

Recipients of the 2018–2019 Rutgers Global Grants

Internationalizing the Curriculum

- **Dr. Ying-Yu Chao, Division of Nursing Science, Rutgers School of Nursing**
Paving the Way for Academic Collaborations in Nursing with China
The School of Nursing has developed a preliminary working collaboration with Xiamen University located in Xiamen, China through hosting nurse scholars and leaders. The School of Nursing seeks to build on those relationships by developing a sustainable Rutgers faculty-led study abroad program with Xiamen University where students will be immersed in Chinese culture, learn different health care practices, including traditional Chinese medicine and its integration into daily health practices, and have opportunities to visit a variety of clinical settings and gain an understanding of this dynamic system of healthcare.
- **Dr. Keith Green and Dr. Carol Singley, Dept. of English, Camden College of Arts and Sciences**
Writing Revolutions: Internationalizing the Curriculum
Philadelphia is the cradle of democracy in the Western hemisphere, and Havana is the political seat for the only remaining communist country on this side of the Atlantic. Based on the rich legacy of these two iconic metropolises, we are proposing a course that examines the reality and representation of revolutions in and around Havana and Philadelphia, entitled "Writing Revolutions."
- **Dr. Benjamin Lintner, Dept. of Environmental Sciences, School of Environmental and Biological Sciences**
Tropical Environments: A Transdisciplinary Embedded Study Abroad Course Fostering an Integrative Approach to Understanding 21st Century Challenges Facing the Tropics
This proposal involves the development of an embedded study abroad opportunity built around a new course in tropical environments. In particular, we will present tropical environments through multiple lenses, including climate and climate change, ecosystems and biodiversity, and land use and disturbance. Our proposed course involves a semester-based component during Spring 2019 as well as a 10-day, for-credit "field experience" at La Selva Research Station in Costa Rica, in May 2019. While at La Selva, students will engage in hands-on, intensive research centered on a set of pre-formulated mini-projects organized around the theme of the interface between the undisturbed environment of La Selva and its increasingly disturbed surroundings. Our course will be team-taught by a diverse group of faculty from SEBS and SAS. We envision a course enrollment of 20 students drawn from across Rutgers.

- **Dr. Brian Phillips Murphy, Honors College, Rutgers University–Newark**
Creating an Embedded Rutgers University-Newark Honors College Course in Malta/Sicily

This project proposes to create a course for the Honors College at Rutgers University-Newark that will have an embedded study abroad component. We hope that this pilot course will create a template for similar future courses of varying destinations and serving different disciplines. We are proposing to run a pilot course in Spring 2019 with the abroad component held during the spring break period on the islands of Malta and Sicily. "Race and Ethnicity in the Medieval Mediterranean" will be an Honors History seminar. We have been in contact with representatives from the University of Malta who are interested in being our cooperating institution abroad, providing travel, housing, and other support. We have been in discussion with Prof. Sarolta Takacs about a joint venture wherein the SAS Honors Program will run a simultaneous course and share the abroad experience with Newark Honors College students.

- **Dr. Richard Stansfield, Dept. of Sociology, Anthropology and Criminal Justice, Camden College of Arts and Sciences**

Study Abroad in Sociology, Anthropology, and Criminal Justice

Beginning in the academic year 2015/2016, the department of Sociology, Anthropology, and Criminal Justice began an internationalization effort, after identifying an existing course at Rutgers University-Camden (Comparative Criminal Justice) as an excellent candidate for integrating and implementing a study abroad component. Due to the success of this first class, and with the support of our department chair and undergraduate director, we have been committed to sustaining our internationalization effort. To this end, we seek to achieve two goals in the next two years. 1) As the criminal justice study abroad has now expanded to include graduate students, and cross-collaboration with the department of biology/chemistry and students in the forensic science minor, we seek to build a sustainable faculty recruitment plan that can serve all students on a yearly basis. 2) As an interdisciplinary department, we seek to develop a new study abroad course for our students in sociology and anthropology, offering all of our students the same opportunities for engaged and experiential learning.

