



Undergraduate Research Symposium May 17, 2019 Mary Gates Hall

Online Proceedings

POSTER SESSION 1

Commons East, Easel 71

11:00 AM to 1:00 PM

Spectroscopic Studies of Purified Rat TRPV1

Marium Raza, Senior, Biochemistry, Comparative History of Ideas

UW Honors Program

Mentor: Sharona Gordon, Physiology and Biophysics

Mentor: Gilbert Martinez, Physiology and Biophysics

Transient receptor potential vanilloid-1 (TRPV1) ion channels are polymodal signal integrators of noxious stimuli including heat, vanilloids such as capsaicin, peptide toxins, acid, and inflammatory mediators. It is unknown whether activation of TRPV1 by different stimuli is achieved through the same structural mechanism or if different stimuli activate the channel through different structural mechanisms. Clinical trials using TRPV1 antagonists resulted in patients exhibiting hyperthermia, suggesting that TRPV1 plays a role in maintaining body temperature, and highlighting the need to ensure that therapeutics targeting the channel do not disrupt thermal homeostasis. Hence, knowledge of different structural mechanisms for channel activation would aid in the design of therapeutic agents targeting TRPV1. To address this, we have expressed a series of functional single-cysteine rat TRPV1 channels for spectroscopic analysis, with techniques such as electron paramagnetic resonance, double electron-electron resonance, and Förster resonance energy transfer spectroscopy. By probing several structural regions within TRPV1 we can determine which regions of the channels move during activation and whether those are the same for different noxious stimuli.

SESSION 1F

IDENTITY AND DIFFERENCE IN THE CONTEMPORARY MOMENT

Session Moderator: Ralina Joseph, Communication

MGH 234

12:30 PM to 2:15 PM

* Note: Titles in order of presentation.

Gentrification, Displacement, and the Question of Responsibility

Aleenah Halim Ansari, Senior, Human Centered Design & Engineering, Comparative History of Ideas

UW Honors Program

Mentor: Daniela Rosner, Human Centered Design and Engineering

My guiding question is, “how we can I use storytelling to empower the stories and experiences of the black community in the Central Area that has been displaced through gentrification?” Redlining has historically made it harder for people of color to obtain a mortgage or buy a property in certain neighborhoods, and it continues to exist as gentrification. As tech companies like Microsoft, Amazon, and Airbnb among others continue to expand their presence in the greater Seattle area, rent prices have risen and property owners have started building expensive apartments and living complexes for the influx of workers with a high income. This expansion has displaced people of color who have historically lived in the Central Area. Currently there are stories of resilience in communities that have been displaced by gentrification, but they are often not showcased in the public eye and media outlets. I want to focus on the use of radical storytelling as an act of defiance against erasure, and the role of tech companies in the greater Seattle area in displacing communities. Inspired by the interactive digital stories like “Trump Wants a Border Wall. See What’s In Place Already” in the New York Times or “Microsoft By the Numbers” on Microsoft Story Labs, I hope to create a visual digital story about the ways and means of gentrification, and I hope this story can be used to educate the public about the mechanisms of gentrification and where communities move. By conducting interviews with activists and community members in the Central Area and highlighting their perspective through direct quotes and testimonials, I hope to educate everyone about the strength of communities in the Central Area. My goal is to create a project that focuses on empowering people of color and their stories through community activation.

SESSION 2C

ASSESSING THE SOURCES: WOMEN, IDENTITY, AND PRACTICES OF EMPIRE

Session Moderator: Mira Green, History

MGH 231

3:30 PM to 5:15 PM

* Note: Titles in order of presentation.

