UF International Center
UNIVERSITY of FLORIDA

# Research Abroad For Doctoral Students 2016 – 2020

University Of Florida International Center
Office For Global Research Engagement

# University of Florida International Center

The OFFICE FOR GLOBAL RESERCH ENGAGEMENT (OGRE) facilitates internaitonal research to increase UF's global presence. OGRE supports faculty to advvance international research.

In pursuit of international research excellence, our role is to:

- **INTRODUCE** faculty new to international research to active university networks and experienced mentors.
- **CONNECT** faculty, students, and staff with those who share research interests and are interested in working in similar countries or regions.
- **FOSTER** research networks for internaitonally focused communities of practice.
- **EXPAND** UF's knowledge and capacity in working in international venues.
- **ASSIST** faculty, students, and staff in identifying sponsored research opportunities and programs.
- **FACILITATE** the process of navigating the UF administrative process for conducting international research.
- **SUPPORT** Fulbright visiting scholars at UF, and UF scholars travelling abroad.

For more information: OGRE@ufic.ufl.edu and www.internationalcenter.ufl.edu

SUPPORTING FACULTY TO BUILD KNOWLEDGE GLOBALLY.

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# Research Abroad for Doctoral Students

RADs Program

## At the International Center, we believe that students conducting international research need resources that enable on the ground and real time fieldwork.

In our continued efforts to contribute to the research community at the University of Florida, we are committed in our support of international graduate education. Through the RAD program, we provide a unique opportunity for research conducted in international settings. New discoveries cannot stem from literature reviews, class lectures, and second hand experiences. Often, students need the exposure, experience and data that only may be obtained by international fieldwork and, one size does not fit all.

RAD provides travel and funding for accommodations for doctoral students to travel abroad to collect data or to access resources not available on campus. The extent of time can range from one week to several months. This opportunity can provide access to human subjects, physical specimens, or laboratory facilities for their research; it enables a better understanding for the cultural assumptions that form the foundation of their unique research focus. While abroad, they expand their network of potential collaborators that will continue post-graduation. In the field, students use their real world experience to advance their critical thinking skills as they navigate the full spectrum of experiences. No question, graduate students will benefit from the abroad experience and our investment can only yield positive outcomes.

## Why is International Fieldwork Important?

Active research universities recognize the benefit of a field experience in shaping future scientists and scholars. In many subject areas, students need access to data, populations, physical samples or other scholarly observations that are not possible inside the US. By supporting the international field experience, we realize even greater benefit to the development of student research. The benefit of conducting research abroad are far-reaching and include:

- Acceptance of different cultural paradigms to their research.
- New understanding of how cultural assumptions form the foundation of research.
- Opportunities to collect data only available at an international location.
- Opportunity to practice important technical field skills.
- Build cross-cultural skills to excel in a global research environment.
- Advanced understanding of how research translates across boundaries.
- Access to human subjects to test research models.
- Expand their network of potential collaborators.
- With new international collaborators, researchers gain access to a wider set of funding opportunities.
- Active international field experience can contribute to their competitiveness for university faculty positions.

## RADS Contributes to the UF Global Mission

International education is one of the fundamental elements from the University of Florida roadmap to excellence. Goals toward greater campus internationalization has been an important priority for UF with investment in building global competence in our students, faculty, staff and community. The Research Abroad for Doctoral Students program is one avenue for achieving the greater internationalization goals by:

- Increasing the number of doctoral students who participate in global research;
- Preparing doctoral students to compete and become leaders in an increasingly global research environment;
- Promoting faculty engagement in international research activities through engagement by their graduate students.
- Building new and strengthening existing relationships between research groups at the University of Florida and foreign institutions; and,
- Engendering a passion for international scholarship as they contribute to their discipline into the future.