International Collaborative Research Grants

- **Dr. Leyla Amzi-Erdogdular, Dept. of History, Newark College of Arts and Sciences**
Sevdalinka: Literary-Musical Production of Europe's Indigenous Muslims in Bosnia Herzegovina

This is a proposal to establish a new partnership between Rutgers University Newark and the University of Sarajevo. The partnership will launch an interdisciplinary research project that will lead to external funding from the National Endowment for the Humanities and publication of a book length volume. We seek funds to develop the first ever scholarly critical edition of Sevdalinka, the corpus of traditional poetic-performing genre by indigenous European Muslims in Bosnia Herzegovina. This critical analysis will contribute to the fields of literature, history, and ethnomusicology. The project will challenge contemporary geohistorical boundaries and established national narratives at the root of ethno-religious conflict, with implications for critical study of broader topics including religious coexistence and tolerance, and the history of Muslim presence in Europe.

- **Dr. Wen L. Anthony, School of Social Work**

- *What Facilitates Video Gaming Disorder? An Exploration of Chinese University Students*

- Video gaming disorder (VGD) has become a public concern for 24 million Chinese adolescents and emerging adults, and is associated with negative consequences. However, a dearth of research has investigated factors facilitating VGD development with a Chinese sample that can be targeted by interventions. Thus, Anthony (Assistant Professor at Rutgers University) and Geng (Associate Professor at Shandong University in China) will conduct a cross-sectional survey with 1,000 university students at Shandong University in China to explore: 1) the characteristics of VGD of Chinese university students, and 2) the underlying cognitive factors of VGD (e.g. relationships among VGD symptoms and how students think about gaming and their motivations to play video games). Findings will inform development and adaptation of evidence-based interventions that can be tailored to youths and young adults with VGD in China and worldwide.

- **Dr. Tewodros Asefa, Dept. of Chemistry and Chemical Biology, School of Arts and Sciences**

- *Development of Efficient and Sustainable Nano Photoelectrocatalysts and Unravelling their Structures and Properties using Powerful Microscopic & Spectroscopic Techniques*

- It has become increasingly evident that economically viable, clean, renewable energy sources are essential to sustain every aspect of modern life. It is also known that the sun possesses the largest potential to satisfy the growing need of renewable energy. Despite this, commercial energy systems for direct conversion of solar energy into chemical or synthetic fuels are scarce due to the lack of sustainable and efficient catalysts. In this project, the PI at Rutgers University, in collaboration with his counterpart at Czech Academy of Sciences in Czech Republic, will apply

nanotechnology to develop efficient nano-photoelectrocatalysts that can produce synthetic fuels and H₂ (a clean energy carrier) from water at the expense of sunlight.

- **Dr. Francis Barchi, Bloustein School of Planning and Public Policy**
Developing an Evidence-Based Ethics Education Program in Responsible Conduct of Research for Medical Trainees in Guatemala
Although training in Responsible Conduct of Research (RCR) has become a standard part of postgraduate education in academic medical centers in high-income countries, it has yet to become part of the training curriculum in surgical residency programs in Guatemala. A team of faculty from Rutgers-New Brunswick, the Universidad de Francisco Marroquin in Guatemala City, and Rutgers RWJ Medical School Department of Surgery propose to develop, teach, and evaluate the first-ever RCR training program for surgical residents at two major hospitals in Guatemala City. The proposed research and training program will also build capacity in Guatemalan medical faculty to deliver course content using active-learning pedagogical methods and will develop an evidence based RCR training curriculum that can serve as a model for other medical residencies and undergraduate medical education programs in Guatemala.
- **Dr. Judith Deutsch, Dept. of Rehabilitation and Movement Sciences, School of Health Professions**
Open Rehabilitation Initiative: Usability and Knowledge Translation
Use of virtual reality (VR) technology has been shown to improve rehabilitation outcomes for persons with acute and chronic health conditions. Many of these VR simulations are developed for research, shown to be efficacious, but not made available to the public. The goal of the open rehabilitation initiative (ORI) is to create an online community where developers and scientists may share their vetted VR simulations with clinicians. The ORI will reduce the gap in transferring technology and knowledge from the lab to the clinic. Further, by having clinicians communicate with engineers and scientists, it will serve as a community to enhance development of technologies that are useful for rehabilitation. In this project, we will test the ease of use of the open rehabilitation initiative as well as query clinicians on how to use it to improve practice.
- **Dr. Shauna Downs, Dept. of Health Systems and Policy, School of Public Health**
Mapping the Food Environment in an Urban Slum in Kenya: A Mixed-Methods Pilot Study to Inform the Development of a Discrete Choice Experiment
Low-income urban slum populations in Kenya are among the most vulnerable to the multiple burdens of malnutrition, experiencing both high rates of undernutrition and overweight/obesity, sometimes within the same household. Food environments in these settings may not support nutritious food choices. However, little is known about these food environments and how they influence the drivers of food choice. This

exploratory pilot project will use mixed-methods to characterize food environments in an urban slum in Nairobi, Kenya and describe the drivers of food choice among women slum dwellers. The findings of this research will be used to inform the development of a NIH R01 proposal, with researchers from Rutgers and Agri-Food Economics Africa, to conduct a discrete choice experiment that provides insight into how food preferences can be modified under different intervention scenarios in an effort to reorient food choices towards those that reduce the risk of all forms of malnutrition.

