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## CASCon 2022

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# CASCon 2022

Join us for the 6th Annual College of Arts & Sciences Conference (CASCon) on Wednesday, September 28, 2022

CASCon showcases the work of Sacred Heart University faculty from multiple disciplines. The conference emphasizes the interdisciplinary nature of faculty scholarship and reaffirms the College's commitment to undergraduate research. Short presentations from multiple topic areas will be presented at the time and locations below. For a full description of presentation topics, titles and locations, view the CASCon 2022 Program.

Students can earn prizes by picking up a passport at the CASCon check-in table outside the NC Auditorium before attending the presentations. Then collect stickers from the session moderators after attending the talks and return your passport to the check-in table for your prizes (while supplies last). All students who attend presentations will also be entered into raffles for larger prizes during the reception. The more talks you attend, the more raffle entries you earn. You must be present at the reception to win the larger prizes.

Please join us at the reception in the NC Auditorium from 5–6 p.m. for refreshments.

Time	Location	Topic
2 - 2:55 p.m.	SC 101	Analyzing Empire: Sociological, Historical and Religious Perspectives
2 - 2:55 p.m.	SC 220	Science Sampler
2 - 2:55 p.m.	NC 104	Health, Humanities and the Lingering Trauma of Colonialism
2 - 2:55 p.m.	NC 105	Stress, Stigma and Safety in Different Settings
3 - 3:55 p.m.	SC 101	Recovering Forgotten Women's Voices, Work and Stories
3 - 3:55 p.m.	NC 104	Congressional Policy Practice Internship: Experiential Learning Through Ap
3 - 3:55 p.m.	SC 220	What Makes Fido Special: Discussing Dogs from an Interdisciplinary Persp
3 - 3:55 p.m.	NC 105	Irish Philosopher, Writer and Mystic John Moriarty: Perspectives on the Eco 21st Century
4 - 4:55 p.m.	SC 220	Overlooked and Underexamined: Examining the Health and Well-Being of v Perspectives

Time	Location	Topic
4 - 4:55 p.m.	SC 101	Seeking the Sacred in the Secular World
4 - 4:55 p.m.	NC 104	Blitz Talks
5 - 6 p.m.	NC Auditorium	Reception

## CASCon 2022 Program

Session I | 2 p.m. - 2:55 p.m.

### **Room 1 (SC 101) | Analyzing Empire: Sociological, Historical & Religious Perspectives**

Jillian Plummer (Catholic Studies) – “Empire of Charity: Considering Cold War Catholic Development in Chimbote, Peru 1964-1973”

This paper examines how the charitable aid initiatives performed by Catholic Sisters in Cold War Latin America could be understood as U.S. cultural empire building in the region. Focusing on Chimbote, Peru, I analyze how Catholic sisters’ development work in Peru aligned with and later critiqued John F. Kennedy’s Alliance for Progress. I argue that missionary sisters staffed social service and religious infrastructure based on a U.S. Cold War worldview, which desired to curb the influence of communism by alleviating poor living conditions in a boomtown city. Yet, the politics and theology of Chimbote influenced U.S. missionaries in a more influential way than their development efforts addressed the poverty in the city. As they established networks of foreign aid, people in the Chimbote community resisted this kind of programming. By the early 1970s, Peruvian priests and religious leveled intellectual and theological criticisms that reoriented how some missionaries envisioned social change in Peru. Ultimately, Catholic sisters’ encounter with the Peruvian critiques of development—especially those distilled in liberation theology—provided missionary sisters with the language to criticize their own charitable aid efforts in Peru.

Julia Bates (Sociology) – “U.S. Empire and the ‘Adaptive Education’ Model: The Global Production of Race” | *Presentation Withdrawn*

Kevin Gledhill (History) – “Intermediaries of Empire in the Caspian Sea, 1700-1850”

This paper explores the history of Russian imperial expansion into the Caspian Sea, with a focus on northern Iran and the South Caucasus. It highlights the complex interactions between the Russian state and its economic and political project in the region, on the one hand, with the interests of local commercial and political actors on the other. It highlights the role of Armenian and Iranian merchants and political elites, showing how they responded to and shaped the project of empire in the Caspian Sea.

