in less competitive markets prefer lower stringency policies. Firms with high stringency preference will adopt voluntary private transnational standards in order to negotiate with states regulatory policy increases to the same level of stringency as the voluntary standard. Firms with low stringency preference will adopt voluntary private transnational standards in order to credibly commit to industry self-regulation, providing leverage in regulator-firm negotiations and preempting more stringent regulation. I then present a general model for both how these preferences lead to changes in state policy stringency. Initially, states have an existing policy stringency, and firms have their preferences on state policy stringency. At the first stage firms either believe that policy stringency may increase in the future, or that an opportunity to gain market share from competitors exists. Once this belief is established, a sufficient proportion of firms within the industry must cooperate in order to pool their influence to solve the collective action problem and be able to make credible commitments. At the next stage, governments and firms must be willing and able to negotiate. If firms are successful, they are able to convince regulators to change stringency towards their preferences. I argue there are eight conditions necessary for firms to be able to successfully follow this process. The first three conditions are exclusive to 'market capture,' the attempt by firms to have states increase in stringency (international regulatory policy convergence; private standard convergence at transnational level; and market predominance of cost-efficient firms). The following two conditions are exclusive to 'preemption,' the attempt to maintain or lower state

regulatory stringency (strength of standard's compliance mechanisms; and private standard's convergence in firms at domestic level). The final three conditions are used in both instances (non-trivial compliance-costs of policies; institutional structure of state-firm relations; and presence of industrial association). I conclude by presenting my research design and the operationalization of my variables for each of the conditions and preference formation. I focus on two issues within OECD countries: the adoption of ISO 14001 by the energy sector and its influence on greenhouse gas policy stringency, and the adoption of SA8000 by the manufacturing sector and its influence on labor regulation.

MILES GORDON

CLIMATE CHANGE UNILATERALISM: AN EXAMINATION OF THREE SOUTH AFRICAN CITIES

This paper seeks to examine unilateral action taken by individual cities on Climate Change. I do this through the lens of the Tragedy of the Commons, which is an excellent description of the problem of Climate Change. I test the following hypotheses as to the cause of this action: local and formalized knowledge of the problem, a strong civil society that can apply pressure, transmunicipal network ties that help disseminate effective ideas, and the realization of co-benefits to action on the part of the local government. The cities I compare are within the nation of South Africa, a nation in the Global South that has relatively meager resources and is hence subject to the economic logic of a developing country. I compare Durban (a city that has taken substantive action) vs. Khara Hais and George (two cities that have not taken substantive action). I compare them based on the above hypotheses, and find that motivation for climate change action is based in part on all four of these, but in the end the most effective motivator is the realization of co-benefits. This is significant to the issue of climate change action because it shows how best to pressure local governments to take their own action, thus creating an opening for a movement on climate change that is truly "from the ground up".

ERIN MOORE, TESSA CRESPO, SIYUAN ZHAO, NICKI GHISELLI, AND CAROLYN LIEBERMAN

BIOSPHERE/ATMOSPHERE: ARCHITECTURE AND CARBON CYCLING

The built environment is responsible for more than half of US annual carbon emissions. At the same time, forests in the US are responsible for sequestering more than ten percent of annual carbon emissions. This paper describes the work in progress of students in the winter and spring architecture capstone design studios who are working in this context—at the intersection of greenhouse gas emissions in the construction and operation of buildings and the sequestration of carbon in wood and other biotic material. Using the speculative design of laboratory buildings, the students are asking: What is a new architecture that is positioned purposefully in global carbon cycling? How can this new architecture manifest the potential of biogenic materials (wood) and of the material nature of the atmosphere to shape the built environment? This paper describes this speculative design studio work in the context of current issues in global carbon cycling and climate change and the role of design (in education and in practice) in responding to this context.

RICHARD YORK AND JULIUS MCGEE

DOES RENEWABLE ENERGY LEAD TO A DECOUPLING OF CO₂ AND ECONOMIC GROWTH?

Increasing the proportion of renewable energy used in economic processes is often, implicitly or explicitly, understood as an avenue toward decoupling economic development and CO₂ emissions. However, due to

complexity of economic practices, it is often the case that production processes aimed at decreasing specific forms of environmental degradation fail to induce any meaningful reduction of environmental stressors. Here, focusing specifically on electricity, we demonstrate that not only is the average pattern across the world over the past fifty years one where increases in the proportion of renewable electricity sources intensify the level of CO₂ emitted per unit of GDP, but also one where increasing economic output decreases the amount of CO₂ reduced by renewable electricity sources. Our results further stress the need for conservationist efforts in energy production, as they demonstrate that diversifying electricity sources is not enough to generate a decoupling of economic development and CO₂ emissions.

5:30 PM – 7:00 PM

RECEPTION