- **Dr. Adam Gormley, Dept. of Biomedical Engineering, School of Engineering**
Rutgers/UNSW: Development of a New Drug Discovery Platform Technology Based on Synthetic Polymers

The goal of this research is to use new technologies in polymer chemistry invented by Drs. Chapman and Gormley to develop a new class of therapeutics. Recently, we have published on a new tool to combinatorially prepare and test multivalent synthetic polymers that can bind to and manipulate drugable proteins. This recent technology holds tremendous promise to replace current biopharmaceuticals with synthetic mimetics. Therefore, we aim to apply this technology to a diverse pool of target diseases and research models in order to validate the technology and begin a new process of drug discovery between our two labs at Rutgers and the University of New South Wales.

- **Dr. Lee Kerkhof, Dept. of Marine and Coastal Sciences, School of Environmental and Biological Sciences**

The Tundra/Alpine Microbiome: From the Finnish Arctic to the Tibetan Plateau

This project will establish a research and intellectual exchange between Rutgers University, the Natural Resources Institute, Finland and the Institute of Tibetan Plateau Research, Chinese Academy of Sciences in Beijing, China. The proposed activities will enable development of a joint research effort to expand the investigation of cryophilic bacteria in soils representing the Arctic and the "Third Pole"-the Himalayan Mountains. The study will elucidate the active bacteria within polar, boreal, and alpine soils by stable isotope probing and ribosomal operon profiling. The research will assess the effect of carbon source and ultimately temperature change on microbial activity. The research is important for understanding how climate change will influence soil respiratory processes. Changes in polar and alpine environments could contribute significantly to CO₂ flux to the atmosphere and accelerate global warming.

- **Dr. Lisa Klein, Dept. of Materials Science and Engineering, School of Engineering**
Interdisciplinary Approach to Three-Dimensional Design of Materials

This proposal aims to facilitate the assembly of an interdisciplinary team to focus on new ways to structure materials on surfaces for a variety of functions. By combining

the expertise at Rutgers in sol-gel processing in the Materials Science & Engineering Department and electrospinning in the Mechanical & Aerospace Engineering Department, with the expertise at Technion in electrospinning in the Chemical Engineering Department, a methodology for 3- dimensional patterning can be conceived and demonstrated. The plan includes visits by students and faculty to Technion to promote this interaction and carry out research in the laboratory. This will allow the use of complementary facilities to prepare and fully characterize the materials. The proposal requests funding for travel and costs related to preparing and characterizing materials. Joint abstracts and publications are expected. Additional funding for expanding this effort will be identified and proposals will be submitted to the appropriate agencies.

- **Dr. KiBum Lee, Dept. of Chemistry and Chemical Biology, School of Arts and Sciences**

Stem Cell Reprogramming using Nanotechnology and Chemical Biology Approaches

Transcription factor (TF) proteins, which are master regulators of gene expression, have been identified as the critical element orchestrating stem cell and reprogramming. Delivering proteins, especially TFs, into cells to replace dysfunctional proteins, holds immense potential for applications focusing on regulating cellular behaviors such as cellular reprogramming, cancer treatment, and stem cell therapy. However, practical application of these methods for stem cell biology or regenerative medicine is extremely limited because exogenously delivered proteins, especially TF proteins, have low delivery efficiency, cannot regulate genetic pathways at the transcriptional level, lack cell-specific targeting capabilities, and above all, are extremely vulnerable to degradation by intracellular proteases. Therefore, overcoming current protein delivery and viral vector-based genetic manipulation for inducing cellular reprogramming, we propose to develop an innovative method to construct a completely artificial and functional TF that is capable of replicating the functions of endogenous TF proteins by combining nanomaterials with small molecules.

