University of California

President’s and Chancellor’s
Postdoctoral Fellowship Programs

ABSTRACTS

2019 Academic Retreat
Saturday, April 13, 2019

UCLA Lake Arrowhead Conference Center
Arts & Humanities
Pineview Room

9:00 – 9:30  Jolie Chea  
(Cambodian refugees, US Empire)
*This Is War: The Politics of Refuge and the Logic of Incorporation*

9:30 – 10:00  Loubna Qutami  
(Palestine, Refugees, Youth Movements, Transnational Struggle)
*Contested Movement(s): Politics, Solidarity and the Nation for Palestinian Refugee Youth*

10:00 – 10:30  Dena Al-Adeeb  
(Postcolonial Studies, Visual and Cultural Studies, Contemporary Art, Architecture)
*The Architecture of War: The U.S. Invasion of Iraq and Its Cultural Engineering Project*

10:30 – 10:45  BREAK

10:45 – 11:15  Heather Akbarzadeh  
(Dance & Performance studies, Transnational feminist & queer theories, Diasporic Iranian St.)
*Do Iranian Dancers Need Saving? Savior Spectatorship and the Production of Iranian Dancers as 'Objects of Rescue'*

11:15 – 11:45  Anna Boncompagni  
(Social epistemology, hinge epistemology, epistemic injustice, feminism, queer studies)
*New philosophical perspectives for the study of prejudice*

12:00 – 1:00  LUNCH

1:00 – 1:30  Yue Chavez  
(Native American and Latin American art, California missions)
*Indigenizing California Mission Art Studies*

1:30 – 2:00  Felicia Lopez  
(Race, Culture, gender, indigenous languages and writing)
*Women, Gender, and Sexuality in the Central Mexican Codices: Challenging Conceptions of an Aztec Patriarchy*

2:00 – 2:30  Jasmin Young  
(African American History/Studies, Gender Studies, History)
“It is our duty to defend all oppressed peoples”: Armed Resistance as a Feminist Strategy for Liberation

2:30 – 2:45  BREAK

2:45 – 3:15  Christopher Chamberlin  
(Black studies, feminist theory, critical theory, psychoanalysis, medical humanities)
*Gender Trouble in the Antiracist Clinic: Sexuality and Segregation After Jim Crow*

3:15 – 3:45  Wrap-up and Networking
Arts & Humanities

MODERATORS
Julie Carlson, British Romantic-era writing, literature and mind, cultural politics
Douglas Haynes, History, Humanities, Equity, Diversity, Inclusion and Free Speech

AUDIENCE MEMBERS
Michael Accinno*, Nineteenth-century American music and culture, disability studies
Neda Atanasoski, Race and Technology, Religion, War and Nationalism
Alisa Bierria, carceral studies, gender violence, feminist philosophy
Susan Carlson, modern drama, political theatre, women’s studies
Xochitl Chavez, Mexico, Expressive Culture, Indigenous studies, Ethnomusicology, Latin American Studies
Miroslava Chavez-Garcia, Chicana/o history, Chicana/o studies, ethnic studies, immigration, juvenile justice
Annalisa Coliva, Philosophy, Humanities, Social Sciences
Ofelia Cuevas, race, prisons, policing
Jemma DeCristo, Black Studies, Sound Studies, Trans Studies
Emily Hue, queer/gender & sexuality studies, diaspora studies, performance, visual art, Asian American studies
Jennifer Kelly, Palestine, solidarity, tourism, comparative colonialisms, queer studies, transnational feminisms
Mariam Lam, Literature, Film, Arts, Area Studies, Critical Race & Ethnic Studies
Julia Lee, Asian American literature and culture, African American literature and culture
Jerry Miller, Race, Theory, African American Studies, Ethics, Gen/Sex Studies
Nick Mitchell, Feminist Theory, Critical University Studies, Marxism, Race and Ethnic Studies
Natalia Molina, Latinx Studies/Immigration/Race and Space
Dana Murillo, Ethnohistory, Latin America, women, early modern
Anjali Nath, Militarization Studies, Critical Ethnic Studies, Transnational American Studies
Bettina Ngweno, Space, Citizenship, Race, Ethnicity, Property, Indian Ocean, Africa, Latin America
Ben Olguín, Literature, Art, Popular Culture, Politics, Ideology, Revolution
Felicity Schaeffer, Feminist Science and Technology, Latin American-Latinx Borderlands
SA Smythe*, Black liberation, citizenship, colonial exchange between Europe & Africa
Eric Stanley, trans/queer studies, postcolonial theory, critical theory

*Current Chancellor’s or President’s Postdoctoral Fellow
Jolie Chea
President’s Postdoctoral Fellow
Comparative Literature and Languages, UC Riverside

THIS IS WAR: The Politics of Refuge and the Logic of Incorporation

Beginning in 1975, the United States government facilitated the mass resettlement of Laotian, Cambodian, and Vietnamese “persons of special humanitarian concern to the United States” to its body politic. Over a million Southeast Asian persons were legally authorized for admission to the United States as refugees by the Carter administration under the auspices of the revised 1980 Refugee Act. In the post-9/11 climate, the United States government established a memorandum of understanding with these respective governments for the repatriation of approximately 16,000 former refugees to the aforementioned nations. To date, roughly 2,000 Southeast Asian individuals have been deported. Over the last decade, federal campaigns to remove undocumented persons as well as lawful permanent citizens with criminal records have greatly intensified, aiming to carry out the removal of another 14,000 persons from the US body politic to the region formerly known as “French Indochina.”

Through an investigation and analysis of the Haing S. Ngor murder trial, which convicted three young men (two of whom were children admitted to the US as Cambodian refugees) for his death, this talk engages the intersection of global racial regimes and juridical practices alongside refugee policies to analyze and unpack what I call the settler colonial logic of incorporation, which I argue animated the military and imperial re-settlement of people from Laos, Cambodia, and Vietnam to the US as refugees of war. By tracing the “refugee” back to a history of global racialized warfare and imperialist state violence, I show how the state’s incorporation of Cambodian refugees into the US body politic is an extension of ongoing efforts to discipline and contain radical opposition to a US nation-building project.
Contested Movement(s): Politics, Solidarity and the Nation for Palestinian Refugee Youth

My book project is a transnational ethnographic account of Palestinian youth movements before and after the 2011 Arab Uprisings. Situated in the context of the post-1993 Oslo Accords—or negotiations and peace process paradigm—my work investigates the way Palestinian youth in the homeland and scattered across exile are envisioning and acting out collective politics which contest the limitations and extremities of the nation state, colonial occupation, dispossession and borders, and racial capitalism. I have compiled my ethnographic archive through attending forty-six Palestinian youth convenings between 2006 and 2018 as a founder, member and leader within the Palestinian Youth Movement (PYM). I also conducted interviews with fifty Palestinian youth from Palestine, Jordan, Lebanon, Syria, Greece, Sweden, Denmark, France, Italy, Turkey and the United States from 2016 to 2018.