## **Room 2 (SC 220) | Science Sampler**

Jo-Marie Kasinak (Biology) – “What Can We Learn from Marsh Mud?: Measuring Carbon Sequestration in Restored Salt Marshes”

Salt marshes provide many valuable ecosystem services yet are disappearing at alarming rates due to anthropogenic climate change and global sea level rise. Recent research stresses the importance of preserving and restoring these coastal systems to increase shoreline resilience and storm protection. Coastal habitats sequester nutrients and carbon and serve as nurseries for economically important species. However, all salt marshes do not provide ecosystem services at the same levels. Carbon sequestration, a critical ecosystem service, was examined in restored marshes throughout Connecticut and naturally established marshes in Milford, CT. We hypothesized that while newly established marshes would show lower levels of ecosystem services when compared to more mature restored marshes and to natural marshes, the level of ecosystem services would approach those of natural marshes within 15 years of restoration. This lag reflects the time it takes for the marsh to become established and build a stable peat layer. Preliminary results indicate that newly restored marshes have lower carbon sequestration rates.

Rachel Bowman (Psychology) – “Using the Hippocampus for a Neurobiological Model of ... Almost Everything!”

This talk provides a quick look at the ongoing work in my lab examining cognitive function, including spatial memory and anxiety, in rats. Spatial memory is a specific component of the memory system that is responsible for spatial orientation and navigation as well as the ability to recognize objects and their location in space. Spatial memory, observed in a wide variety of species from invertebrates to humans, allows an animal to return to locations of shelter, family and food sources. The hippocampus brain structure is responsible for integrating visual-spatial cues, landmarks, distances and directions to form an overall cognitive map of one's environment. The

hippocampus is rich in a variety of hormonal receptors, and thus, spatial memory performance can be used to examine alterations following a range of experiences, including stress exposure, environmental toxin exposure, environmental enrichment and aging. This talk provides an overview of some of the behavioral neuroscience techniques used in my lab and highlights some current collaborations and future directions of my research.

Todd J. Sullivan (Chemistry) – “Integrated Screening for Beta-Lactamases Inhibitors Identification of Pharmaceutical Hits and Lead Optimization”

Beta-lactamase is an enzyme that is involved in drug resistance. Penicillin-like antibiotics constitute 60% of worldwide antibiotic usage. Bacterial cells use beta lactamase to resist penicillin-like antibiotics. Employing computer software programs (two different programs), we have generated a model to produce docking studies data using nine different criteria evaluating the virtual compounds. The virtual compounds that we employ are drug-like, similar in chemical moieties to known inhibitors, contain privileged structures and are readily available to purchase to test in vitro. Then, using a pivot table from excel, the duplicates of the virtual compounds with the binding criteria are revealed. Docking studies reveal how tight the virtual compounds are binding at the active site along with structural (the pose at the active site), kinetic data we are searching for a pharmacological hit. Recently we discovered a compound Ractopamine that shows micro molar activity in vitro. Currently we have shown that a potential cancer drug (LG100268) has low micro molar activity in vitro. Eventually after optimizing our pharmaceutical hits with different virtual compounds generated from similarity searches. We will use synthetic organic chemistry, molecular modeling and structure activity relationships to advance the projects into lead and drug space with acceptable pharmacokinetic properties.

Penny Snetsinger and Eid Alkhatib (Chemistry) – “Optimizing Biochars”

Activated carbon is and has been one of the most efficient agents applied in drinking water and wastewater treatment due to its high surface area of about 1000 m<sup>2</sup>/gram. However, commercially produced activated carbon can be expensive and is normally produced from non-renewable sources. The creation of biochars from readily available waste materials may provide a viable alternative to expensive commercially available activated carbons. Our research group uses statistical software to analyze and optimize parameters used in the synthesis of biochars.