# RADs Program

## Eligibility

RAD funding should be used for PhD students who have advanced to candidacy. Currently, only students affiliated with the STEM sciences are eligible to apply. The International Center limits proposals to students affiliated with the life and physical sciences, mathematics, social, behavioral and economic sciences, engineering and computer science.

## Use of Funds

Program funds can be used to cover only travel related expenses only. This program does not cover tuition or graduate student stipends. The funding can support dissertation research; and therefore, the application must include well-defined research questions that have undergone thorough committee review.

## Length of International Visit

The duration of the research should be for a minimum of one month and typically no more than three months at the foreign site. The program will consider a longer duration if there is strong justification and the student has supplemental funding to support the additional costs.

## Reporting Requirements

Students completing the program must complete a comprehensive trip report that details their activity, research goals, the collaborative experience and how the research contributes to the development of scholarly output.

# Funding RADs

Currently funding comes from the International Center, College of Liberal Arts and Sciences, the Graduate School and the Office of the Provost. These limited funds are not adequate to fund the many worthwhile proposals submitted for the program. At the current level of support for the program, only 20% of all applicants received funding. Our goal is increase the number of applications and fund students in all 16 UF Schools and Colleges.

The International Center has experience in mentoring students in developing their international research experience, supporting the cross cultural activity associated with international research, managing the overall budget and multiple trip expenditures, and administering the application, review and selection process. All funding allocated to RAD is used to cover student travel and no funds are used to support the administrative costs associated with program development.

The demand for this program continues to grow and students beyond the sciences see benefit of international fieldwork, data collection and scholarly collaboration. Schools and Colleges who contribute to this program can specify how to direct funding according to research theme or geographic location. **Please join UFIC in supporting Research Abroad for Doctoral Students.**

**For more information** about supporting research abroad for doctoral students, contact, Dr. Sandra Russo, Director, Office for Global Research Engagement, UF International Center – srusso@ufic.ufl.edu

# Award Recipients

## 2019—2020

- **Scott Cinel**, Department of Biology, College of Liberal Arts and Sciences
- **Liselotte de Wit** Department of Clinical and Health Psychology, College of Public Health and Health Professions
- **Jamie Fuller**, Department of Anthropology, College of Liberal Arts and Sciences
- **Qingming Huang**, Department of Political Science, College of Liberal Arts and Sciences
- **Hui Jean Kok**, Department of Applied Physiology and Kinesiology, College of Health and Human Performance
- **Kimberly Ledger**, Department of Wildlife Ecology and Conservation, Institute of Food and Agricultural Sciences
- **Katie McNamara**, Department of Environmental and Global Health, College of Public Health and Health Professions
- **Oswaldo Medina-Ramirez**, Department of Anthropology, College of Liberal Arts and Sciences
- **Licino Nunes de Miranda**, Department of History, College of Liberal Arts and Sciences
- **Mirela Silva**, Department of Electrical and Computer Engineering, Herbert Wertheim College of Engineering
- **Benjamin Smith**, Department of Anthropology, College of Liberal Arts and Sciences
- **Jeeye Song**, Department of Political Science, College of Liberal Arts and Sciences
- **Sarah Staub**, Department of Anthropology, College of Liberal Arts and Sciences
- **Treenate Jiranantasak**, Department of Infectious Disease and Immunology, College of Veterinary Medicine

## 2018—2019

- **Nevin Brosius**, Department of Chemical Engineering, College of Engineering
- **Trey Crouch**, Department of Engineering School of Sustainable Infrastructure and Environment, College of Engineering
- **Megan Cogburn**, Department of Anthropology, College of Liberal Arts and Sciences
- **Ana Luisa Violato Espada**, School of Forest Resources and Conservation, College of Agriculture and Life Sciences
- **Diego Garcia Olaechea**, Wildlife Ecology and Conservation, College of Agricultural and Life Sciences
- **Cady Gonzalez**, Department of Anthropology, College of Liberal Arts and Sciences
- **Rebecca Henderson**, Department of Anthropology, College of Liberal Arts and Sciences
- **Emily Khazan**, School of Natural Resources and the Environment, College of Agricultural and Life Sciences