In this presentation, I examine how youth have come to articulate, practice and theorize politics despite, and perhaps because of, an ontology of Nakba (catastrophe) Palestinians have come to endure. I specifically focus on the experiences of Palestinian refugee youth from Syria who have arrived to Greece between 2015 and 2017 alongside thousands of refugees from across the African and Asian continents. In examining the way they theorize and practice the making of home and forge relationships of solidarity in Greece, I tend to the relationship between contemporary iterations of, what Asef Bayat calls, 'social non-movements' and collective organized movement cultures historically practiced in Palestinian and Third World political traditions. This presentation thus sheds light on the importance of the historical Palestinian refugee experience as part of global systems of dispossession, exile, war, and catastrophe. It also illuminates how new re-orderings of power are enabling Palestinian refugee youth to globalize their understandings of power, pain, survival, politics, the nation, solidarity and movement through their own experience of multiscalar dispossession.
The Architecture of War: The U.S. Invasion of Iraq and Its Cultural Engineering Project

The Architecture of War critically investigates the relationship between art, architecture and archaeology and militarized visual culture, analyzed against the historical and political backdrop of imperial and neoliberal processes in the Middle East. Drawing from the fields of postcolonial theory, architecture, archaeology, visual and cultural studies, The Architecture of War sheds light on the United States' 2003 invasion and occupation of Iraq. It specifically examines the United States' military occupation of Iraqi cities and heritage sites (archeological and architectural) which has resulted in their destruction. It further investigates the U.S. military bases established in relation to the archeological sites and architectural monuments as a performative spectacle of power. The Architecture of War examines the ideologically driven programmatic destruction of Iraq and the United States' ongoing use of cultural annihilation as a means of conquest, erasure, and reconfiguration of societies' collective memory, history, and identity. It considers the ways in which the U.S. military strategies of disfiguring the representational monuments of Iraq is part and parcel of the dismantling process of the Iraqi nation state, in order to remap, reimagine, and reconstruct space through a long-term agenda in the service of capital and empire. It situates these acts within representational practices of empire building and link them to a colonial legacy, U.S. hegemonic control (geo-political, socio-economic, and military) of the region as it relates to neo-liberal globalization.
Do Iranian Dancers Need Saving? Savior Spectatorship and the Production of Iranian Dancers as ‘Objects of Rescue’

Because of Iranian state-implemented restrictions on public dance performance, effective since the 1979 Islamic Revolution, diasporic spaces are often constructed as offering Iranian dancers the unconditional freedom to fully realize themselves as artists. In this narrative, Iranian dancers gain agential freedom — a dancer’s subjectionhood — only through non-Iranian spaces. I argue that this account constructs Iranian dancers as what transnational feminist scholar Inderpal Grewal calls “object of rescue.” Building upon transnational feminist analyses on Euro-American (neo)colonial “saving” enterprises, this talk draws critical parallels between the militaristic imperative to “save” Muslim women at the start of the US-led War on Terror and the discursive frameworks that position Iranian dancers as needing to be saved from the Iranian state, their families, or from Islam, which ostensibly forbid them to dance. Drawing on research from my larger book project, the talk focuses specifically on dancer-choreographer Afshin Ghaffarian, who was granted asylum in France in 2009. I analyze the French reception of Ghaffarian’s live performances and the biographical dramatic film, Desert Dancer (2014), which portrays Ghaffarian’s life as an aspiring dancer in Iran and his defection to Paris. I develop a theory of what I call savior spectatorship, a kinesthetic looking practice that operates within transmedia environments wherein discourses and images (static and moving) construct Iranian dancers as victims and their Euro-American and diasporic audiences as compassionate saviors. My theorizations of savior spectatorship complicate prevalent assumptions that hold active spectatorship and kinesthetic empathy as inherently critical or politically progressive acts of engagement with dance performance. Instead, I interrogate how dance becomes a barometer with which to measure modernity, freedom, and humanity, and how savior spectatorship of Iranian dancers constructs a model of Iranianess that fits all too neatly within Euro-American geopolitical paradigms that position Iran as backward and pre-modern.
New philosophical perspectives for the study of prejudice

This paper integrates two recent perspectives in contemporary epistemology in order to offer a new conceptual analysis of prejudice. The first perspective, based on research on epistemic injustice, focuses on the damage done to speakers when they are not deemed credible due to prejudices concerning the social group they belong to. According to this approach, there is a prejudice when there is a widely held disparaging generalization associating a social group with one or more attributes, and this generalization or stereotype is held notwithstanding counter-evidence. In the presence of a prejudice, a person belonging to a discriminated social group suffers from a credibility deficit that results in them being diminished as a knower, and ultimately as a human being. But what changes in the epistemic status of a prejudice when it is seen as a prejudice, and not merely as a non-culpable generalization? Current research on epistemic injustice leaves this issue still unexplored. With the aim of shedding light on this point, I turn to the second perspective I am considering, hinge epistemology. Inspired by Ludwig Wittgenstein, this approach investigates the nature of those basic background assumptions that are normally taken for granted and go unquestioned in our ordinary epistemic practices. In particular, it highlights that some background assumptions play a normative role in the definition of what can and what cannot count as evidence (or counter-evidence). Once applied to prejudices, hinge epistemology suggests that in order for a prejudice to be seen as such, a shift in its epistemic nature must occur: it must lose its normative status and turn into an ordinary empirical proposition. The combination of research on epistemic injustice and hinge epistemology allows us to see this hitherto overlooked aspect. On this basis, additionally, we are in a better position to identify those features in a society that can help unmask the prejudicial nature of some of its background assumptions.
Indigenizing California Mission Art Studies

California Indian artists were vital to the artistic and architectural development of California’s Franciscan missions, yet their contributions remain overshadowed by a nostalgia for a mythical Spanish past. In a series of case studies rooted in historical moments that shaped California’s political and economic landscape, I argue for Indigenous agency and resilience. Prior to the 1769 arrival and invasion of Franciscan missionaries and Spanish soldiers, California’s first peoples relied upon locally-derived materials. Colonization brought invasive species and foreign lifestyles that threatened to disrupt Indigenous spaces and place-making practices. Through close investigation of the visual and built landscape of three missions in southern California, I identify the survivance of Indigenous knowledge. Drawing upon ancestral knowledge of native plants, pigments, and stone, the Chumash and Tongva people claimed the missions as extensions of California’s Native landscape. By weaving baskets, sculpting statues, constructing traditional houses, and performing Indigenous rituals, Chumash and Tongva artists and practitioners subverted the colonizers’ attempts to replace local religion and customs. Informed by my Tongva ancestry and art historical training, I bring an Indigenous perspective and a decolonizing methodology to this re-interpretation of California mission art and architecture which positions California’s first peoples as active participants who negotiated the colonial project for their own needs.
Felicia Rhapsody Lopez  
President’s Postdoctoral Fellow  
Native American Studies, UC Davis

*Women, Gender, and Sexuality in the Central Mexican Codices: Challenging Conceptions of an Aztec Patriarchy*

In popular media and culture, the ancient Nahua people of Central Mexico, which includes the people commonly known as the Aztecs, are portrayed as a patriarchal society of warriors. This mischaracterization is often perpetuated by Western scholars, who largely depend on first-hand accounts by Spanish conquistadors, whose tales of Native “savagery” sought to justify their own violence against Native peoples. Native Nahua and other indigenous matriarchal societies continue to be understood through the lens of those who colonized them, and these harmful representations continue to serve as a justification for their oppression and subordination. Today, there are 12 remaining precontact texts (called codices) from Central Mexico, with a handful of these from Nahua regions. By examining these texts, stone carvings and other art, and early colonial alphabetic Nahua-authored documents, I seek to advance the Native feminist goal, as discussed by Mishuana Goeman & Jennifer Nez Denetdale, (2009), of decolonizing our understanding of Native conceptions of gender, womanhood, and sexualities. In centering Nahua and Aztec self-representations, I reveal that women, women’s sexuality, and gender fluidity all held sacred significance within their religious traditions prior to colonization.
"It is our duty to defend all oppressed peoples": Armed Resistance as a Feminist Strategy for Liberation

This presentation centers on the Black Women’s Liberation Committee (BWLC), a SNCC caucus established in 1968 which evolved into the Third World Women’s Alliance (TWWA). I trace and analyze how the TWWA organized, trained, and developed Third World women to fight capitalism and the ways in which their efforts enhanced the national liberation struggle by attracting women who were not interested in joining gender-mixed organizations or who were turned off by the machismo in other groups like the Black Panther Party (BPP).