## Room 3 (NC 104) | Health, Humanities & the Lingering Trauma of Colonialism

Brent Little (Catholic Studies) – “Re-Imagined Crucifixions in Toni Morrison’s *Paradise*”

Dr. Little’s paper, “Re-Imagined Crucifixions in Toni Morrison’s *Paradise*,” explores the symbolism of the cross in her 1997 novel. Morrison enacts the crucifixion anew in her novel by analogously transferring Christ’s crucifixion from a reified object on a church wall to the bodies of victims of sexual and religious violence. Pivotal to the argument is an analysis of two scenes in which the cross is physically removed from walls of sacred spaces. But far from jettisoning the crucifix, she instead maps the cross onto socially marginalized and wounded women, who are scapegoated at the novel’s climax. Morrison thereby depicts their murders as a kind of modern crucifixion that reimagines the cross as a symbol that should resist domination and imply divine solidarity. In so doing, Morrison encourages believers to reject forms of triumphalist Christianity built upon exclusion, misogyny and tribalism.

Emily Bryan (Languages & Literature) – “Untitled Othello: Healing and Harm”

The Untitled Othello Project (UOP),” aims to see whether the play could be performed in the wake of America’s racial distress and the toxic structures inherent in the play. This paper looks at the beginning of UOP in the context of a larger book project that examines public and private healing through Shakespeare. Looking at UOP through the lens of the health humanities, the essay studies the idea/the texts/the production of Shakespeare as a “cure” or a way to heal wounds of identity and body-mind. What does it mean to detoxify Shakespeare’s text? In describing the project, Keith Hamilton Cobb calls it an act of Creative Justice; however, this essay will focus on the language of care, health, toxicity and rehabilitation rippled through the 70+ hours of live streaming. Applying the frameworks of experiential racial testimony and empathy-building through participatory arts, Shakespeare’s play became a site of healing and harm.

June-Ann Greeley (Languages & Literature) – “Thought-Woman and the Reclamation of Souls in Leslie Marmon Silko’s *Ceremony*”

Dr. Greeley’s paper, “Thought-Woman and the Reclamation of Souls in Leslie Marmon Silko’s *Ceremony*,” explores the themes of decolonizing medical treatment, here, the treatment of trauma and mental health. The novel *Ceremony* by indigenous author Leslie Marmon Silko explores the Native American experience of cultural and spiritual genocide and the

traumatic consequences of the long European/white colonialism in America, primarily through the story of the protagonist Tayo. A Laguna-Pueblo adolescent who returns from his deployment in the Pacific during WWII beset mentally and physically with the ravages of PTSD, Tayo at first seeks and receives treatment at the local VA hospital, which applies to his PTSD condition the usual (European) medicalized form of care of pharmaceuticals and cognitive therapy. However, although it becomes apparent that such treatment is not only ineffective but actually injurious to his mental health, the VA team decides that Tayo is just being willfully non-compliant, so they release (really, dispense with) him to the 'care' of his community on the mesa. It is his return home that provides Tayo with the space and the safety to begin a journey of authentic healing through the guided reawakening of cultural memory and of spiritual teachings and a purposeful reconnection to the religious ceremonies and rituals of healing embedded in the ancestral wisdom. The paper will explore that journey of healing and reclamation and assert that Silko, herself of Pueblo ancestry, has crafted a novel that is a radical witness (through both content and form of the novel) to the necessary decolonization of medical systems and to the validation of indigenous cultural values and spiritual traditions.

#### **Room 4 (NC 105) | Stress, Stigma & Safety in Different Settings**

Lisa Smith & Mary Ignagni (Psychology) – “A Preliminary Investigation into the Impact of a Freshman First-Year Seminar Stress Management Course”

Research reveals that high stress levels in undergraduate students may negatively impact their emotional and physical well-being. Short-term approaches to introducing stress management on college campuses have been explored. The purpose of this study was to determine whether a first-year stress management seminar course helped freshmen students reduce their stress a year after completing the course, identify which stress management skills students preferred and assess the effectiveness of specific teaching techniques on student learning. Positive trends emerged regarding students' abilities to cope with stress. Students preferred an active approach to learning and used cognitive techniques, support and humor to manage stressors. Our study indicated that a semester-long stress management course is beneficial for freshmen college students.