- **Christine Lejeune**, Department of Anthropology, College of Liberal Arts and Sciences
- **Qi Li**, Department of Astronomy, College of Liberal Arts and Sciences
- **Alicia McGrew**, School of Natural Resources and the Environment, College of Agricultural and Life Sciences
- **Emily Moore**, Center for African Studies, College of Public Health and Health Professions
- **Mohammed Mustapha**, Department of Anthropology, College of Agricultural and Life Sciences
- **Lauriane Yehouenou,** Department of Food and Resources Economics, College of Agricultural and Life Sciences

## 2017—2018

- **Nichole Bishop,** Interdisciplinary Ecology, College of Agricultural and Life Science
- **Kelly Chapman,** Department of Anthropology, College of Liberal Arts and Sciences
- **Michael Esbach,** Interdisciplinary Ecology, College of Agricultural and Life Science
- **Claire Friedrichsen,** Department of Soil and Water Sciences, College of Agricultural and Life Science
- **Lindsey Laytner,** Environmental Science and Global Health, College of Public Health and Health Professions
- **Patrick Milligan,** Department of Biology, College of Liberal Arts and Sciences
- **Riley Ravary,** Department of Anthropology, College of Liberal Arts and Sciences
- Martha Battaglin Ramos, Department of Landscape Architecture, College of Design, Construction and Planning
- **Shujian Yu,** Department of Electrical and Computer Engineering, Herbert Wertheim College of Engineering

## 2016 – 2017

- **Claudia Baudoin Farah**, Department of Tropical Conservation & Development, School of Natural Resources and Environment
- **Zachary Emberts,** Department of Biology, College of Liberal Arts and Sciences
- **Cody Howard,** Department of Biology, College of Liberal Arts and Sciences
- **Jennifer Moore,** Department of Wildlife Ecology and Conservation, College of Agriculture and Life Sciences
- **Fezile Mtsetfwa**, Department of Wildlife Ecology and Conservation, School of Natural Resources and Environment
- **Tania Pineda Enriquez,** Department of Biology, College of Liberal Arts and Sciences
- **Brian Wingender,** Materials Science & Engineering, Herbert Wertheim College of Engineering

## 2015 – 2016

- **Daniel Brooker,** Department of Physics, College of Liberal Arts and Sciences
- **John Hangrove**, Department of Wildlife Ecology and Conservation, College of Agricultural and Life Sciences
- **Robert Johnson,** Department of Biology, College of Liberal Arts and Sciences
- **Rebecca Koll,** Department of Biology, College of Liberal Arts and Sciences
- **Ummat Somjee,** Department of Entomology and Nematology, College of Agricultural and Life Sciences
- **Karen Vyverberg,** Department of Geological Sciences, College of Liberal Arts and Sciences

# 2019 – 2020 Program

## Scott Cinel

Graduate Fellow, Department of Biology
College of Liberal Arts and Sciences

*Developmental Effects of Predation Exposure on Corn Earworm Larvae*

This research proposes to study how predation risk effects the stress neurophysiology and neural development of an agricultural pest moth, the corn earworm. As adults, these moths hear – and avoid – the ultrasonic echolocation calls of their primary predator, insectivorous bats. Past research and preliminary data suggest that exposure to bat calls, particularly over prolonged periods of time, reduces reproductive and development rates of adults and their larval offspring, respectively. In collaboration with staff analytical neurochemists, evolutionary biologists, and bat ecologists, this research leverages field and lab resources to describe changes in active protein distributions in the moth's brain before, during, and after prolonged exposure to ambient bat calls. Specifically, this research utilizes a specialized imaging mass spectrometer to measure the distribution, activity, and interaction network of targeted stress-related proteins, peptides, and neurohormones in the dissected brains of adult moths that have been exposed to recorded bat calls for various time periods.