TWWA directly challenged the discourse of masculinity that permeated much of the Black Power movement. While some groups designated men as warriors for the revolution and formed all-male cadres, TWWA members believed that women had a significant role to play in armed struggle. They identified Black and Third World women as one of the most revolutionary forces confronting the U.S. ruling class. Although other revolutionary Black Nationalist organizations claimed to be the “vanguard,” I argue that the TWWA was unique in its assertion that Black women were well positioned to draw the masses into revolutionary politics because of their potential to be the most class-, race-, and gender-conscious and politically advanced group.

I contend that the TWWA approach differed from other revolutionary organizations and the Black feminists who were active within them. Although women in the BPP rejected the masculinist rhetoric of armed self-defense and were trained in karate and the use of firearms, they had to struggle with Panther men to be considered revolutionary fighters. The TWWA assumed that women were capable and valuable members of the Black liberation struggle—and central to the fight for freedom. Drawing on Triple Jeopardy, the TWWA newspaper, archival materials and oral histories I discuss the group’s revolutionary feminist vision.
Gender Trouble in the Antiracist Clinic: Sexuality and Segregation After Jim Crow

Contrary to the belief that psychoanalysts remained disinterested in questions of race and power, practitioners during the Civil Rights era analyzed men, women, and children with affective attachments to gendered signifiers of racial blackness. A motley crew of clinicians published accounts of their analyses in case histories that sought to clarify the sexual function of antiblack racism and to theorize how the unconscious mind contributed to the reproduction of racial dominance. These inquiries were compelled by the epistemic pressure that contemporaneous movements for social justice applied to nearly every branch of scholarly investigation. Yet they were also enabled by a long history of critical theorizing that conceptualized racism as both an adjunct to slavery and a psychological structure that preserved the color line after abolition.

In this talk, I present an intellectual history of the concept of racism, from Frederick Douglass’ critiques of “colorphobia” to the scientific formalization of racism by anthropologists and psychoanalytic social theorists in the 1930s. This historiography charts how Freudian theory politicized the unconscious but also how the foreclosure of a Freudian theory of the subject by “psychocultural” theorists served to authorize modern antiracist biopower. This overview of the concept of racism is followed by a contrastive reading of a postwar case history, a 1971 analysis of a New York teacher obsessed with pursuing sexual encounters with black men. I analyze how her fantasy – “black is beautiful” – appropriates the signifiers of Black Power to structure her libidinal mode of reproduction, how her racialized enjoyment shatters the cohesion of normative (white) gender and identity, and how this deconstruction indexes the historical transition between Jim Crow segregation to post-Oedipal structures of antiblackness.
9:00 – 9:30  **Steven Pan**  
(Cognitive psychology, learning and memory, education)  
*Interleaved practice: effects of training sequence on learning, remembering, and transfer*

9:30 – 10:00  **Dequina Nicholas**  
(Immunology and Metabolic Disease)  
*Fatty Acid Metabolites Combine with Inefficient β oxidation to activate Th17 Inflammation in Human Type 2 Diabetes*

10:00 – 10:30  **Michelle Antoine**  
(synaptic and circuit homeostasis in the normal and diseased brain)  
*Synaptic and circuit homeostasis in mouse models of Autism*

10:30 – 10:45  BREAK

10:45 – 11:15  **Anum Glasgow**  
(protein biophysics)  
*Computational design of a modular sense/response system*

11:15 – 11:45  **Didem Sarikaya**  
(How cell signaling pathways evolve to affect adult health)  
*The ecology and cell biology of life history evolution*

12:00 – 1:00  LUNCH

1:00 – 1:30  **Catera Wilder**  
(systems biology, mathematical modeling, dynamic cellular signaling, innate immune response)  
*Interferon type-specific control of ISGF3 dynamics*

1:30 – 2:00  **Christian Guerrero-Juarez**  
(Regenerative Medicine/Single cell genomics/Innate Immunity/Human skin disorders)  
*Single cell analyses reveals fibroblast heterogeneity and adipocyte progenitors in murine skin wounds*

2:00 – 2:30  **Emily Delaney**  
(Genetics, genomics, and evolution)  
*Making females female: on the many ways to evolve female-specific traits*

2:30 – 2:45  BREAK

2:45 – 3:15  **Suzanne Pierre**  
(global environmental change, biogeochemistry, microbial ecology, plant ecology)  
*Terrestrial Plant and Microbial Nutrient Limitation: Global Change Drivers and Mechanisms*

3:15 – 3:45  **Marilia Palumbo Gaiarsa**  
(Ecology, species interactions, global change, biodiversity conservation)  
*Robustness, structure, and interaction flexibility in mutualisms*

3:45-4:00  Wrap-up and Networking
Life Sciences

MODERATORS
Farid Chehab, Obesity, Cholesterol Biosynthesis, Glioblastoma, Molecular Diagnostics
Ameae Walker, Cancer, Immunology, Endocrinology

AUDIENCE MEMBERS
Elizabeth Bjork, Human learning & memory, applications of findings from the science of learning
Robert Bjork, Human Learning and Memory
Sergio Ita*, Infectious diseases, host immune responses, Genomics
Christine Ponder, genetics, Molecular and Cellular Biology
Peter Ramirez*, Infectious Diseases, Microbiology, Immunology
Angelica Riestra*, Microbiology/Parasitology
Rolando Ruiz*, Skin Biology, Cell Biology, Bioinformatics
Celia Symons*, Aquatic ecology, climate change
Roberto Tinoco, Immunology
Susan Ustin, Ecological applications of remote sensind data

*Current Chancellor’s or President’s Postdoctoral Fellow
Interleaved practice: effects of training sequence on learning, remembering, and transfer

Inspired by the adage that practice makes perfect, learners commonly focus on one subject at a time to the exclusion of others. For example, when learning topics A, B, and C, one might study or practice topic A by itself, then topic B by itself, and so on. However, recent cognitive science research reveals that switching between more than one topic in an “interleaved” training sequence — for example, repeatedly alternating among topics A, B, and C — can in some cases yield substantial long-term learning improvements over the usual one-at-a-time approach. I will present data that sheds light on this surprising and counterintuitive phenomenon. First is a series of experiments that explored the potential benefits of interleaved practice for foreign language grammar skills. In that research, interleaving substantially improved novice learners’ ability to conjugate verbs in Spanish, but only when it was used across multiple sessions. Second will be a series of follow-up experiments that pinpointed specific types of interleaved training sequences that improve foreign language learning. Third, I will touch upon potential uses of interleaving for other types of educationally-relevant materials and for different learners. Overall, this research reveals insights into human learning, memory, and transfer processes, plus raises the possibility of new and more efficacious training paradigms in pedagogical settings.
Dequina A. Nicholas  
President’s Postdoctoral Fellow  
Obstetrics, Gynecology, and Reproductive Sciences, UC San Diego

