

Undergraduate Research Symposium May 17, 2013 Mary Gates Hall

Online Proceedings

SESSION 1C

HISTORIES OF POWER, SOCIAL DIFFERENCE, AND COMMUNITY FORMATION

Session Moderator: Ileana Rodriguez-Silva, History
228 MGH

1:15 PM to 2:45 PM

* Note: Titles in order of presentation.

Law, Science, and Human Rights: William Sampson Satirically Challenges Scientific Constructions of Race

Jilene Chua, Senior, Biology (General)

Mentor: Walter Walsh

In 1807, William Sampson is banished from Ireland for his radical cause lawyering and immigrates to America to become its first civil rights lawyer. Some have researched the practice of his critical postcolonial legal theory that culminates to America's first constitutional victories for religious freedom and labor rights. However, few have investigated this practice in promoting racial equality, particularly in the context of scientific constructions of race. One of Sampson's most famous trials, *Almshouse v. Whistelo* involves an unprecedented number of medical expert witnesses attempting to prove and disprove categories of race using physiological understandings of human development. Sampson's cross-examinations of these expert witnesses serves as an entry point to examining the practice of his critical legal theory in the context of scientific racial categories. First, this project identifies Sampson's critical postcolonial legal theory from his writings, particularly his *Memoirs and Discourse on the Common Law*. Then, it examines the practice of Sampson's legal theory in *Almshouse v. Whistelo*, by focusing on his cross-examination of Dr. Mitchell, a famous scientist. And finally, discusses the various books and scholarly research articles citing Whistelo that support or challenge research on human physiological development. This case is cited almost every decade after it is argued from 1832 to 1902 in many scientific texts, such as a chapter on fetal development in America's first physiology textbook, *Human Physiology* by Robley Dunglison—the Father of American Physiology. Legal publications mention the humorous nature of Sampson's cross-examination of Dr. Mitchell, a famous scientist. This project

suggests that Sampson's entertaining cross-examining plays a key role in both challenging Dr. Mitchell's scientific constructions of race and altering physiological constructions of race in 19th century America. It adds to research on Sampson's postcolonial legal theory and illuminates another facet of America's first civil rights lawyer

SESSION 1F

FROM PAPYRUS TO THE INTERNET: TEXTS IN TIME

Session Moderator: James Clauss, Classics
238 MGH

1:15 PM to 2:45 PM

* Note: Titles in order of presentation.

Newbook Digital Texts in the Humanities: The Emma B. Andrews Diaries

Megan Nicole (Megan) Rowland, Sophomore, Near Eastern Studies (Languages & Civilization)

Ariella Mihi (Ariella) Fish, Senior, International Studies

Tessa Eileen Carter, Senior, French, International Studies

Rachel Yim Schlotfeldt, Sophomore, French

Mentor: Sarah Ketchley, Near Eastern Languages & Civilization

Mentor: Walter Andrews, Near Eastern Languages and Civilization

Emma B. Andrews' diaries give insight into the lives of archeologists working in Egypt's Valley of the Kings at the turn of the last century. Due to her association with the archeologist Theodore Davis, Andrews had a unique opportunity to see the excavations in the Valley of the Kings firsthand during her travels between 1889 and 1913. Though these diaries provide valuable cultural, social and archeological perspectives on this period of Egyptian history, they have gone largely unnoticed by the academic community, and this project intends to make these works available as invaluable for academia. In order to bridge a gap in the publishing world, the NEH-funded Newbook Digital Texts project provides a unique environment for the multi-media publication of texts, transcriptions, translations, and annotation of works that are not compatible with traditional publishing or available large-project digital platforms. Newbook Digital Texts' collaborative nature enables individual projects to inexpensively adapt to the project,

providing opportunities for individuals to publish academic works with less expense and hassle. It also enables people to access important texts and resources more easily. As undergraduate researchers, we have the opportunity to work with these primary texts, learning useful digital humanities skills. At the beginning of the process, we learned how to create a structured transcription, allowing us to auto-tag the text. During this process, we have been able to complete a structural analysis of the text. We all worked with XML formatting, creating name lists, and doing content tagging within the text. Additionally, we completed independent research for inclusion in the project's Wikipedia. Upon reading through the diaries and editing them, our project recognized important links to other excavators and research done in the Valley of the Kings, and we believe the diaries will fill gaps within academia in this field.