**Host Institution:** Institute for Scientific Research and High Technology Services, Panama
**Faculty Advisor:** Dr. Akito Kawahara, Associate Professor and Curator, Florida Museum of Natural History
**Award:** $5,000 USD

## Liselotte de Wit

Research Assistant, Department of Clinical and Health Psychology
College of Public Health and Health Professions

*Retained Procedural Memory in the Early Stages of Alzheimer's disease: A Transnational Study*

Most behavioral interventions that aim to compensate for impaired memory do so by leveraging intact cognitive functions. There are several types of memory that are thought to remain intact in Alzheimer's dementia and its pre-stages: procedural memory, which includes habit memory, is hypothesized to be one of these types. However, the literature regarding procedural memory sparing in Alzheimer's dementia and its pre-stages remains inconclusive and more research with better and more consistent methods is needed. This project aims to assess whether or not procedural memory remains spared in the early stages of Alzheimer's disease across transnational cohorts. This research will lay the groundwork for international research on behavioral interventions for individuals with Alzheimer's disease.

**Host Institution:** Radboud University, the Netherlands **Faculty Advisor:** Dr. Glenn Smith, Chair and Elizabeth Faulk Professor, Department of Clinical and Health Psychology, College of Public Health and Health Professions **Award:** $2,250 USD

## Jamie Fuller

Graduate Fellow, Department of Anthropology
College of Liberal Arts and Sciences

*Do Remittances Transform Gender Norms in Senegal? Social Media Reveals*

This project ethnographically investigates the meanings and motives attached to remittance sending among the 'left behind' families of Senegalese migrant women. Migrant remittances compose around 10% of GDP, a fact pointing to the importance of migrant network building practices on development in the nation. As more women join the ranks of male labor migrants abroad, they likewise unsettle our assumptions about gendered obligations. Because migrants and their families increasingly rely on social media applications to both communicate and to organize financial support, this research argue that social media reveals how remittances and affect become enmeshed in transnational network building and maintenance practices. Thus, this project investigates the social underpinnings of remittances, and their potential to transform gendered roles and norms in Senegal.

**Host Institution:** University of Gaston-Berger, Senegal **Faculty Advisor:** Dr. Abdoulaye Kane, Associate Professor, Department of Anthropology, College of Liberal Arts and Sciences **Award:** $2,250 USD

## Qingming Huang

Teaching Assistant, Department of Political Science
College of Liberal Arts and Sciences

*How Communism Survived: A Comparison of North Korea and South Korea*

Decades after the collapse of communism in former Soviet Union and Eastern Europe, its resilience in East Asia still puzzles scholars. Why do communist regimes survive in China, Vietnam, and North Korea, while non-communist autocracies in South Korea and Taiwan failed? Furthermore, why do communist regimes persist in East Asia but not in Eastern Europe? This project seeks to answer these questions by narrowing in on the cases of South Korea and North Korea with a comparative historical lens. This research will examine these regimes' early nation-building efforts and their adaptation to domestic and international environments in the post-war era. This project examines three key dimensions of these regimes: the founding myth of the party-state, the dynamics between economic elites and political elites while negotiating the space between state and society during modernization, and the interpretations of domestic and international environments and choices made by the ruling elites when they are confronted with regime crises.

**Host Institution:** Korea University and National Assembly Library of Korea, South Korea
**Faculty Advisor:** Dr. Benjamin Smith, Associate Professor, Department of Political Science, College of Liberal Arts and Sciences **Award:** $2,500 USD

## Hui Jean Kok

Teaching Assistant, Department of Applied Physiology and Kinesiology
College of Health and Human Performance

