**POSTER SESSION 1**

MGH 241, Easel 152
11:00 AM to 1:00 PM

Where is the Beauty in Hatin’ on Your Sista? Penetrating the Color Complex in the African-American Community
Thamar Whidney Theodore, Senior, Communication
Mentor: Ralina Joseph, Communication

This study analyzes the color complex which is defined as psychological fixation about color and features that lead African-Americans to discriminate against each other. There is a lack of dialogue around how history has turned African-American women to focus towards hurting each other through colorism - skin color biases. This research asks how issues of colorism within the African-American community lead to concerns of self-acceptance and perception of beauty among young African-American women. I expect to find evidence of the effects of the color complex and determine how young Black women perceive beauty in order to frame their identity. The findings will fill a gap in existing research by challenging the work of earlier researchers, who have looked at the existence of colorism among African-American women today and look farther into how this issue has been and is affecting their perception of beauty in relation to the acceptance of themselves.

**POSTER SESSION 1**

MGH 241, Easel 151
11:00 AM to 1:00 PM

Disability Advocacy: A Cross Cultural Rhetorical/Discourse Analysis
Riley Taitingfong, Senior, Communication
Mentor: Ralina Joseph, Communication

The inequalities and marginalization of people with disabilities is an issue with global scope. Environmental influences and socially derived assumptions shape the way disability is defined and experienced cross-culturally. Statistics shed light on significant disparities throughout various countries. According to United Nations Enable (2006), 10% of people in the world have some type of disability. Of this entire population of people with disabilities, 80% live in developing countries. Further, out of the estimated 200 countries in the world, only 45 have disability-specific laws such as anti-discrimination. In this research, I examined the driving factors behind this disparity through a cross-cultural comparison of disability advocacy efforts. In particular, I looked to countries that have experienced shifts in policy that directly influenced people with disabilities. I identified disability advocacy taking place in South Africa in a post-apartheid context, Ukraine in a post-soviet context, and the US in post-ADA context (Americans with Disabilities Act). Through rhetorical/discourse analysis of the imagery and language used on nongovernmental groups’ websites, I examined how shifting power dynamics have situated people with disabilities in South Africa, Ukraine, and the US and how these patterns manifested in online communications.

**SESSION 1P**

**MCNAIR SESSION - DIFFERENCE, POWER, AND IDENTITY IN THE MAKING OF COMMUNITIES**

Session Moderator: Janelle Taylor, Anthropology
295 MGH
12:30 PM to 2:15 PM

*Note: Titles in order of presentation.

Re-Imagining Identities: Racial and Ethnic Discourses within Seattle’s Habesha Community
Azeb Madebo, Senior, Communication, Anthropology
Mary Gates Scholar, McNair Scholar
Mentor: Ralina Joseph, Communication

My research explores the means by which identities of “non-white” Habesha (Ethiopian and Eritrean) immigrants are negotiated through the use of media, community spaces, collectivism, and activism. As “black” immigrant subjects who do not have a longstanding historical past in the United States, Habesha face the challenges of having to re-construct and negotiate their identities within binary, black/white, American racial landscapes. To explore the ways in which ethnic-based collectivism and activism challenge stereotypical portrayals of Habeshaness and blackness which are typically cemented through media, I focus on unpacking mediated representations of Hana Alemu Williams, her death, trial, and subsequent support from the Ethiopian Community of Seat-
A sandwich-like design was used: Oligonucleotides complemented alongside fiber diameter to optimize SERS enhancement. For the detection of target nucleic acid (or oligonucleotide), non-aligned nanoparticles. AuNR size and dimension was variable also offers a facile method of aligning anisotropic metal-nanoparticles, which can improve SERS sensitivity over sensitivity. However, current SERS substrates that possess the minimum number of layers. 