SESSION 1F

FROM PAPYRUS TO THE INTERNET: TEXTS IN TIME

Session Moderator: James Clauss, Classics

238 MGH

1:15 PM to 2:45 PM

* Note: Titles in order of presentation.

The Newbook Project: Digital Texts in the Humanities of the Joseph Mathia Svoboda Diaries

Kelsey Arlene Hallahan, Junior, Near Eastern Studies (Languages & Civilization)

Rachel E. (Rachel) Brown, Senior, Near Eastern Studies (Languages & Civilization)

Tessa Eileen Carter, Senior, French, International Studies

Dana Talant, Senior, French, International Studies

Ariella Mihi (Ariella) Fish, Senior, International Studies

Sophia Elisa (Sophie) Welte, Senior, International Studies: Europe

Mentor: Walter Andrews, Near Eastern Languages and Civilization

The JMS Diaries is a collection of 16 original diaries and 30 transcriptions of original diaries written by Joseph Mathia Svoboda, an employee with the Lynch Brothers' Tigris and Euphrates Steam Navigation Company. He wrote his daily accounts of life on the Euphrates rivers between 1862 and 1908. The diaries give us insight into the everyday life of people in Iraq during the later half of the 19th Century. These diaries offer valuable cultural, social and anthropological perspectives about Iraq during this period and are invaluable to academia as primary source documents. The NEH-funded Newbook Digital Texts in the Humanities project works to transform such valuable primary source documents into digital texts in order to make them more accessible to scholars.

In order to further this academic resource development, the project has been licensed with the Library of Congress as an independent publishing house. In this way, the Newbook project offers a collaborative environment in which individual projects can be inexpensively adapted, providing opportunities for individuals to publish academic works with less expense and inconvenience. It also enables scholars and the general public to access important texts and resources more easily. As undergraduate researchers, we work with these primary texts learning both research and digital archiving skills. We work through a five phase process consisting of transcribing, editing, analyzing, encoding and formatting each text. Each phase offers us a different challenge and requires a different skill set. Over the quarter our work varies from the physical transcriptions of the diaries to creating Perl scripted programs and using XML to markup and digitize the texts. Since beginning the project in September 2012, we have completed two diaries consisting of 400 pages each, and continue to work toward advancing this evolving, ongoing repository of primary source documents.

POSTER SESSION 4

MGH 241, Easel 156

4:15 PM to 5:45 PM

Optimization of Chemosensitization via AKT Inhibition in Acute Myeloid Leukemia

Alparslan Asan, Senior, Biochemistry

Mentor: Roland Walter, Clinical Research Division, Fred Hutchinson Cancer Research Center

In adults, acute myeloid leukemia (AML) generally remains difficult-to-treat, and most patients are currently expected to die either of their disease or treatment-related toxicities. The need for novel therapies is thus unquestioned. With increasing availability of specific small molecule inhibitors, one line of research has focused on targeting signaling pathways that are pivotal for the *in vivo* growth, survival, and propagation of AML cells as a means to improve therapeutic outcomes in this disease. Emerging evidence suggests that the phosphatidylinositol 3-kinase (PI3K)/protein kinase B (AKT) pathway, a key physiologic regulator of transcription, translation, cell cycle progression, differentiation, metabolism, and suppression of apoptosis, could provide a rational drug target in AML. Constitutive activation of AKT signaling is indeed observed in many patients with AML, and several groups have reported inferior relapse-free and overall survival in AML cases with AKT activation. Given these data, we recently conducted an early phase clinical trial testing MK-2206, a highly specific allosteric AKT inhibitor, in patients with relapsed AML. However, MK-2206 has insufficient anti-AML activity at tolerated doses. Therefore, the goal of my project in the pre-clinical studies that I am currently carrying out is to identify signaling pathways that are critically important for AML cell

survival in the presence of MK-2206 with the goal of developing combination therapies that optimize chemosensitization that can be achieved with AKT inhibitors. This is being done by mixing the MK-2206 inhibitor with various conventional chemotherapeutic drugs and measuring their toxicity on different AML cell lines by use of flow cytometry.