_Fatty Acid Metabolites Combine with Inefficient β oxidation to activate Th17 Inflammation in Human Type 2 Diabetes_

Mechanisms that regulate metabolites and downstream energy generation are key determinants of T cell cytokine production, but the processes underlying the Th17 profile that predicts the metabolic status of people with obesity are untested. Th17 function requires fatty acid uptake, and our new data show that blockade of CPT1A inhibits Th17 profile production by cells from people with type 2 diabetes (T2D). A low CACT:CPT1A ratio in immune cells from T2D subjects indicates altered mitochondrial function and coincides with the preference of these cells to generate ATP through anaerobic glycolysis rather than fatty acid oxidation, but glycolysis was not critical for Th17 profiles. Instead, β oxidation blockade or CACT knockdown in T cells to mimic mitochondrial characteristics of T2D promotes cells from lean subjects to utilize C-fatty acylcarnitine to support a Th17 profile. These data show long chain acylcarnitine combines with mitochondrial alterations to promote disease-predictive inflammation in human T2D.
Synaptic and circuit homeostasis in mouse models of Autism

In the healthy cortex, the balance between excitation and inhibition (the E-I ratio) is kept remarkably stable within and across cortical layers to prevent hypoactive or hyperactive brain states. It is hypothesized that Autism Spectrum Disorder (ASD)-associated mutations disrupt this balance at the synaptic level by permanently elevating the excitation-inhibition (E-I) ratio, which then drives excess spiking in the cortical network. Testing of the E-I ratio hypothesis at the synapse and circuit levels in the cortex across four distinct and well-validated ASD mouse models (Fmr1<sup>-/-</sup>, Cntnap2<sup>-/-</sup>, 16p11.2del/+ and Tsc2<sup>+/+</sup>) showed that an increase in E-I ratio was common across these mouse lines containing ASD-associated gene mutations. Despite this, both in vitro and in vivo measurements of spiking levels in the cortex were essentially normal. Modeling revealed that normal spiking was in part maintained because the excitation and inhibition conductance changes that underlay the increase in E-I ratio were quantitatively matched to preserve the peak amplitude of synaptic depolarization. Thus, elevated E-I ratio is a common circuit phenotype but may represent a natural homeostatic response to ASD mutation-induced network perturbation that helps stabilize cortical spiking, rather than a pathophysiological mechanism that generates excess spiking.
Computational design of a modular sense/response system

Sensing and responding to signals is a fundamental ability of living systems, but despite remarkable progress in designing protein structures, there is no general approach for engineering arbitrary new functions using computational protein design. Here we describe a new computational strategy to design sensor/actuator proteins by building binding sites de novo into heterodimeric protein-protein interfaces and coupling ligand sensing to modular outputs via split reporters. Using this strategy, we designed protein sensors that respond to farnesyl pyrophosphate (FPP), a metabolic intermediate in the production of the anti-malarial drug artemisinin and other valuable compounds. Designed proteins were ranked based on several quality metrics, and top-ranked designs were screened for sensor activity using a split dihydrofolate reductase host survival assay. By linking the sensor components to a split nanoluciferase and dimerization-dependent fluorescent proteins, we observed an apparent binding affinity for FPP of 2 μM for the top-performing sensor, and further computational design based on local binding site architecture in the crystal structure of the sensor improved the affinity for FPP to 170 nM. The set of FPP sensors that we designed are functional in vitro and in cells, and the crystal structure of the engineered binding site matches the design model with atomic accuracy. This computational design strategy provides avenues to link diverse biological outputs to new signals.
The ecology and cell biology of life history evolution

Life history traits are incredibly diverse, and often show trade-offs that result from internal constraints. The development and physiology of different life history traits are often interconnected, and incorporating genetics and cell biology has yielded new insights into mechanisms that underlie life history trait evolution and trade-offs. Combining approaches from ecology, development, genetics and cell biology, I will discuss (1) the effect of ecology on the evolution of female reproductive capacity in Hawaiian Drosophila through repeated changes in the same developmental mechanism, and (2) tracking Insulin signaling activity at the single-cell level as a way to investigate how modifying Insulin signaling levels lead to pleiotropic changes in life history traits in D. melanogaster. These findings highlight how seemingly minor modifications on cell signaling pathways can influence the evolution of life history traits.
Interferon type-specific control of ISGF3 dynamics

Interferons (IFNs) coordinate the innate immune response. Both type I and type III IFNs suppress viral replication. However, only type I IFNs are associated with inflammation and can be destructive to tissues if not properly regulated. As both type I and III IFNs activate the same transcription factor, ISGF3, it remains unclear how they elicit differential physiological functions. Specificity of the IFN responses in some cell types can be attributed to cell type specific expression between the type I IFN receptors and the type III IFN receptors. Interestingly, however, epithelial cells at mucosal layers express both types of IFN receptors, raising the question if in these cell types there are non-redundant responses between the type I and type III IFN signaling pathways. We hypothesized that IFN type-specific control of ISGF3 dynamics may be the basis for IFN type-specific cellular responses, and hence sought to develop a quantitative understanding of the mechanisms that control ISGF3 activation and inactivation.

Using quantitative biochemical assays with fine-time resolution measurements, we found that in epithelial cells IFN-β, a type I IFN, and IFN-λ3, a type III IFN, induced multi-phasic ISGF3 responses that differ in prominent dynamic features. Whereas IFN-β produced a potentiated ISGF3 second phase prior to abrupt downregulation, IFN-λ3 showed a transient trough. This work includes mechanistic systems biology approaches – involving iterative mathematical modeling and quantitative experimentation including next-generation sequencing approaches – that have revealed several nested positive and negative feedback and feedforward loops whose precise timing and strength determines ISGF3 dynamics. Identifying these key IFN type-specific control mechanisms may enable novel therapeutic strategies to address IFN misregulation in a variety of diseases.
Christian F. Guerrero-Juarez  
Chancellor's ADVANCE Postdoctoral Fellow  
Developmental and Cell Biology & Mathematics, UC Irvine

*Single cell analyses reveals fibroblast heterogeneity and adipocyte progenitors in murine skin wounds*

During healing of large excisional skin wounds in adult mice, hair follicles and then dermal adipocytes regenerate de novo in the wound center. New hair follicles regenerate from wound epidermis and wound fibroblasts by reactivating embryonic hair morphogenesis program. New adipocytes regenerate around new hair follicles from myofibroblasts, a specialized contractile wound fibroblast, via the process of reprogramming. We studied diversity of fibroblasts in large skin wounds using single-cell RNA-sequencing. We show that wound fibroblasts group into twelve clusters. Pseudotime and RNA velocity analyses shows that some clusters likely represent sequential states during fibroblast differentiation toward a contractile phenotype, while other clusters appear to represent distinct fibroblast lineages. One subset of wound fibroblasts expresses hematopoietic markers, suggesting their myeloid origin. We validated this finding using single-cell western blot as well as single-cell RNA-sequencing on genetically labeled wound myofibroblasts. Furthermore, using bone marrow transplantation and Cre recombinase-based lineage tracing experiments, we rule out cell fusion events and confirm that hematopoietic lineage cells give rise to a subset of wound myofibroblasts and rare regenerated adipocytes. In conclusion, we show that wounding in skin induces a high degree of heterogeneity among fibroblasts and recruits highly plastic myeloid cells that contribute to adipocyte regeneration.
Making females female: on the many ways to evolve female-specific traits