Mary Ignagni (Psychology) – “Researching Diversity Issues”

My research involves investigating diversity issues in a variety of organizations. My focus is on the perceptions of women within organizations,

and I am also interested in transgender and non-binary individuals and the perceptions of these individuals within organizations. My research includes looking at the changing stereotypes of women leaders, the perceptions of transgender/non-binary nurses by patients and the perceptions regarding transgender/non-binary leaders in organizations. Another study will be investigating stress on working mothers post-COVID. I have also investigated the impact of factors on women outside of organizations. For example, I am investigating different factors impacting female collegiate athletes' well-being and burnout. My research has been focused on these groups in particular, but am open to looking at other groups to enhance our understanding of diversity.

Kathryn Kroeper (Psychology) – “Cultivating Identity Safety: Changing People and Places to Promote Inclusion, Respect and Thriving”

The social identities that are important to us (e.g., our race, gender, sexuality) greatly impact our lives. These identities influence how others perceive and interact with us and they shape the opportunities we're afforded (or not afforded) across a variety of important contexts—like school, work and healthcare settings. In my research, I design, implement and evaluate social psychological interventions aimed at creating and maintaining identity safe environments where members of socially disadvantaged (e.g., racially minoritized people, women, queer and non-binary folx) and advantaged groups (e.g., White people, cis-gender men, heterosexuals) can coexist, collaborate and thrive. In this talk, I will overview a subset of my social psychological intervention work: (1) highlighting the importance of sincerity in DEI initiatives, (2) examining effective bias confrontation techniques and (3) and showcasing how leaders can create identity-safe cultures through norm-setting.

Janelle K. Bryan (School of Social Work) – “Barbadian Primary Care Professionals' IPV Screening Beliefs, Practices & Intention” | *Presentation Withdrawn*

**Session II | 3 p.m. - 3:55 p.m.**

**Room 1 (SC 101) | Recovering Forgotten Women's Voices, Work and Stories**

Pamela Buck (Languages & Literature) – “Recovering Elizabeth Blackwell, Medical Pioneer”

This paper discusses a student recovery project on Elizabeth Blackwell, who wrote a memoir entitled *Pioneer Work in Opening the Medical Profession to*



*Women* during the suffrage era. As the first woman to obtain a medical degree in the United States, Blackwell was a trailblazer who not only worked in a male-dominated field but also brought improved medical care to women. Using materials from digital archival resources, the project discusses the gender discrimination Blackwell faced and the female network she created to achieve professional success. This recovery project expands students' knowledge of women's literary and historical importance and contributes to the growing field of health humanities.

Kelly Marino (History) – “Votes for College Women: Maud Wood Park and the College Equal Suffrage League”

American college and university students carried out active and understudied campaigns to gain legitimacy and support for women's suffrage at institutions of higher education across the United States from 1905-1920. The primary organization responsible for directing campus activism was the College Equal Suffrage League (CESL), formed by Massachusetts teacher Maud Wood Park to recruit more upper- and middle-class, well-educated students and alumni to the women's rights movement. The league's campaigns reinvigorated the suffrage cause at an important moment in the early 20th century by using educational tactics as tools to cultivate a scholarly voice, appeal to the upper classes and fit within the contexts of higher education and larger movement for progressive reform.

Abby Bender (Languages & Literature) – “Silenced Voices: The Irish Mother and Baby Homes Commission of Investigation”

The Irish Mother and Baby Homes Commission of Investigation, established in 2015 and concluded with its final report in 2021, addressed the systemic institutionalization of pregnant, unwed women, who were incarcerated, treated with brutality and separated from their children. The final "official" report on this tragic and shameful chapter of Irish history was not, however, the end of the story. This paper examines the work of survivors and activists who rejected the occlusion of women's voices from the report and explores the ways in which these voices insist on being heard, beyond the official, and insufficient, redress offered by the state.

## **Room 2 (NC 104) | Congressional Policy Practice Internship: Experiential Learning Through Applied Policy Practice**

Jason Ostrander & Kate Kelly (School of Social Work)

As the signature pedagogy in social work, field education plays a pivotal role in preparing social work students with an ideal opportunity for experiential learning through applied policy practice. The readiness of social workers to engage in policy practice as an integral component of their professional roles begins during their social work education. Unfortunately, opportunities for social work students to engage in applied policy practice within field education are minimal. In a thorough review of the literature, Weiss-Gal (2016) found a continuing need for experiential learning in policy practice.