*IGF-I as a Potent Anabolic Factor during Disuse Atrophy in Muscles and Bones*

Aging results in skeletal muscle (sarcopenia) and loss of bone (osteopenia) in a continuous and coexisting fashion, ultimately disrupting quality of life in the geriatric population. Insulin-like Growth Factor-I (IGF-I) is a major factor that modulates muscle and bone growth, hence this research seeks to investigate if increased IGF-I in muscle contributes to both muscle and bone remodeling during disuse and reloaded conditions. Unilateral intramuscular injection of self-complementary adeno-associated virus harboring the murine Igf1 gene was performed in adult female wild type mice 3 days prior to hindlimb unloading for 7 days and then reloaded for 3, 7, and 14 days. There was a 17% increase in soleus mass and 30% increase in soleus specific force coupled with 14% increase in trabecular bone density of IGF-I treated hindlimbs that were reloaded for 14 days. This study extends evidence that IGF-I is a potent anabolic factor for both muscle and bone during disuse atrophy and is important once physical activity is resumed, however whether there is a muscle-bone crosstalk mediated by IGF-I is yet to be established.

**Host Institution:** McGill University – Shriners Hospital for Children, Canada **Faculty Advisor:** Dr. Elisabeth Barton, Associate Professor, Department of Applied Physiology and Kinesiology, College of Health and Human Performance **Award:** $5,000 USD

## Kimberly Ledger

National Science Foundation Fellow, Department of Wildlife Ecology and Conservation
Institute of Food and Agricultural Sciences

*Loss of Habitat and Tick-Borne Diseases: An Integrated Approach of Landscape and Community Ecology*

Nearly everywhere on Earth, humans are changing the landscape and biodiversity is in decline. Habitat modification and loss of biodiversity play a key role in infectious disease risk and alter the ability of ecosystems to regulate prevalence of important human, livestock, and wildlife diseases. Ticks are the most important vector of livestock disease and rank second only to mosquitoes as vectors of human infectious disease globally. This research integrates approaches from landscape and community ecology to understand how land use and defaunation contribute to tick abundance and diversity, and how that translates to prevalence of significant human and livestock tick-borne diseases. By identifying how changes to ecosystems affect ticks and tick-borne diseases, research can better use integrated vector management to minimize future detrimental impacts.

**Host Institution:** University of Pretoria, South Africa **Faculty Advisor:** Dr. Samantha Wisely, Professor and Cervidae Health Research Initiative Director, Department of Wildlife Ecology and Conservation, Institute of Food and Agricultural Sciences **Award:** $4,696 USD

## Katie McNamara

McKnight Fellow, Department of Environmental and Global Health
College of Public Health and Health Professions

*How a Changing Climate Affects the Evolving Gender System in Ecuador*

Health outcomes are brought into being as local and global actions and discourses become entangled in historic processes that shape lives—human, plant, and animal—and the environments that support them. This research examines such interactions by exploring evolving gender systems in relation to environmental change in Ecuador. Participant observation, interviews, and scientific art practice guide an exploration into local health discourses that articulate tensions across Ecuador's plural visions of health. This work serves to advance current debates that connect humans to the fate of natural environments amidst such urgent planetary crises as Climate Change, war, and growing social inequalities.

**Host Institution:** Iyarina Biocultural Station, Ecuador **Faculty Advisor:** Dr. Sarah McKune, Assistant Professor, Department of Environmental and Global Health, College of Public Health and Health Professors **Award:** $4,945 USD

## Oswaldo Medina-Ramirez

Water Institute Fellow, Department of Anthropology
College of Liberal Arts and Sciences

*Water Management in Costa Rica: Actors, Discourse, and Bureaucracy*

This research explores water governance practices in the context of sensitive tropical landscapes. From an anthropological approach and building on theories of the state and network theory, this project will analyze the institutions, discourses, and practices that shape water governance in the TBW. This research will be carried out through three objectives: 1) analysis of actors and structures through which water management is organized, coordinated, and practiced; 2) documentation and description of how and to what ends water discourses have shaped water politics and policy making; and 3) exploration of how water management discourses are reinforced and disseminated through bureaucratic practices in water management institutions.