The convergent evolution of sex-limited traits (i.e. traits that are present in only one sex) provides natural replicates that can be harnessed to study how genes become expressed differently between the sexes. Here, I identified a set of sexually dimorphic alleles involved in a female-limited color polymorphism in the *Drosophila montium* species group. Several species in this group have females that are polymorphic for abdominal pigmentation (i.e. they are light or dark) while the males are always a single color (i.e. they are only light or only dark). I performed a genome-wide association analysis in three distantly-related species with polymorphic female pigmentation and either light males (*D. serrata* and *D. kikkawai*) or dark males (*D. rufa*). In all species, female color mapped to small (< 2 kb) structural variants (SV) within different introns of the same autosomal gene *POU domain motif 3 (pdm3)*, a transcription factor that represses dark pigment. Motif analyses indicated that these alleles likely evolved female-specificity through different gene regulators in an already sexually dimorphic pigmentation pathway. I used population genomic data and genome assemblies from more than 20 species to show that these light/dark alleles originated multiple times in the *montium* species group. Together, my analyses of convergent color alleles suggest that they independently evolved female-limited effects via different genetic changes and regulatory inputs to the same gene.
The relationship between plant nutrition/growth and the abiotic environment is largely mediated by the microbial community present in soils. As environmental conditions shift due to anthropogenic climate change, this relationship and the future productivity of forest ecosystems grows increasingly uncertain. In particular, the accessibility of critical plant nutrients nitrogen (N) and phosphorus (P) is influenced by the interactions among bacteria, archaea, and fungi as they respond to climate, lithology, and plant-derived soil characteristics. Within the framework of plant nutrient acquisition, plants are expected to maximize physiological strategies that alleviate growth limitation by the most scarce resource. These include, but are not limited to, increases in fine root biomass, changes in root morphology, symbioses with fungi and bacteria, and resorption of nutrients from senescing tissues. In tandem, microbial community structure (i.e. relative abundances of unique OTUs) and function (i.e. presence and expression of functional genes related to biogeochemical transformations) may dynamically respond to climate and plant-soil interactions. What remains is a need for an integrated understanding of plant physiological and microbial community responses to climatic change that may be used to improve large-scale global ecosystems research and earth systems models. Here, I will present my findings and ongoing research on the relationships among temperature, moisture, plant physiology, and microbial ecology within the framework of resource optimization theory. These examples will highlight findings from temperate forests, upland tropical forests, and mediterranean oak savannah ecosystems.
Robustness, structure, and interaction flexibility in mutualisms

Species in ecological communities are connected through interaction networks. The structure of these networks, or patterns in the linkage between species, is related to communities’ susceptibility to extinction drivers. As communities respond to global changes, species may either go extinct or form novel interactions. Focusing on mutualisms, one of the most ubiquitous types of ecological interactions, I will demonstrate how numerical simulations and empirical data on mutualistic networks (plant-pollinator and plant-seed dispersal) can be leveraged to understand how network structure and the flexibility of species interactions affect community robustness to different extinction drivers. Specifically, I investigate (i) how different extinction drivers can modify the relationship between network structure and robustness; (ii) the effect of temporal variation on the robustness of plant-pollinator communities; (iii) which traits are related to how flexible pollinators are in their interactions patterns; and (iv) if interaction flexibility predicts species occupancy in the landscape. Ultimately, I will discuss how the protection and restoration of species and ecosystem services relies not only on the species per se, but also on species interactions and the nature of the extinction driver the community is subjected to.
Mathematics, Engineering & Physical Sciences
Library Room

9:00 – 9:40 Emily Martin
(Brown dwarfs, infrared instrumentation)
*Characterizing Cold Brown Dwarf Atmospheres and Developing Infrared Instrumentation*

9:45 – 10:25 Daniel Akwaboah
(Transition metal catalysis, total synthesis, method development, peptide chemistry)
*Toward the Total Synthesis of Bioactive Constrained Peptides*

10:30 – 11:10 Grace Wu
(Renewable energy, conservation science, land use change, remote sensing)
*The role of land use in renewable energy planning and development*

11:15 – 11:55 Bo Zhang
(Theoretical Ecology)
*Carrying capacity in a heterogeneous environment with habitat connectivity*

12:00 – 1:00 LUNCH

1:00 – 1:40 Anna Ma
(Numerical linear algebra, machine learning, signal processing)
*Randomized Kaczmarz Variants and their Applications to Data Science*

1:45 – 2:25 Rolando de Santiago
(Pure mathematics, operator algebras, group theory, ergodic theory)
*Rigidity in Group von Neumann Algebras*

2:30 – 3:10 Ryan McCarty
(Computational Chemistry, Spectroscopy, Materials, Minerals)
*Atom to Application: Multidisciplinary chemistry for understanding materials*

3:15 – 3:45 Wrap-up and Networking
Mathematics, Engineering & Physical Sciences

MODERATORS
Tessa Hill, Climate change, Oceanography
Mu-Chun Chen, Theoretical Particle Physics

AUDIENCE MEMBERS
Mei-Chu Chang, Combinatorial number theory, graph theory
Vy Dong, organic chemistry
Mahshid Fardadi*, Control and neuroscience
Alex Frano, Physics, experimental condensed matter, materials
Christine Morrison*, drug discovery, materials chemistry, biochemistry
Aurora Pribram-Jones, density functional theory, chemical physics, electronic structure, high energy density
Erik Romero**, Organometallic Catalysis
Andrew Skemer, Observational Astronomy, Extrasolar Planets

*Current Chancellor’s or President’s Postdoctoral Fellow
**California Alliance Chancellor’s Postdocotral Fellow
Emily Martin  
Chancellor's Postdoctoral Fellow  
Astronomy & Astrophysics, UC Santa Cruz

*Characterizing Cold Brown Dwarf Atmospheres and Developing Infrared Instrumentation*

Advances in infrared technology have been essential towards improving our understanding of the Solar Neighborhood, revealing a large population of brown dwarfs, which span the mass regime between planets and stars. My work combines near-infrared (NIR) spectroscopic and astrometric analysis of nearby brown dwarfs with instrumentation work to upgrade the NIRSPEC instrument for the Keck II Telescope. I will present results from a program using Spitzer/IRAC data to measure precise locations and distances to the coldest and closest brown dwarfs. These distances allow us to constrain absolute physical properties, such as mass, radius, and age, of free-floating planetary-mass objects through comparison to atmospheric and evolutionary models. NIR spectroscopy combined with the Spitzer photometry reveals a detailed look into the atmospheres of brown dwarfs and gaseous extrasolar planets. Additionally, I will discuss the improvements we have made to the NIRSPEC instrument at Keck. NIRSPEC is a NIR echelle spectrograph, capable of $R \approx 2000$ and $R \approx 25,000$ observations in the 1-5 μm range. As part of the upgrade, I performed detector characterization, optical design of a new slit-viewing camera, mechanical testing, and electronics design. NIRSPEC's increased efficiency will allow us to obtain moderate- and high-resolution NIR spectra of objects up to a magnitude fainter than the current NIRSPEC design.
Towards the Total Synthesis of Bioactive Constrained Peptides

Cyclic peptides represent a class of molecules that display a circular array of several peptide bonds. This inherent chemical property of these polypeptides makes them better targets as therapeutic agents than their linear counterparts. For instance, they are more resistant to enzymatic degradation, have receptor selectivity, and good binding affinity.