Exploring Quarantine Practices in 19th Century Ottoman Iraq

*Marium Raza, Senior, Biochemistry, Comparative History of
Ideas*

UW Honors Program

*Mentor: Walter Andrews, Near Eastern Languages and
Civilization*

This research explores 19th century Middle Eastern and European quarantine practices through the personal diaries of Joseph Mattias Svoboda, written in Iraq from 1862 to 1908. Joseph Mattias Svoboda's diaries document a detailed account of daily life and information in the Basra and Baghdad regions of modern day Iraq. Joseph himself was from a prominent European family and worked for an English steamship company, traveling across Iraq during a time when cholera was prevalent and occasionally reached epidemic proportions. I used Joseph Svoboda's notes as a basis to piece together common quarantine practices and procedures utilized in the 19th century by the Ottoman Empire. Using digital transcriptions of the diaries, I used data-mining techniques to extract references to cholera outbreaks, quarantine procedures, and numbers of people afflicted by disease before and after quarantines were put in place. Then, using contemporary European newspapers, medical journals, and historical records, I compared the Ottoman procedures to European quarantine practices. I examined the efficacy of quarantine procedures in both regions depending on the size of each given cholera outbreak. Ultimately, these early forms of public health governance may have influenced global trade patterns. Future projects stemming from this research could look into the influence of European public health practices on Ottoman medical thought, or the comparative role of physicians in the Ottoman Empire and in 19th century Europe. Regardless, hopefully this research encourages others to explore beyond the Eurocentric narrative of developing public health in the 19th and 20th centuries.

SESSION 2I

EQUITY AND ACCESS IN HIGHER EDUCATION

Session Moderator: Gillian Harkins, English

MGH 254

3:30 PM to 5:15 PM

* Note: Titles in order of presentation.

The Grammar of Poetry: Promoting Agency and Creativity in the Education of EFLs

*Emily H Huber, Senior, Comparative History of Ideas,
English*

UW Honors Program

Mentor: Caroline Simpson, Comparative History of Ideas

Students who speak English as a foreign language (EFLs) are pushed within U.S. academic settings to strive for “standard” English—an academic English heralding grammar “correctness” and adherence to rules. EFL curriculum prioritizes for “standard” English, but ignores the ways that terms like “standard” are exclusive, and rarely addresses how an EFL writer may use language in more inventive ways. How do we reimagine the teaching of writing in ways that can not only help EFL writers in formal high-stakes writing, but also open the door to other creative uses of writing which need not adhere to such strict and increasingly hackneyed standards? My research will draw from many of the conversations focused on second-language acquisition and bilingual education, including work from scholars such as David Freeman and Sara Alvarez, to understand the most recent and effective approaches to teaching English as a second language, as well as discover what approaches to teaching creative writing hold untapped potential for EFL students to acquire new language skills. I will use *The Chicago Manual of Style* as a contemporary example of a style guide which prescribes “standard” grammar convention. Using an assortment of the grammar topics selected from Chicago for comparison, I will discuss examples of deviations from grammar conventions by writers from various linguistic backgrounds, including Safiya Sinclair, Ocean Vuong, and Mohsin Hamid. By investigating who makes English “standards,” how EFLs best learn, and how these standards have been broken for the better, I aim to create a subversive style guide for EFL writers which is useful for both formal and creative writing.

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EQUITY AND ACCESS IN HIGHER EDUCATION

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Pathways to UW after Incarceration or Detention

Oloth Insyxiengmay, Junior, Comparative History of Ideas

Mary Gates Scholar

Mentor: Carrie Matthews, English

Mentor: Gillian Harkins, English

Many communities of color have been disenfranchised as a result of interactions with the criminal legal system. While many studies have shown that access to higher education reduces recidivism and encourages upward mobility, a very small percentage of this impacted population are actually able to access institutions of higher education. Therefore, the purpose of this research is to address the disparate representation of system-impacted individuals in higher education. This project aims to answer and begin to respond to the following questions: 1) What are the challenges and outright barriers for system-impacted students who wish to continue their education at UW? 2) What can UW do to make it a feasible destination for students who are system-impacted? This research project includes: the collection and analysis of existing data on system-impacted individuals and access to higher education; interviews with UW administrative offices that may play a role in the access to higher education for system-impacted individuals. Thereafter, a working group consisting of: system-impacted individuals; system-impacted students; students interested in criminal justice reform; and UW faculty interested in criminal justice reform; will form and implement strategies on how to lower institutional barriers and create clearer pathways to the UW for system impacted-individuals. By building partnering strategies with the UW community, the goal of the Pathways to UW project is to develop more clearer and transparent pathways for individuals who have been system-impacted to enroll on UW campuses. I want to ultimately build a community and a working network on campus that supports access and welcomes individuals impacted by the criminal and immigration system. Currently, there is no system in place on campus that supports such a marginalized population. To have such a system in place would address many racial and class disparities among the marginalized communities these impacted individuals traditionally come from.