**Field Site:** Guanacaste Province, Costa Rica **Faculty Advisor:** Dr. Jeffrey Johnson, Associate Professor, Department of Anthropology, College of Liberal Arts and Sciences **Award:** $2,000 USD

## Licino Nunes de Miranda

Teaching Assistant, Department of History
College of Liberal Arts and Sciences

*Land of Light: Ceará, Slavery and the Abolitionist Movement in Brazil*

This research intends to explore the abolitionism in Ceará, the first province to end slavery in Brazil in 1884, in political, social, and economic terms. The Public Archive of the State of Ceará, located in Fortaleza, the state capital of Ceará, has a remarkable collection of documents dating from 1700 until around 1900. In it, there is correspondence between government officials, petitions, decrees, government appointment records and other documents, all of which are primary sources of great importance to the abolitionist movement in Ceará. Understanding this movement is critical to understanding history following the end of slavery, particularly in Brazil.

**Host Institution:** Public Archive of the State of Ceará, Brazil **Faculty Advisor:** Dr. Jeffrey D. Needell, Professor, Department of History, College of Liberal Arts and Sciences **Award:** $2,500 USD

## Mirela Silva

National Science Foundation Fellow, Department of Electrical and Computer Engineering
Herbert Wertheim College of Engineering

*Making Cybersecurity Personal: Intimate Partner Surveillance and Domestic Abuse in Brazil*

Cybersecurity research into crimes surrounding domestic abuse is still in its infancy, but the role of technology has nonetheless evolved to allow abusers to cyberstalk and use intimate partner surveillance (IPS) as a form of further abuse. However, IPS research is limited to mostly the Global North, giving little consideration to the effects of race, ethnicity, or culture. Cybersecurity solutions must be aimed at individuals or subgroups, and not to the population as a whole. Therefore, facilitated by the Federal University of Paraná in Curitiba, Brazil, this research conduct semi-structured interviews with multiple survivors of domestic abuse across multiple cities in Brazil. This will allow the cybersecurity research community to develop an understanding of how abusers use technology, and how ethnicity and race shape abusers' and victims' online actions.

**Host Institution:** Federal University of Parana, Brazil **Faculty Advisor:** Dr. Daniela Oliveira, Associate Professor, Department of Electrical and Computer Engineering, Herbert Wertheim College of Engineering **Award:** $4,305 USD

## Benjamin Smith

Research Assistant, Department of Anthropology
College of Liberal Arts and Sciences

*Hunter-gatherer Stone Economies and Technological Landscapes in the Late Pleistocene Horn of Africa*

This research explores the archaeology of hunter-gatherer stone economies in the Horn of Africa during the earlier part of the Late Pleistocene, ~130,000-50,000 years ago. It is during this period, and from this region, that our species left Africa to populate the old world. Through characterization of an obsidian quarry and a study of technological organization at an important archaeological site, this project asks how variation in the management of raw material reflects the social and ecological dynamics that ultimately set the stage for global human colonization. Additionally, through a new interdisciplinary archaeological and paleoenvironmental research partnership with Jinka University, this project explores the broader evidence for hunter-gatherer subsistence economies across the southwestern Ethiopian highlands, a hotspot of ecological and cultural diversity both in the deep past and today.

**Host Institution:** Jinka University, Ethiopia **Faculty Advisor:** Dr. Steven A. Brandt, Associate Professor, Department of Anthropology, College of Liberal Arts and Sciences **Award:** $4,777 USD

## Jeeye Song

Teaching Assistant, Department of Political Science
College of Liberal Arts and Sciences

*Treaties with East Asia: Recognizing Sovereignty in the mid-19th Century to World War One*