In this talk, I will discuss our ongoing effort to synthesize mahafacyclin B, an anti-malarial natural product isolated from a bottle tree in Madagascar. We have devised a convergent approach to rapidly access the macrocyclic core of the target molecule via a late-stage intramolecular opening of an oxazolone ring. We will employ cobalt catalysis to stereoselectively hydrogenate the advanced cyclic dehydropeptide.
The role of land use in renewable energy planning and development

Ambitious low-carbon transitions are underway in many jurisdictions, requiring the large-scale expansion of renewable energy. Simultaneously, growing energy demand in emerging economies is being met with rapid energy development, with the declining costs of wind and solar technologies making them among the most competitive options. These recent developments suggest the potential for “energy sprawl” to be another significant driver of habitat and biodiversity loss globally. With this rapid growth of renewable energy, there is a pressing need to develop strategies for quantifying land use related impacts related to renewable energy development and integrating these impacts in renewable energy planning processes. In this talk, I will present results from studies that address this gap in two different study regions. These two studies examine how to simultaneously meet conservation and climate objectives in California and estimate forest-loss due to large-scale hydropower siting in the Brazilian Amazon.

In the first study, I ask the following: (1) is it possible to meet California’s ambitious low-carbon commitments while avoiding impacts land with high conservation value? (2) what are the economic cost tradeoffs of low-impact renewable energy development? In the second study, I ask the following: (1) what are the indirect deforestation and land use impacts of utility-scale hydropower development in the Brazilian Amazon? (2) Do siting choices and pre-existing land use and land cover affect the extent of the impact? Decision-support tools and frameworks resulting from these studies can help avoid or minimize the land and biodiversity impacts of renewable energy expansion necessary to meet climate change mitigation targets.
Carrying capacity in a heterogeneous environment with habitat connectivity

A large body of theory predicts that populations diffusing in heterogeneous environments reach higher total size than if non-diffusing, and, paradoxically, higher size than in a corresponding homogeneous environment. However, this theory and its assumptions have not been rigorously tested. Here we first extended previous theory to include exploitable resources, proving qualitatively novel results, which we tested experimentally using spatially diffusing laboratory populations of yeast. Consistent with previous theory, we predicted and experimentally observed that spatial diffusion increased total equilibrium population abundance when resources are heterogeneously distributed, with the effect size depending on the relationship between $r$ and $K$. Refuting previous theory, however, we discovered that homogeneously distributed resources support higher total carrying capacity than heterogeneously distributed resources, even with species diffusion. Secondly, instead of looking at the effect of resources, we questioned how the spatial distribution of stressors interacts with dispersal to influence population dynamics. We prove mathematically that, if a stressor increases death rate and/or simultaneously decreases both population growth and yield, a heterogeneous distribution of stressor leads to a higher total population size than if the same amount of stress was uniformly spread over space. Consistent with our mathematical predictions, we observe that a uniform spatial distribution of cycloheximide minimizes the total equilibrium size of experimental metapopulations, with the magnitude of the effect depending predictably on dispersal rate and geographic pattern of antibiotic heterogeneity. Our results provide rigorous experimental tests of new and old theory, demonstrating how the traditional notion of carrying capacity is ambiguous.
Anna Ma  
UC Chancellor’s Postdoctoral Fellow  
Mathematics, UC San Diego

*Randomized Kaczmarz Variants and their Applications to Data Science*

Advances in technology have led to a world where large-scale data collection is ubiquitous. However, traditional techniques for processing data are not designed for such large-scale data sets, and are thus quickly becoming outdated. As a result, there is an immense demand for efficient, scalable, and robust algorithms for data analytics. Interest in a specific class of algorithms, Stochastic Iterative Algorithms, has grown in recent years due to their ability to handle large-scale data. This talk discusses adaptations, improvements, and the design of algorithms for problem involving large-scale. In the spirit of large-scale data, the work discussed in this talk operates under the assumption that the entire data set cannot be loaded into memory and worked with all at once, as traditional techniques for solving linear systems would typically do. More specifically, we will study the Randomized Kaczmarz algorithm for solving linear systems of the form $Ax=y$ when the matrix $A$ cannot be accessed all at once and variation of problem this under a variety of well established settings such as in the presence of sparsity, multiple measurement vectors, and anomalous corruptions. The work presented will be complemented with real world application to each of the proposed methods as well as empirical experiments that verify theoretical performance guarantees.
Rigidity in Group von Neumann Algebras

The works of F. Murray and J. von Neumann described a method which associates a von Neumann algebra to a discrete countable group. Since then, a major theme in this area seeks to investigate which structural aspects of the group can be recovered from its von Neumann algebra. The difficulty of this problem is best illustrated by Conne's landmark result which states all ICC amenable groups give rise to isomorphic von Neumann algebras. In essence, standard group invariants are not typically detectable the resulting von Neumann algebra. When the group is non-amenable, the situation may be strikingly different.

This talk surveys advances made in this area, with an emphasis on the results stemming from Popa's deformation/rigidity theory. Here, I present several instances where elementary group theoretic properties, such as direct products, can be recovered from the algebra. We will also discuss recent progress made by Ben Hayes, Dan Hoff, Thomas Sinclair and myself in the case where the underlying group has positive first $\ell^2$-Betti number. We will explore the relationship between s-malleable deformations of von Neumann algebras and $\ell^2$ co-cycles which lays the foundation for our work.
Atom to Application: Multidisciplinary chemistry for understanding materials

Every material, from common geologic minerals to highly engineered catalysts, have properties that are controlled, enhanced, and degraded by the atoms that make up these materials and how these atoms are arranged. My research seeks to develop practical pipelines which allow atomistic insight to swiftly influence how we understand and design modern materials. The current focus of my work is in making nuclear magnetic resonance easier to use. Nuclear magnetic resonance is a spectroscopic technique that can determine where atoms are located within a material. However, results can be difficult to confirm and complicated to interpret. This limits its use in the atom to application pipeline, especially in regards to oxide materials and ionic solids. I will highlight my work developing computational chemistry approaches to interpret and confirm results, new concepts in laboratory hardware, and applications of algorithms which can simplify confusing results.
9:00 – 9:40  Alexander Cho  
(Social media, race, gender, sexuality)  
*Default Publicness: Queer Youth of Color, Social Media, and Being Outed by the Machine*

9:45 – 10:25  Robert Connell  
(Maroons, Critical Environmental Justice Studies, Diaspora Theory, State Theory)  
*Maroon Ecology: Land, Sovereignty, and Environmental Justice*

10:30 – 11:10  Lauren Whitehurst  
(Sleep, cognitive neuroscience, autonomic physiology, health disparities)  
*Sleep's role for cognitive function*

11:15 – 11:55  Colleen Cheverko  
(Biological anthropology, archaeology, bioarchaeology, health disparities)  
*Associations between childhood stress and adult mortality in precontact central California: Applications of the Developmental Origins hypothesis*

12:00 – 1:00  LUNCH

1:00 – 1:40  Ayana Omilade Flewellen  
(African Diaspora Archaeology)  
*A Black Feminist Archaeology of Sartorial Choice From Slavery Through Freedom within the African Diaspora*