This presentation will discuss the Congressional Policy Practice Internship (CPPI), a collaborative project involving students at three universities on both the east and west coasts. Through this project, students were assigned bill topics on which to work as well as Congressional staff with whom to liaison. CPPI provided training, supervision and guidance to students as they worked on the bills to impact federal child welfare policy. The presenters will provide practical strategies and tools for connecting students with Congressional offices to develop experiential learning opportunities, including strategies for working relationships with Congressional staff, supervision strategies and policy practice tools, such as Congressional matrices and white papers.

### **Room 3 (SC 220) | What Makes Fido Special: Discussing Dogs from an Interdisciplinary Perspective**

Dawn Melzer (Psychology) – “Service and Therapy Canines on Campus”

As student mental health needs increase, administrators and college counselors are looking to implement new programs to help students manage stress and increase self-efficacy. Many colleges, including SHU, bring therapy dogs to campus at the end of each semester to help students relieve their stress. Though research on the impact of canine interactions on student mental health is still in its infancy, findings indicate that the presence of canines on campus leads to reduced anxiety levels. The Canine Cognition Lab works with animal-assisted therapy dogs and service dogs. Research related to the benefits of even brief interactions with therapy dogs on campus and SHU’s student service dog training program, in partnership with Exceptional Sidekick Service Dogs of Newtown, will be discussed.

Deirdre Yeater (Psychology) – “Canine Cognition”

Given the lengthy history between dogs and humans, it is surprising that it has only been in the last two decades that psychologists have studied the special nature of cognition in dogs. Some researchers propose that dogs are human-

like in their social cognition, however, many canine studies have inconsistent or inconclusive findings. SHU's Canine Cognition Lab utilizes methodologies commonly used with human infants/children to explore canines' cognitive capabilities. Findings from a recent study demonstrating canine object permanence will be presented.

Chelsea King (Catholic Studies) – “The Soul of a Dog”

Many in the Catholic intellectual tradition (CIT) think that only human beings have a soul. Typically, the soul is attributed to human beings because of their ability to reason, ability to use moral judgement and their unique relationship with God. This, of course, secures one of the fundamental claims of the CIT—the dignity of the human being. But are we really the only creatures with souls? In this presentation, I argue that dogs have reason, a “dog-sense” of morality and unique personalities that allow them to be in relationship with us, and thus, with God. Therefore, dogs do have something akin to a soul. Far from threatening the dignity of the human being, this new understanding of the soul raises the dignity of all creation.

### **Room 4 (NC 105) | Irish Philosopher, Writer & Mystic John Moriarty: Perspectives on the Ecological Challenges of the 21st Century**

Charles Gillespie (Catholic Studies) – “Dreamtimes and Harrowings: Moriarty's Genre of Ecological Mysticism”

Entering into Moriarty's writing can be a daunting task, particularly because his books refuse easy classification. Moriarty's brand of ecological mysticism (steeped in Celtic Christianity and Roman Catholicism, but also open to the wisdom of the world) refutes contemporary disciplinary and genre restrictions that preclude cultural and mythological insights. Like Pope Francis, Moriarty finds a spiritual root to our ecological challenges. Moriarty presents a theologically and philosophically rich poetics that befits the beauty and mystery of a created world under threat of Titanic proportions. I explore Moriarty's titular concept of Dreamtime (1994) as it names a mode of a watching with Jesus that recovers and integrates, rather than conquers and assimilates, Celtic and Otherworld stories. “If it can be said of Dreamtime that it is philosophical, it is philomorphically that it is so” (*Dreamtime*, 260). My paper will introduce some keys for interpreting Moriarty's response to what he calls “ecological havoc.”