This project traces how countries joined the treaty system through East Asian cases where the concept of sovereignty did not exist until the mid-19th century. Although recent studies have contributed to a better understanding of the traditional tributary system in East Asia, few scholars have discussed how East Asian countries came to accept the concept of sovereign equality and transformed to the current system of sovereignty. Thus, this project attempts to explain the transition of the East Asian system in the 19th century with a focus on the relationship between treaty-making and recognition of sovereignty. This project further analyzes the characteristics of the treaty-making process during the period from 1842 to 1914: from when the first treaty was signed between an East Asian country and a Western country to when the First World War started. In particular, the focus of this study lies in small countries or nations such as Korea, Okinawa, and Vietnam that encountered external and internal challenges while struggling between regional powers such as China and Japan and Western powers.

**Host Institution:** National Institution of Korean History, Center for Diplomatic History Studies, South Korea **Faculty Advisor:** Dr. Aida Hozic, Associate Professor, Department of Political Science, College of Liberal Arts and Sciences **Award:** $2,500 USD

## Sarah Staub

Teaching Assistant, Department of Anthropology
College of Liberal Arts and Sciences

*Reimagining the fight against malaria: Artemisia herbal medicine trainings in Benin*

This research investigates the growing movement of the promotion of Artemisia for malaria treatment and prevention as a lens to explore the global trends of medical pluralism, medicalization of herbal medicines, and the re-emergence of multiple healing systems that have begun to erode the hegemony of biomedicine. My research focuses on the largest organization promoting Artemisia in the world, La Maison de l'Artemisia (LMA), and their work and trainings in Benin. Utilizing ethnographic methods, semi-structured interviews and participant observation I will study the local biocommunications surrounding Artemisia, the transformation of training participants into a new form of "responsibilized citizens", participants' knowledge, beliefs and perceptions surrounding malaria and Artemisia, and adoption and diffusion of innovations among LMA training participants over a 10 month period.

**Host Institution:** University of Abomey-Calavi, Benin **Faculty Advisor:** Dr. Adrienne Strong, Assistant Professor, Department of Anthropology, College of Liberal Arts and Sciences **Award:** $4950 USD

## Treenate Jiranantasak

Research Assistant, Department of Infectious Disease and Immunology
College of Veterinary Medicine

*Using B. pseudomallei Antibodies to Detect the Burden of Disease of Melioidosis in Pigs in Thailand*

Melioidosis is considered an emerging disease caused by Burkholderia pseudomalle, a facultative intracellular Gram-negative bacterium, that can cause disease in humans and a wide range of animal species with a varying clinical manifestations. B. pseudomallei infections can cause a variety of clinical manifestation ranging from acute sepsis to subclinical chronic infection. Animal to man transmission has rarely been documented but can result in fatalities, and the culling of infected animals is recommended. There is limited data on its prevalence and disease burden in pigs in Thailand. The purpose of this study is to estimate the seroprevalence of melioidosis in pigs by using standard indirect hemagglutination assay (IHA) and novel enzyme-link immunosorbent assay (ELISA) to detect antibodies toward B. pseudomallei and identify risk factors associated with seropositivity to B. pseudomallei infection in intensive pig farming in Thailand.

**Host Institution:** Chulalongkorn University, Thailand **Faculty Advisor:** Dr. Apichai Tuanyok, Assistant Professor, Department of Infectious Disease and Immunology, College of Veterinary Medicine **Award:** $2,000 USD

# 2018 – 2019 Program

## Nevin Brosius

Graduate Fellow, Department of Chemical Engineering
Herbert Wertheim College of Engineering


*The Prediction and Measurement of Fluid Patterns When Fluid Layers Are Subject to Time-Periodic Forces*

The research focuses on a resonant phenomenon involving fluid interfaces known as the Faraday instability, which has a wealth of applications in space-based technologies and the measurement of key thermophysical properties. He is a recipient of the NASA Space Technology Research Fellowship (NSTRF), a technology-driven program facilitating space-focused research of Faraday instability as a means to improve heat transfer operations in space. He is additionally funded by the Florida Space Grant Consortium Dissertation Improvement Fellowship for this work, Chateaubriand Fellowship to fund research in France.

