

2013 AU Summer Scholars and Artists Fellowship Recipients

Kate Brunette

School of International Service: International Development and Latin America

Faculty Mentor: Eve Bratman, School of International Service

Project Title: Urban Development in Bogota, Columbia

Abstract: My research hopes to examine the relationship between public transportation and poverty conditions: to what extent is access to public transportation connected to conditions of poverty? I predict that greater access to public transportation will be correlated with improved poverty conditions as residents are able to save money and time on commuting. I will be examining a variety of variables to measure conditions of poverty including: NBI (Necesidades Básicas Insatisfechas or Unsatisfied Basic Needs), income, income satisfaction (measured in terms of ability to cover necessary expenses), unemployment, rental rates, and quality of life. I hope that by examining a variety of poverty indicators, I can present a more nuanced answer to my research question connecting public transportation and poverty conditions.

Moira Esson

College of Arts and Sciences: Chemistry

Faculty Mentor: Monika Konaklieva, Department of Chemistry, College of Arts and Sciences

Project Title: The Medication for the Epidemic of Antibiotic Resistance

Abstract: Antimicrobial resistance is a pressing global threat to healthcare. The number of cases involving drug resistant bacteria is on the rise globally. Novel β -lactam compounds have been developed, which have proven to be effective against the bacteria *Mycobacterium tuberculosis* and *Moraxella catarrhalis*. However, the molecular target of these novel β -lactam compounds is still unknown. As such, biotin-tagged β -lactam compounds will be synthesized for the determination of the molecular target of these novel β -lactam compounds. The biotin-tagged β -lactam compounds will be analyzed using Nuclear magnetic resonance and mass spectroscopy.

Jessie Hirtenstein

College of Arts and Sciences: Physics and Mathematics

Faculty Mentor: Philip Johnson, Department of Physics, College of Arts and Sciences

Project Title: Shaping Light to Control Ultracold Atoms and the Quantum World

Abstract: Ultracold atoms, when trapped by laser light, interact with each other differently according to the geometry of the potential well in which they are held. We are focusing on the dependence of the energy spectrum a pair of such atoms has on the shape of their confining potential. Both a numerical technique of diagonalizing the Hamiltonian, and an analytic approach of Perturbation Theory will be used to calculate the spectrum. By explicitly finding the dependence of the interactions of atoms on their potentials, we are one step closer to controlling the quantum world.

Allie Martin

College of Arts and Sciences: Performing Arts (Violin Performance)

Faculty Mentor: Shalini Ayyagari, Department of Performing Arts, College of Arts and Sciences

Project Title: Go-Go and Gentrification in Washington, D.C.

Abstract: Go-go music is one of the only forms of music indigenous to Washington, D.C. Although go-go is cherished by the African-Americans that created it, gentrification and socioeconomic factors are displacing these very people to surrounding suburbs in the D.C. Metropolitan area. Furthermore, there is evidence pointing to a disconnect between those who see D.C. as a black city and those who do not, despite African-Americans comprising over 50% of the population since 1970. Using interviews, field research, and archival work, this project will explore the displacement of the African-American population of DC and their important cultural contribution of go-go music.

Jose Ramirez-Rivera

School of International Service: International Studies

Faculty Mentor: Cathy Schneider, School of International Service

Project Title: Political Discourse in Salsa: The Compositions of Tite Curet

Abstract: Political discourse in music has been investigated by many academics because it encompasses and communicates social practices (which may include ideologies, attitudes, culture, etc.). Salsa, however, has received little academic attention. The purpose of this study is to evaluate some of the songs of the most prolific salsa composer of all time, the Puerto Rican Tite Curet. My research asks the followings questions: How did Puerto Rican and Latin American political struggles influence the development of salsa? What role did Tite Curet's political lyrics play in the popularity and spread of the musical genre? What other salsa musicians were influenced by Tito Curet? What was the relationship between the political context and the development of the musical form? In order to explore and evaluate these questions, discourse analysis will be used as a research method.

Sagatom Saha

School of International Service & Kogod School of Business: International Studies and Business Administration

Faculty Mentor: Dylan Craig, School of International Service

Project Title: International Studies and Business Administration

Abstract: The goal of this study is to analyze what invites FDI to particular Central Asian republics, but not others. These countries are known for considerable proven energy reserves while demonstrating high, rapid economic growth. Given relative homogeneity in resource endowments, one would expect each republic to realize comparable FDI inflows. However, the opposite is true. I will present my research as a comparative study of Azerbaijan, Uzbekistan, Kazakhstan, and Turkmenistan, exploring variables including trade openness, infrastructure, urbanization, and labor flows. Understanding what attracts foreign direct investment in Central Asia is crucial to understanding development of the region as a whole.

Jonathan Wallen

College of Arts and Sciences: Mathematics and Economics

Faculty Mentor: Xuguang Sheng, Department of Economics, College of Arts and Sciences

Project Title: Macroeconomic Forecasts and Central Bank Transparency

Abstract: Economic agents depend on professional macroeconomic forecasts to guide decision making, especially in times of uncertainty. Unfortunately, professional forecasters tend to be inattentive to news and disagree on economic expectations. In contrast, central banks have recently become more transparent by increasing public communications. This research project uses professional forecasting data over 20 years and across the G7 to measure the extent to which central bank transparency increases the attentiveness of professional forecasters. Through the use of quantitative econometric models and qualitative assessments of central bank policy, we will identify key factors to improving macroeconomic forecasts.

Colin Wick

School of International Service & College of Arts and Sciences: Performing Arts and International Studies

Faculty Mentor: Shalini Ayyagari, Department of Performing Arts, College of Arts and Sciences

Project Title: Empowering Edutainment in Nairobi

Abstract: My work will evaluate the role of music and drama in improving mental and physical health by producing an impact assessment of Sarakasi Trust's Hospital Project, a program promoting an artistic approach toward healing and rehabilitation by providing psychosocial support to youth in hospitals, clinics, and rehabilitation centers in Nairobi, Kenya. By investigating how the Hospital Project's activities engender outcomes aligned with the program's mission, I will show music instruction and performance improves the mental and social health of Nairobi's youth. I will evaluate primary print sources, conduct interviews, gather survey data, and use participant-observation methodology in my assessment.