Marie Hulme (Languages & Literature) – “John Moriarty and Gerard Manley Hopkins: In Conversation on the Grandeur of God's Divine Ground”

My presentation will consist of an examination of selected works of Irish mystic, poet and philosopher John Moriarty and those of British poet Gerard Manley Hopkins in consideration of both writer's response to an increasing degradation of God's creation/the environment. Attention will be given to specific passages that echo the language of a spiritual responsibility for care of the planet.

John Roney (History) – “The Place of John Moriarty in the Environmental Crises”

While a growing awareness of the environmental crisis became apparent at the end of the 20th century, much of the early analysis was based on efficiency and economy alone. It did not call attention to the place of humanity in nature and a deeper reflection on how the modern world had lost touch with nature. The Irish philosopher John Moriarty (1938-2007) has offered a serious challenge to how modern perspectives on the environment have serious consequences to sustainability, as well as a much-needed reassessment of the connections humans have with nature. This paper will outline the historical development of Moriarty's argument and its major conclusions.

Session III | 4 p.m. - 4:55 p.m.

### **Room 1 (SC 101) | Seeking the Sacred in the Secular World**

Michelle Loris (Languages and Literature) – “Religious Allusions and Themes in Joan Didion's *Play it as it Lays* and Gloria Naylor's *Mama Day*”

We will discuss the possible meanings of the religious allusions used in the works of these authors.

Dan Rober (Catholic Studies) – “Poulenc's Dialogues: Catholic Modern on the Eve of Vatican II”

Francis Poulenc's opera *Dialogues of the Carmelites* tells the story of the martyred Carmelite nuns of Compiègne, killed during the French Revolution for their fidelity to their vows. On a surface level, this work might seem apologetic or even triumphalistic in its portrayal of Catholic faith, but understood in the postwar context in which it was written and in that of Poulenc's life, it reads rather differently. This paper considers how this work might help us think through the vision at Vatican II for dialogue between the church and the modern world, in contrast to readings of faith and culture that view hostility to the modern world or the specter of martyrdom as paradigmatic.

Callie Tabor (Catholic Studies) – “Small Revelations in Naomi Shihab Nye’s Poetry”

Contemporary Palestinian-American poet Naomi Shihab Nye trains her eye toward the small things, whether writing about a roadside fruit stand in Texas or an Israeli checkpoint on the West Bank. In the political and religious context of her poems set in Palestine, this poetics of smallness takes on an ethical and potentially religious significance as a resistance to the erasure done through violence. In this presentation, I will explore how Nye’s attentiveness to the small things becomes an act of revelation, inviting us to consider where we might find the good and even God amidst landscapes of violence.

June-Ann Greeley (Languages and Literature) – “Memory Alone: Unfathomable Faith in the Poetry of Eilean ni Chuilleanain’

Many of the poems of the contemporary Irish poet Eilean ni Chuilleanain focus on the spiritual as well as material circumstances of Irish nuns of earlier generations. Herself affiliated with no religious tradition, Eilean ni Chuilleanain intimates both a tacit admiration for yet also obvious bewilderment about the faith of so many women in Ireland who, for centuries, dedicated their entire lives to the Church and their Catholic faith. Yet, as this paper will argue, her poems are more properly read as intimate meditations not simply about the lives of the religiously committed but also on the essential dilemma of faith, its claims and conditions and the enigma of sacrifice. In addition, Eilean ni Chuilleanain’s poetry can be read as a rumination on—in some cases, lament for—the deleterious repercussions of the loss of faith (and hope and love) in contemporary Ireland and, more broadly, in contemporary culture.

## **Room 2 (SC 220) | Overlooked and Underexamined: Examining the Health and Well-Being of Older Adults from Multiple Perspectives**

Jonix Owino (Psychology) – “Determinants of Quality of Life Among Refugees Aging Out of Place”