- **Dr. Mingwei Liu, Dept. of Labor Studies and Employment Relations, School of Management and Labor Relations**

The Effects of Chinese Trade Unions on Workers

Interest in the economic effects of Chinese trade unions has been growing recently. However, to date the limited number of studies only provide mixed results and suffer from some major conceptual and empirical limitations. This interdisciplinary project aims to provide a more rigorous analysis of the Chinese union effects by addressing these limitations. It will introduce a new theoretical lens to capture the unique institutional features of Chinese unions and develop hypotheses from this new perspective. The hypotheses will be tested by analyzing three large datasets: one at

the enterprise level and two at the individual level, which allow us to take careful consideration of the unique organizing method, organizational structure, internal political process, and external constraints and mandates of Chinese unions. This project will strengthen the newly-established partnership between Rutgers and Capital University of Economics and Business in China.

- **Dr. Carter Mathes (Dept. of English) and Dr. Kevon Rhiney (Dept. of Geography), Rutgers Advanced Institute for Critical Caribbean Studies, School of Arts and Sciences**

Global Climate Change and the Caribbean: Climate, History and Responsibility

This collaborative research grant proposal is aimed at bringing together a multidisciplinary group of scholars from the Caribbean studies community at Rutgers-New Brunswick, based largely in the Rutgers Advanced Institute for Critical Caribbean Studies (RAICCS) with scholars and researchers affiliated with the Centre for Reparation Research (CRR) at the University of the West Indies (Mona) to address pressing questions related to the historical, economic, environmental, and justice dimensions of global climate change, and their implications for the Caribbean region. The intent of this grant proposal is to create a collaborative working group between RAICCS and the CRR that will be the foundation of potentially wider regional institutional collaborations between these units and units at the University of Puerto Rico as well as the Department of Global and Sociocultural Studies at Florida International University.

- **Dr. Daphne Munroe, Dept. of Marine and Coastal Sciences, School of Environmental and Biological Sciences**

Lessons from a Global Examination of Complex Ecological Interactions in Fisheries

In today's age of the Anthropocene, complex ecological interactions are initiated by human activities like hunting and fishing. The marine ecosystem is particularly vulnerable given higher rates of human predation (fishing) and less well-defined ecological interactions than those in terrestrial systems. In this project, we will initiate a new collaboration with Bangor University scientists, with whom we have complimentary datasets spanning a range of direct fishing impacts from regions of the U.K. and U.S. that will be used to compare the response of population structure and growth to varying fishing pressure. Building on this pilot study, we will use this model system (the global whelk fishery) to initiate a global network capable of addressing broad questions about the combined effect of direct and indirect (facilitative) fishery impacts. Collectively this collaboration will allow deep questions about direct and indirect ecosystem impacts of human resource use in the oceans.

- **Dr. Tim Raphael, Dept. of Arts, Culture and Media/Center for Migration and the Global City, Newark College of Arts and Sciences**

Documenting Displacement through Digital Media in Colombia & Malta

Newest Americans has been documenting post-1965 immigrant histories and trajectories in New Jersey since 2014. With Reverse Migration, we began exploring the push-pull factors that led men from a town in the Guatemalan Highlands to migrate to Morristown, NJ, and the global circuits and networks their migration created. Expanding the transnational work begun in Guatemala we are launching two new projects. In Malta, we will work with Spark 15, the world's first youth-led refugee NGO, to document the lives of refugees, many of whom are seeking resettlement in the U.S., and to provide training and mentoring for Spark 15 to use digital media to represent themselves and their communities. In Colombia, we will partner with historians at two universities in Bogota who are working with their students to explore the legacy of the world's longest running civil conflict and to document the stories emerging from the peace and reconciliation process.

Interdisciplinary Working Groups

- **Dr. Sahar Aziz, Rutgers Center for Security, Race, and Civil Rights, Rutgers Law School**

Middle Eastern and South Asian (MESA) Interdisciplinary Working Group

Rutgers University–Newark is proposing an Interdisciplinary Working Group (IWG) of faculty and students to create a vibrant and productive academic nexus for interdisciplinary research, teaching and community engagement related to Middle Eastern and South Asian (MESA) populations, both internationally and domestically. Based on existing strength at Rutgers University–Newark, and augmented by an ongoing cluster hire in Islamic Humanities, the IWG proposes to: build and institutionalize a network of scholars, students and staff devoted to interdisciplinary research and curricula development in MESA studies; facilitate joint research, teaching, and programs among members of this network; create substantial resources for study of the region; expand existing programs and offer innovative new initiatives, including in partnerships with the Big Ten Academic Alliance; engage the public in the academic and cultural programming of the Group; and solicit funding from external sponsors to further develop interest and programming in Middle Eastern and South Asian studies.

