Online Proceedings

SESSION 1C

PUBLIC HEALTH

Session Moderator: Clarence Spigner, Health Services
MGH 231
12:30 PM to 2:15 PM

* Note: Titles in order of presentation.

Regional Epidemiology in Chile: The Key to Implementing an Effective Universal Health Care System
Rachel Lynn (Rachel) Rinehart, Junior, Biochemistry, Public Health-Global Health
UW Honors Program
Mentor: Debra Skaar, Experimental & Clinical Pharmacology, University of Minnesota
Mentor: Bruce Alexander, College of Pharmacy, University of Iowa

Universal health care has been a topic of controversy, largely due to the question of resource management. As part of an Exploration Seminar through the University of Washington, a team of students conducted interviews with health centers in Chile to investigate universal health care. Each team member was responsible for posing questions relevant to their area of study and reporting on the research after the program ended. The goal of the program was to assess health system disparities in Chile.This presentation focuses on the role of regional epidemiology, which studies the population in a local area and tailors the universal health care plan to that region. Open ended interviews with community health workers were conducted at twenty-two medical sites throughout Santiago and Southern Chile. The sites ranged from the private sector headquarters to rural outposts in the Southern Archipelago of Chiloé. Translations between English and Spanish were performed when necessary. The study found that Chile has an overburdened public health care system, particularly in specialty areas. Eighty percent of treatments are not as effective as standards per guidelines. Regional epidemiology decreases waste and increases productivity, especially in the areas of primary care and prevention. The strengthened primary care system reduces the burden of care on the tertiary health system. Regional epidemiology is currently expanding to cities outside of Castro and Chiloé Island. Regional epidemiology is an effective tool for improving the Chilean universal health care system. More research should be done to predict whether regional epidemiology will be effective in private health care and other universal health care systems.

SESSION 1L

MCNAIR SESSION - SOCIAL FACTORS AFFECTING THE WELL-BEING OF YOUNG PEOPLE

Session Moderator: Stewart Tolnay, Sociology
MGH 288
12:30 PM to 2:15 PM

* Note: Titles in order of presentation.

Constructing a Critical Philosophy for Children
James Funston, Senior, Philosophy, Psychology, Portland State University
McNair Scholar
Mentor: Alexander Sager, Philosophy, Portland State University

I explore the role of Philosophy for Children (P4C) and critical pedagogy in middle-school education and argue that P4C is a crucial component of an emancipatory education. A critical P4C is necessary to provide students what education ought to provide, that is moral reasoning skills, tools for thinking, and ability to engage in discourse. Proponents often justify P4C claims that philosophy lessons in K-12 education by demonstrating the improvement of outcomes in other subjects and gains in cognitive skills. Instead, I argue for an intrinsic value to engaging in philosophy with children. Critical pedagogy, and the methods developed within its framework, are helpful here to examine the structure of educational practice and its role in dehumanization, which ”is a distortion of the vocation of becoming more fully human”; critical pedagogy is intended to be a tool for both the oppressors and the oppressed to become aware of their dehumanization. First, I justify P4C by showing that precollege students can understand and engage in philosophical discussion using academic references and my own experience working with middle-school students at the Ivy School in Portland, Oregon. Next I examine the philosophical influences of P4C alongside critical pedagogy to show how they interact and compliment each other. Lastly, I envision pedagogical techniques for carrying out Critical P4C in the classroom. Implementing criti-

cal P4C has the capacity to create communities of inquiry around questions of agency and freedom that are central to critical pedagogy. Critical P4C offers strategies for engaging students in socio-political discussions and promises to break the boundaries between "school life" and the students' everyday life outside the classroom.

SESSION 2J

MISCELLANEA CLASSICA: BEGINNINGS, ENDINGS AND IN-BETWEEN

Session Moderator: James Clauss, Classics
MGH 284
3:30 PM to 5:15 PM
* Note: Titles in order of presentation.