Aging Out of Place refers to the physical and emotional experience of growing older in a foreign or unfamiliar environment. Refugees flee their home countries and migrate to foreign countries, such as the U.S., for safety. The emotional and psychological distress experienced by refugees who are compelled to leave their home countries can compromise their ability to adapt to new countries, thereby affecting their well-being. However, minimal research exists on aging refugee experiences. As such, the present study seeks to investigate the sociodemographic (i.e., age, sex, country of origin and length of residence) and social connection factors associated with quality

of life among aging refugees. The study consisted of a total of 108 participants from age 50 years and above. The refugees represented in the study were from Bhutan, Burundi and Somalia. Hierarchical regression was used for analysis. The results showed that females, older individuals and refugees who were from Africa reported lower quality of life. Length of residence was not associated with quality of life. Furthermore, when controlling for sociodemographic factors, greater social integration was significantly associated with higher quality of life, whereas lower loneliness was significantly associated with higher quality of life. The results also indicated significant interaction between loneliness and sex in predicting quality of life. The present study highlights cultural variations within refugee groups, which is important in determining how host communities can best support aging refugees' well-being and develop social programs that can effectively cater to issues of aging among refugees.

Duy Nguyen (School of Social Work) – “Disaggregating Asian American Older Adults: Implications for Social Research, Policy and Practice”

Commonly aggregated into one racial group, Asian Americans originate from more than 40 countries with further representation from scores of additional ethnic backgrounds. Data aggregation obscures the diversity among Asian American ethnic groups, especially of their health, social and cultural experiences.

Intergenerational relationships and filial piety are important values common to many Asian-ethnic groups. Asian American older adults are an important part of the family unit, but limited research focuses on their health and psychosocial experiences.

This research applies the Commission on Social Determinants of Health framework to test the contribution of structural and intermediary determinants on health outcomes among Asian American older adults. Further, data are disaggregated to focus on older adults from one of the six most populous Asian ethnicities in the U.S.: Chinese, Filipino, Asian Indian, Japanese, Korean and Vietnamese.

The implications of a disaggregated understanding of Asian American older adults will be discussed. The effects of social determinants of health points to research with local communities that advances population health. In particular, ethnic-specific research reveals a fuller picture of health in older adulthood. Further, culturally appropriate policy and practices are needed to promote successful aging among older Asian Americans.

Michael Vale (Psychology) – “Minority Stress in Older Sexual Minorities: Balancing Risk and Resilience”

Minority stress refers to unique stressors and stigmas that are specific to minority groups, such as disclosing one’s sexuality and being discriminated against. This presentation will focus on current research in the Sexuality, Minoritized Identities and Lifespan Experiences (SMILES) Lab. Specifically, results examining general and daily experiences minority stress in a sample of 300+ sexual minorities (e.g., lesbians, bisexuals, pansexuals, gay men) of different ages (18-90) will be discussed. Minority stress’s links to different risk and resilience factors will be emphasized.

### **Room 3 (NC 104) | Blitz Talks**

Adrienne Crowell (Psychology) – “Studying the Self in the Lab: Multi-Method Approaches”

Dr. Crowell's Self and Emotions Lab studies how people respond to self-threats and exercise self-control. In this talk, she will provide an overview of previous and ongoing studies that incorporate emotional, physiological and personality measurements. Specifically, she will focus on her lab’s work on self-affirmation, a theory that provides a framework for reducing defensiveness in response to threats, and its effects on emotion regulation.

Ashley Stoehr (Biology) – “Red Fish, Blue Fish, Warm Fish, Cool Fish: Assessing endothermy in Swordfish and Other Pelagic Fishes”

Temperature is a key determinant of fish movement patterns, as changes in temperature will impact physiological rate processes and whole-body performance. Amongst large, active, pelagic, swordfish (*Xiphias gladius*) make unique, long-duration foraging dives (>10 hrs) from warm, surface waters (>20°C) to cold waters at depth (~8°C). Swordfish, like tunas and some sharks, appear to elevate the temperature of the swimming muscle above water temperature (i.e., endothermy) during these movements. The ability to maintain warm muscle temperatures, despite fluctuations in water temperature, may allow swordfish, and other fishes with RM endothermy, to better penetrate thermally disparate environments.