- **Dr. Leonard C. Feldman, Dept. of Physics and Astronomy, School of Arts and Sciences, and Dept. of Materials Science and Engineering, School of Engineering Faculty and Graduate Student Interdisciplinary Working Group iNANO/Aarhus University-Rutgers Collaboration in Nano-Scale Materials Science**

In the face of the growing demand of energy worldwide and the unabated negative environmental impacts of fossil fuels, alternative and greener energy sources are critically important. This scientific/technical problem requires an array of science and engineering capabilities employing recent advances from nanoscale materials science to application scale-up. Technical advances depend on innovation, discovery, and an array of technical tools and expertise. The iNANO institute at Aarhus University, Denmark, is an ideal partner in terms of technical knowledge and facilities to complement Rutgers efforts in this area. This recognition arose through numerous interactions and the extraordinary 2-day visit to Rutgers of eight prominent Aarhus faculty/scientists to exchange ideas and experience in this area. This proposal further builds on this initial interaction to support a Rutgers faculty return visit to Aarhus to further the collaboration. Graduate student exchanges have already been identified, the longer-term goal is for bi-national funding.

- **Dr. Trinidad Rico, Dept. of Art History, School of Arts and Sciences**
Interdisciplinary Working Group on Islamic Heritage

This application brings together scholars conducting research and teaching in three different disciplines and institutions that touch significantly upon the study of material culture and heritage in the Muslim world. As archaeologists, anthropologists, and heritage specialists, we recognize that the majority of academic resources that allow and support the inclusion of the heritage and archaeology (and therefore, to a large extent, the culture) of the Muslim world are too limited and biased towards the theme of conflict. While this is a leftover of Orientalist scholarship that has historically marginalized our understanding of the broader Islamic world, it is a bias exacerbated by current political tensions that encourage granting institutions to fund research relegated to conflict and post conflict studies predominantly. The establishment of a collaborative working group aims to redress this challenge and support the inclusion of diverse scholarship in our teaching and research, as well as produce an impactful publication.

- **Dr. Mara Sidney (Dept. of Political Science) and Dr. Sean Mitchell (Dept. of Anthropology and Sociology), Global Urban Studies, Newark College of Arts and Sciences**

Comparative Gentrification in an Urbanizing World

The Global Urban Studies (GUS) program at Rutgers University–Newark proposes sponsoring an international and interdisciplinary working group of scholars—both faculty and graduate students—focused on the multiple dimensions of gentrification in a selection of important global cities (including Newark, Rio de Janeiro, Cartagena, and Cape Town). Systematically sharing and discussing our findings and experiences from individual research projects already underway will allow the team to identify dimensions and themes, theoretical approaches, diverse analytic methods, and

distinctions and similarities across cities around the world. Out of the meetings and a public research symposium, we will establish a multinational collaborative research project for which we will seek major external funding. Additionally, we will develop publication plans to bring our individual projects into a special journal issue or edited volume; the working group activities will lay the groundwork for cross-national exchanges, research, collaboration, and publication with university partners in Brazil and elsewhere.

- **Dr. Jennifer Tomesko, Dept. of Nutritional Sciences, School of Health Professions**
A Two-phase International Approach to Teaching Nutrition Focused Physical Examination

An inter-professional team of faculty from Rutgers Schools of Health Professions and Dental Medicine, and Malaysia's International Medical University Schools of Health Sciences and Dentistry are proposing a hybrid program to train dietetic educators and clinicians in Malaysia on nutrition focused physical exam (NFPE), a new essential component of nutrition care. Over 12-months, we will assess NFPE practices of dietitian clinician participants and curricula integration approaches of dietetic educator participants in Malaysia. Changes in knowledge and skill acquisition over time will be analyzed. Participants will receive education and training via a 2-day in-person NFPE training program in Malaysia combined with a virtual NFPE training module housed in a distance learning platform and quarterly inter-professional virtual case presentations. The proposed project will train those who teach future generations of dietitians and those in clinical practice who provide patient care. It will advance education and training of dietitians in Malaysia on NFPE.