1:45 – 2:25  Justin Dunnavant  
(Archaeology, Caribbean, Ecology)  
*A Historical Ecology of Slavery in the Danish West Indies*

2:30 – 3:10  Andrea Headley  
 Público Mayor, Policía, Justicia Criminal, Racial Equity)  
*An Assessment of Police-Community Relations*

3:15 – 3:55  Irene Vega  
(International Migration, Race/Ethnicity, Socio-Legal Studies)  
*The Cultural Construction of Reasonableness in Police Use of Force: A Case Study of the U.S. Border Patrol*

3:55 – 4:15  Wrap-up and Networking
Social Sciences & Professional Fields

MODERATORS
Tanya Golash-Boza, Race, Immigration, Incarceration, Deportation
Julie Sze, environmental, urban and ethnic studies

AUDIENCE MEMBERS
Leisy Abrego, International Migration, Gender, Latina/o/x Studies
Theresa Ambo*, Indigenous education, equity, inclusion, and diversity, tribal-university partnerships
Veronica Castillo-Munoz, The U.S.-Mexico Borderlands, Gender, and Migrations
James Doucet-Battle, Health disparities, Science, Technology, and Society (ST&S), Race, Gender
Hanna Garth, Cuba/Caribbean, Los Angeles, Food, Race, Inequality, Consumption,
Gregorio Gonzales*, race, ethnicity, and indigeneity
Mimi Ito, Connected Learning
Anthony Jerry, Race, citizenship, Mexico, Latin America, development, Black Diaspora
Charlton McIlwain, the role of race and media in politics and social life
Kylie Peppler, Arts, Learning, New Technologies, Digital Equity
Robert Romero, Religious Studies, Chicano/Latino History, Asian-Latino Studies
Damien Sojoyner, Prisons, Education, Environment, Policy, Urban Anthropology, Race, Methods
Brenda Stevenson, Race, Gender, Slavery, Family, American South
Courtney Thomas Tobin, stress and coping, mental-physical health comorbidity, African American health

*Current Chancellor’s or President’s Postdoctoral Fellow
Alexander Cho
UC President’s Postdoctoral Fellow
Informatics, UC Irvine

Default Publicness: Queer Youth of Color, Social Media, and Being Outed by the Machine

Based on over five years of online and offline immersive ethnographic fieldwork, this talk explains why US queer youth of color regard Facebook as a dangerous space and why they prefer other social media such as Tumblr to express intimate feelings and articulate a collective politics that challenges white supremacy and heteronormativity. This fieldwork reveals that it is not unusual for queer youth of color to experience drastically negative consequences, including being disowned by one’s family, because of a design bias toward “default publicness” that shapes user experience and algorithmic automation on social media such as Facebook. This talk identifies four design decisions that create “default publicness” on social media platforms, viewing these decisions through queer, feminist, and critical race theories that have argued that the “public” is never neutral terrain. It understands these design decisions as imperatives of “platform capitalism,” which extracts robust and verifiable user data for monetization and monopoly rent, structuring these online spaces accordingly. Ultimately, this talk asks us to critically evaluate the terms within which we understand the notion of “privacy” in today’s social media landscape.
Robert Connell  
President's Postdoctoral Fellow  
African American and African Studies, UC Berkeley  

Maroon Ecology: Land, Sovereignty, and Environmental Justice

Maroon societies originate from armed self-emancipation against enslavement in the Americas, with Jamaica hosting Maroon communities organized as ethnoculturally distinct, self-governing autonomous polities. Although widely acknowledged for their historic victory against enslavement, Jamaican Maroons are rarely viewed as environmental actors, either in the scholarship or popular imagination. Maroon ethnogenesis, however, marked by politicized place-making and ethnoterritorial struggle, gave rise to an emplaced and embodied praxis of traditional environmental knowledge politicized through a reproduction and spatialization of power that shapes, and is shaped by, global political ecological processes. I call this praxis Maroon Ecology.

In this paper I argue that, in the 21st century, the Accompong Maroons of Jamaica are actualizing an approach to environmental protection mobilized by demands for historical justice, territorial redistribution, and sovereignty over their land. This praxeology of counterpower, manifested by an “anti-state statism,” drives the Maroon struggle against extractive industry, the actions of which they find ecologically and culturally detrimental, as well as a grave violation of their treaty rights. Diverging from the class and race inflections of institutional Jamaican government and NGO environmentalism, which are closely linked to the wilderness discourse and state-centric policy practices of dominant conservationism, the praxis of Maroon Ecology locates Maroon struggle within the global environmental justice movement as well as the broader dynamics of Afro-Latin and Caribbean social movements. However, the maximalist demands for sovereignty and willingness to adapt elements of Euro-American constitutionalism to their traditional self-governance structures renders the new Sovereign State of Accompong as a unique project of alternative development in the African American world. Although marginalized in the academic literature, this latest iteration of Accompong’s legacy of resistance positions the Maroons as key actors in Caribbean environmental, ethnoterritorial, and development politics.
Sleep's role for cognitive function

How we might slow the speed of cognitive aging and related diseases is a pertinent question facing the current century, with 13.8 million more cases of Alzheimer's disease and other dementias projected by 2050. Black Americans are 2x more likely than non-Black Americans to develop Alzheimer's disease or other dementias. Though studies have implicated Black Americans may have increased genetic vulnerability for dementia, these genetic factors do not mitigate prevalence rates in cognitive decline, which presents the need for novel mechanisms to explain these striking health disparities. In this talk, I will present two factors, sleep and psychosocial stress, as potential mechanisms driving racial cognitive health disparities in Black Americans.

Sleep disturbance has emerged as a notable predictive and exacerbating factor in the onset and development of age-related cognitive decline. Black Americans consistently report less sleep and poorer nighttime sleep quality compared to other cohorts. Importantly, differential experiences with stress has emerged as a probable contributor to this sleep health disparity. Specifically, psychosocial stress results in higher nocturnal blood pressure and increased sympathetic activation, both states at odds with the necessary autonomic conditions to engage restful sleep. Further, acute psychosocial stressors reduce nighttime sleep and increase sleep fragmentation.

Herein, I will review the current knowledge surrounding racial cognitive health disparities and will highlight gaps in our existing knowledge. I will also discuss an on-going project in which we are experimentally manipulating race-based stress and examining the impact on nighttime sleep physiology and post-sleep cognitive performance in Black vs White Americans. This project will be used to further understand both the physiological and psychological pathways linking stress and sleep to cognitive function and will elucidate their unique and combined roles in the etiology of racial cognitive health disparities.
Colleen Cheverko  
Chancellor's Postdoctoral Fellow  
Anthropology & Heritage Studies, UC Merced

*Associations between childhood stress and adult mortality in precontact central California: Applications of the Developmental Origins hypothesis*

Recent studies of modern human variation demonstrate that stress experienced during childhood is associated with patterns of growth disruptions and development in children and increased risk of illness or early mortality in adults. These patterns linking early life stress with adult health and mortality have been observed in diverse temporal, cultural, and geographic contexts. However, these observations are based primarily on industrialized populations and anthropologists debate the extent to which patterns observed in modern populations were present in the past. Despite the uncertainty, this framework is an important lens through which we can understand pre-industrial lifestyles, inequalities, and adaptations because it helps us understand previously hidden aspects of adult mortality in the past.