Historically, thermal studies classified fishes as those with versus without endothermy. However, the capacity for endothermy may vary between muscle types within an individual, between individuals, between species or within and between environments. This study seeks to employ metrics previously used to assess body temperature versus environmental temperature in small

endothermic mammals and birds (e.g., heterothermic index; thermoregulatory index). Together, these metrics include information about body temperature, environmental temperature and metabolism, all of which can be used to place various fishes along an endothermic continuum. Such a continuum may provide better insight into the physiological and ecological differences that are postulated for endothermic and non-endothermic fishes, but are difficult to visualize with binary classifications. It is only by better understanding the eco-physiology of commercially important fishes, like swordfish, that management can make accurate predictions regarding distribution patterns in a globally warming ocean.

LaTina Steele (Biology) – “Mighty Munchin Mesograzers: Effects of Small Herbivores on Aquatic and Marine Plants”

Plants form the base of most food webs and have evolved many responses that allow them to survive despite being consumed. Although large herbivores pose the most obvious threat to plants, small herbivores (mesograzers) can remove valuable photosynthetic tissue and cause wounds that promote pathogenic infection. My recent work with undergraduates focused on understanding how marsh grasses and aquatic plants respond to feeding by small herbivores such as snails and amphipods. Preliminary data suggest that feeding by these small herbivores is associated with increased production of chemical deterrents in multiple aquatic and coastal plant species. We are in the process of assessing differences in native and invasive aquatic plant responses to native herbivores. When students participate in this work, they get their hands dirty collecting specimens and ecological data in the field, but they also explore the connection between field-based biological data and lab-based measurements that utilize knowledge and skills from other disciplines like chemistry.

Thomas Terleph (Biology) – “Long Distance, Between-Group Vocal Interactions in Wild White-Handed Gibbons (*Hylobates lar*)”

Gibbons are among only a handful of primates that possess discrete territories, defended by pair-bonded mates. These pairs sing loud, complex duets that are thought to communicate to neighbors that share a territory border. Duets can transmit beyond the territories of immediate neighbors, but it is unclear if distant neighbors, who do not share a border with the singing pair, attend to them. We tested the long-range vocal signaling hypothesis in white-handed gibbons (*Hylobates lar*) at Khao Yai National Park, Thailand, over two, 10-day data collection periods in 2019. From 340 recording hours on simultaneously run passive acoustic monitors (PAM), we identified cases of



song overlap between distant groups during great call sequences, and during song interludes (all singing between great call sequences). In support of the long-range signaling hypothesis, pairs attended to parts of even the furthest audible duet songs by rapidly inhibiting their own song. They did this most when both members of a distant, mated pair produced a particular part of the great call sequence, the climax-coda. This part involves rapid succession of sex-specific notes from both the male and female, and thus potentially identifies them as a mated pair. Results suggest that gibbons form complex communities, in which close and distant neighbors interact regularly through loud song, perhaps communicating the location of territories and the pairs within them, to identify potential mates or rivals, or to provide information to mature offspring who are preparing for natal dispersal.

David Luesink (History) - "Making Laboratory Science in China: The Manchurian Plague Prevention Service, 1912-1932"

Late Qing and early Republican China was known as "the Sick Man of East Asia," the home of plague, and as a place without science. How then did Chinese scientists convince Euro-American scientific and political leaders that (a) measures they had taken were preventing a new global plague pandemic and (b) that Chinese laboratories could produce globally acceptable scientific knowledge? When plague broke out in Northeast China in 1910, Dr. Wu Lien-teh, trained in England and in the laboratories of Pasteur and Koch, challenged the newly established scientific understanding of rat fleas as the vector of transmission. He based his alternative theory that this was a primarily pneumonic form of plague on post-mortem examinations and was thus transmitted directly from person-to-person via sputum from infected lungs. Although he was eventually proved correct about pneumonic plague, in 1910 Wu did not yet have definitive scientific evidence of exactly how the disease spread from animals to humans. In 1911 Wu was put in charge of the Qing government's plague efforts, hosted China's first international scientific conference and established China's first scientific laboratory in Harbin. The research conducted at the Manchurian Plague Prevention Service before its takeover by the Japanese in 1931 was nominated for the Nobel Prize in medicine. This presentation will explore the ignored scientific work of Wu's laboratories and ask how this work became globally accepted and discuss implications for the relationship between history and laboratory science today.