Roman Imperial Deification and the Emperor Domitian as *Dominus et Deus* in His Lifetime
Joseph Bringman, Senior, Classics
UW Honors Program
Mentor: Alexander Hollmann, Classics

From Caesar Augustus onward, various Roman emperors and their family members were officially declared to be gods. The topic of this paper concerns the imperial deification process and the role subjectivity played in which emperors and imperial family members were accorded divine status. Specifically, the personal and political considerations of the reigning emperor or senate that served as the basis as to why a certain individual obtained or was denied deification, and the evolution of the divinization process over time, are examined. Conversely, an alternative act called *damnatio memoriae*, by which the memory of deposed emperors or other unwelcome persons was condemned to oblivion after their death by the state, is also compared. The reactions (as preserved in the poetry and prose of ancient writers) of the Romans and imperial subjects to the imperial deification apparatus in general and the conferral of divinity upon specific persons are also noted. The paper focuses in particular on the reign of Domitian, who upon his succession deified his brother and immediate predecessor Titus, and later his young son as well. In contrast to past imperial customs of deifying emperors after their death, Domitian demanded to be hailed as a god during his own lifetime, and the paper investigates his justifications for this deviation from the precedent that only a deceased emperor or member of the imperial family could be granted apotheosis. He suffered the condemnation of his memory after his assassination. And while poets and writers bestowed voluminous adulations upon him in his lifetime and referred to him as a god, his reputation plummeted precipitously after his death.

POSTER SESSION 3

Commons East, Easel 78
2:30 PM to 4:00 PM

Disruption of Oral Biocorrosion on Titanium Dental Implants: The Electrotherapeutic Approach
James Neak Son, Senior, Biology (General)
Mentor: Alexander Pozhitkov, Oral Health

Peri-implantitis is an inflammation around dental implants due to bacterial infection that can ultimately damage both the soft and hard tissues of the jawbone. After recently discovering that Titanium (Ti) implants play a crucial role in the electrical conductivity of microbial community, we propose a twofold research approach to reduce Ti corrosion known to have detrimental effects to patients' oral health. Aim1 is to create a "stripe-spangled" implant design with a ceramic body coating that isolates the zones of Ti in order to eliminate the biofilm-generated electrical current. Independently, Aim2 uses an electrotherapeutic approach by providing an external power source to counteract the electrical current produced from oral microbiota. Therefore, this poster is primarily focusing on Aim2 to evaluate safety and efficacy of a new oral electrotherapy. We design an in-vitro experiment to simulate a patient's mouth and provide electrotherapy to examine the electrochemical behaviors generated by oral biofilm. Using actual oral microbiota from a volunteer, we found that providing a short-term electrical current affects the microbiota's electrochemical currents. To further our experiment, we will use dogs to test the efficacy of the electrotherapy in vivo. In a broader implication, this research will potentially alleviate medication and invasive surgery to combat peri-implantitis through electrotherapy.

POSTER SESSION 3

Commons East, Easel 79
2:30 PM to 4:00 PM

Creating and Assessing Biocompatibility of Titanium/Ceramic Composite Dental Implants
Elena Vladimirovna (Lena) Webb, Senior, Biology (General)
Mentor: Alexander Pozhitkov, Oral Health

Approximately one in four patients who receive dental implants experience peri-implantitis, an inflammation of soft tissue and bone around dental implants, within 11 years of implant placement. Peri-implantitis is one of the main causes for implant failure and with 500,000 implants being placed a year, it is critical to develop a product that increases the long-term success of implants. Prior research has shown that the electroconductive properties of titanium used in implants facilitate corrosion by oral bacteria, which in turn leads to an increased risk for peri-implantitis. The goal of this project is

to create a composite implant of titanium and insulating ceramic that is biocompatible and capable of osseointegration, but not electroconductive. Our project uses solid ceramic implants that are coated with titanium using a vacuum evaporator. The titanium is deposited in isolated bands and chemically binds to the surface of the ceramic. These islands of titanium will provide a surface against which bone can grow, while the ceramic interrupts the flow of electrons. The implants are placed in a bone model in media mimicking the oral environment, and oral bacteria from a volunteer are injected. The media is then tested for titanium leaching. Going forward we will be testing the implants with osteoblasts *in vitro* to measure biocompatibility. The improvements to existing and widely used technology will serve to increase patient welfare tremendously. Once an implant fails and periimplantitis sets in, no more implants can be placed in that area of the mouth. Extending the working lifespan of the implant will prevent a painful condition and the worsening of dental health. The product of this research will be a cost-effective and long-lasting implant that will be better able to withstand the oral environment.