The Late Period (1200-250 BP) in central California is characterized by increased sedentism, social complexity, and trade, alongside population growth. Previous archaeological and bioarchaeological studies suggest individuals experienced increased exposure to stressors during this period. Here, I discuss a case study from precontact central California to highlight how this framework helps us understand experiences of individuals across their lifespans during this period of increased stress. Correlations between sex, skeletal indicators of stress that develop during childhood and adolescence, and adult mortality will be discussed in detail. A complementary mortuary approach will be incorporated to investigate how relative wealth and social roles of adults, inferred using mortuary associations, covary with childhood stress experiences to understand possible lifelong conditions in the individuals living in this region. This research helps us understand the complex associations between lived experiences, activity, and physiological stress throughout the lifespan in precontact central California.
Ayana Omilade Flewellen
President's Postdoctoral Fellow
Anthropology, UC Berkeley

A Black Feminist Archaeology of Sartorial Choice From Slavery Through Freedom within the African Diaspora

During the 18th, 19th and early 20th centuries, periods marked by racialized subjection, sexual exploitation, and economic disenfranchisement, African Diasporic women were pinning their hair up with combs, lacing glass beads around their necks, dyeing coarse-cotton fabric with sumac berries and walnuts, and fastening buttons to adorn their bodies and dress their social lives. Through an analysis of material culture and documentary data, my work examines the complex interplay between structural forms of oppression and agency by focusing on the ways African Diasporic women use dress to negotiate racism, sexual exploitation, and exploitive capitalism from slavery through freedom. I posit that quotidian sartorial practices, how people dressed their bodies for their everyday lives, are practices of self-making that through their repetitive daily engagement, constitute the body and form identities.

Through an engagement with Black Feminist Archaeology, this talk discusses my research on gendered African Diasporic sartorial practices within two separate projects. The first being my book project, tentatively titled A Black Feminist Archaeology of Adornment in Post-Emancipation Texas, that explores how gendered adornment practices among tenant, wage labor, sharecropping and landowning farmers in rural Texas were dialectical negotiations between socialized racial and gendered clothing trends and individual stylized choices. The second project, is my current archaeological work at the Estate Little Princess, an 18th-century sugar plantation located on the island of St. Croix, USVI where, through a lens of sartorial choice, I ask how did race, gender, and status/class operations of power and oppression shape Afro-Crucians formations of identity from slavery through freedom. By integrating documentary, oral history and archaeological data, both projects provide a framework for testing inferences about the relationship the matrix of domination has to the formation of identity, through the lens of dress, across space and time in the Atlantic world.
A Historical Ecology of Slavery in the Danish West Indies

The transatlantic slave trade era – marked by chattel slavery, racial capitalism, and exploitative plantation economies – radically transformed societies and environments in the Americas. In this talk, I attempt to craft a historical ecology of the African Diaspora through an analysis of slavery in the Danish West Indies. Drawing from an array of archaeological, historical and environmental data, I argue that the development of plantation slavery elicited lasting ecological changes as colonial planters developed exploitative monocrop agricultural systems and enslaved Africans made a life in the Caribbean. Theoretically, I use a Black Geographic lens to interrogate the relationship between African diasporic communities and their Atlantic environments. Finally, I posit the need to engage questions of sustainability as a form of redress in contemporary archaeological praxis.
An Assessment of Police-Community Relations

There has been a significant amount of attention refocused on problems surrounding police and communities of color. The most consistent remedy identified has been reforming police departments, which is an organizational-level solution. However, only minimal strides have been made in empirical research to understand the organizational correlates associated with police-community relations. Thus, this research investigated the impact that police departments' organizational and managerial characteristics have on police-community relations. The key contributions of this research to the literature are two-fold. First, a composite indicator of police-community relations was developed by compiling a large nationwide dataset of local police-departments. This multidimensional indicator includes citizen complaints, police use of force, assaults against police officers, and civilian deaths by police. Second, the role that specific organizational characteristics—community-oriented policing, passive representation, professionalism, and control mechanisms—have on police-community relations was estimated using ordinary least squares regression analyses from over 250 police departments. The findings portrayed that only specific (and very few) organizational and managerial characteristics of police departments impact police-community relations. Specifically, police departments that had formal partnerships with the community, dedicated beat patrol officers, and minority representation were found to have lower levels of use of force. Police departments with higher numbers of officers dedicated to problem-solving activities in the community had lower levels of citizen complaints; in contrast, departments that were more formalized had higher levels of citizen complaints.
Irene Vega  
ADVANCE Chancellor's Postdoctoral Fellow  
Criminology, Law and Society, UC Irvine

The Cultural Construction of Reasonableness in Police Use of Force: A Case Study of the U.S. Border Patrol

A hallmark of being embedded in a cultural group is taking certain ideas for granted as commonsensical, even when they seem peculiar or even outrageous to outsiders. Such is the case for the social construction of rocks as lethal weapons in the United States Border Patrol’s (USBP) organizational culture. According to the USBP’s parent agency, Customs and Border Protection (CBP), rocks are potentially lethal weapons and as such, agents are authorized to shoot rock throwers when they consider it “reasonable” to do so (Office of Training and Development 2014). Agents have killed at least a dozen people in rocking incidents since 2010 and have shot their weapons at many more; no Border Patrol agents have been prosecuted for these actions. The legal validity of this cultural notion and its link to agents’ use of force is the focus of this paper.

Before moving forward, it is important to acknowledge that a rock or a slew of rocks can indeed, kill a human being. As one agent reminded me, “A rock can kill you...They have public stoning events in other parts of the world. They’re executions”. Still, as it relates to the Border Patrol, the equivalence of rocks with guns is better understood as a group-specific cultural notion than as an externally verifiable premise. For one, the Border Patrol is one of the largest and most well-funded policing agencies in the United States, and by extension the world. In addition to the advanced camera and motion detection technology that aids their work, agents are armed with a standard pistol, sometimes a long rifle in addition to less-lethal weapons like pepper ball launchers, tasers and batons. In short, an immigrant throwing a rock is outnumbered. Second, despite political rhetoric that constructs the U.S.-Mexico border as an out of control war zone, USBP agents spend the majority of their day processing economic migrants and recently, asylum seeking families (Vega 2018). In fact, that CBP reports rockings as the most common assault on agents inadvertently betrays the ill-fit between the government’s militarized border policies and the actual character of border crossing phenomena. Finally, no Border Patrol agents have died from being hit with rocks. According to the government’s memorial page for agents who have “died in the line of duty”, Border Patrol agents are much more likely to die in vehicle accidents, drownings, or from heat-related illness than from any type of confrontation with border crossers (U.S. Customs and Border Protection 2017). How then, does it become reasonable and legally permissible to use lethal force against rock throwers?

Drawing on document analysis and interviews with USBP agents, this article examines the social construction of reasonable force in the Border Patrol’s organizational culture. I use the equivalence of rocks and guns to reveal the mechanisms through which police cultural notions are legitimized at the bureaucratic and legal level. These mechanisms are: 1) formal authorization; 2) personalized threat; and 3) normalization techniques—together they create a social reality in which rocks and guns are equivalent and shooting rock throwers is reasonable (i.e. legally authorized, commonsensical, and normatively appropriate). Overall, this analysis highlights the gap between how the public and police evaluate reasonable force, as well the legal system’s deference to police perspectives when it comes to accountability reforms.

References