Diagnosing infectious disease in the developing world continues to be a challenge due to the lack of infrastructure and resources needed to conduct state-of-the-art methods of nucleic acid detection. Surface enhanced Raman spectroscopy (SERS) is a potential alternative to current point-of-care (POC) nucleic acid tests because it could offer similar sensitivity. However, current SERS substrates that possess the reproducibility and stability needed for translation to POC applications are too expensive. Electrospinning gold nanorods (AuNR) into polymeric nanofibers was employed as a method to reduce the cost, improve reproducibility and lengthen shelf life of SERS substrates for POC applications. Electrospinning also offers a facile method of aligning anisotropic metallic nanoparticles, which can improve SERS sensitivity over non-aligned particles. AuNR size and dimension was varied alongside fiber diameter to optimize SERS enhancement. For the detection of target nucleic acid (or oligonucleotide), a sandwich-like design was used: Oligonucleotides complementary to the target strand were conjugated to SERS active fibers in a 96 well plate format, allowing for multiplex detection with different probes. After the sample was administered, probe oligonucleotides conjugated to a Raman reporter molecule were washed over the SERS substrate to complex with the bound target strand before Raman testing. Electrospinning produced homogenous fiber meshes with uniformly deposited AuNRs to create reproducible enhancement across the substrate. In addition, the SERS fibers showed prolonged shelf-life suggesting that the polymeric fibers offer stability for AuNRs. Successful conjugation of probe oligonucleotides to the polymer mesh is shown. Initial experiments showed presence of signature Raman spectra associated with the probe molecule, indicating specific binding of the target strand. However, additional experiments are necessary to improve sensitivity. Creation of this technology provides the initial framework that electrospun fibers can offer a mode of translation of SERS to sensitive detection of biologics for POC diagnostic applications.
The type VI secretion system (T6SS) is a molecular export pathway that is widely conserved in Gram-negative bacteria. It mediates interbacterial competition by translocating antibacterial effector proteins from the donor bacterial cell to a neighboring bacterial cell in a contact-dependent manner. The T6 amidase effectors (Taes) are a superfamily of lytic enzymes that degrade the bacterial cell wall by cleaving amide bonds in the peptidoglycan (PG) layer. Taes also have cognate T6 amidase immunity proteins (Tais), which prevent intraspecies intoxication by binding and inhibiting Taes in the periplasm. We hypothesize that this pathway can be exploited for an antibacterial strategy. Specifically, we aim to engineer a P. aeruginosa strain that harbors a novel Tae/Tai pair that can escape recognition by native Tai proteins and predict that this strain will be able to outcompete its wild-type counterpart through the T6 pathway. Towards this end, our group previously generated a mutant library of Tae from P. aeruginosa and screened for variants that escape inhibition by Tai (Tsi1) in E. coli. I am currently experimentally validating several potential escape variants (Tae*) identified by this screen by testing Tae* toxicity in the presence of Tai1 in an in vitro bacterial lysis assay. I will also measure potential changes in in vitro Tai1-binding affinity by isothermal titration calorimetry (ITC).

Phylogeography of West African Agama Lizards
Michael Joseph (Michael) Miller, Senior, Biology (Molecular, Cellular & Developmental)
Mentor: Michael Miller

Phylogeography is the study of the geographic and spatiotemporal distributions of populations, and it is an important tool for investigating the evolutionary history of species. Determining when and where species originated, merged, or moved is critical in understanding the factors that generate biodiversity. Novel Bayesian phylogeographic methods provide a useful tool for obtaining accurate estimates of these important population dynamic parameters. West Africa is a global biodiversity hotspot with a high number of endemic species, and Agama lizards are a diverse and prominent member of this distinctive ecoregion. To investigate the phylogeography of Agama lizards, I constructed phylogenetic trees from over 300 unique samples of Agama lizards from 20 countries using Bayesian phylogeographic inference. Molecular genetic data from a quickly evolving gene (16S rRNA) provided suffi-
cient variation for estimating the divergences between distinct populations. Visualization of the phylogeographic history for the populations was conducted with Google Earth. This group of species is predicted to have originated in the central part of West Africa (i.e., Cameroon, Nigeria, and Equatorial Guinea). At least five distinctive species formed across the region from that one ancestral population, and one paraphyletic group requires further investigation. Outlining the history of species formation in subtropical West Africa, with an emphasis on when and where populations divided, moved, and reconnected, serves to show the benefits of phylogeographic studies as they can reveal patterns that are otherwise too difficult to detect using other approaches. These studies also serve as tools in providing information for the detection of distinct species.