Working with the Japan Aerospace Exploration Agency (JAXA) in Tokyo will allow access to unique microgravity experimental facilities, facilities that will be invaluable in long term collaborative work. This specific research topic is of great interest for in-space additive manufacturing and both NASA and JAXA are interested as this impacts long-term space habitation.

**Host Institution:** Japan Aerospace Exploration Agency, Tokyo, Japan **Faculty Advisor:** Dr. Ranga Narayanan, Distinguished Professor, Department of Chemical Engineering, Herbert Wertheim College of Engineering **Award:** $1,500 USD

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"In Sapporo, I traveled to Hokkaido National University where we met with Dr. Osamu Fujita and had several interesting conversations regarding his space-related research. I gave a talk regarding my research to his students and they also presented some of their own work. I visited their lab, where they were working on projects involving combustion and flow mechanics in space operations."

## Megan Cogburn

Teaching Assistant, Department of Anthropology
College of Liberal Arts and Sciences

*Pushing Institutional Deliveries: An Ethnography of Childbirth Care in Rural Tanzania*

This research will present a case study of the practice of homebirths in contrast to mandated facility births in rural Tanzania. This field research project takes a closer look at what happens to care in the wake of the global push for facility births. The project asks, what practices and understandings count as care, when, why and to whom? How does care materialize in the policies, indicators, and interventions surrounding the push for facility births? How do women, TBAs, and health care workers in rural communities experience and negotiate care today?

**Host Institution:** University of Dodoma, Tanzania. **Faculty Advisor:** Dr. Marit Ostebo, Assistant Professor, Department of Anthropology, College of Liberal Arts and Sciences **Award:** $5,950 USD

## Trey D. Crouch

Water Institute Graduate Fellow, Department of Environmental Engineering Sciences, Herbert Wertheim College of Engineering

*Quantifying the Cumulative Effects of Climate Change, Land Use, and Dam Development on Sediment Flux and Riparian Ecohydromorphology of a Major Amazonian Tributary, the Madeira River*

Research will sample sediment and river channel morphology upstream and downstream of the Madeira River Hydroelectric Complex in Rodônia, Brazil. The Madeira River basin has recently been identified as one of the most vulnerable to the impacts of current and future dams, and additional work is needed to validate and improve existing sedimentological models applied to predict dam impacts across the Amazon. In particular, low estimates of sediment trapping behind "run-of-river" dams has buoyed support for their construction, but empirical data is beginning to show that these systems can trap at least 20% of suspended sediments, starving downstream deltas and floodplains.

**Host Institution:** Federal University of Rondonia, Porto Velho, Rondonia, Brazil
**Faculty Advisor:** Dr. David Kaplan, Associate Professor, Environmental Engineering Sciences Department, Herbert Wertheim College of Engineering **Award:** $2,700 USD

## Ana Luisa Violato Espada

Doctoral student, School of Forest Resources and Conservation
College of Agriculture and Life Sciences

*Logging Protected Areas: What approaches conserve forests and promote local development?*

Violato Espada applied participatory action research in the community's meetings. In this image, we have two women facilitating a timber management evaluation in Extractive Reserve Verde para Sempre.

Community-based timber management is an emerging strategy to both conserve tropical forests and improve local livelihoods. However, of all forest products, timber has received special attention from environmentalists and governments, because it is often the most financially attractive, the most complex to manage sustainably, and has the most severe impacts on ecosystem services (e.g. carbon stocks and water). In the Brazilian Amazon, well-managed timber harvests are now allowed in sustainable use protected areas - co-managed systems whereby government and communities share management responsibilities. The goal of this proposed research project is to contribute to the understanding of decision-making processes in community-based timber management and to provide new information and recommendations for best approaches to conserve tropical forests and improve local livelihoods. Understanding how the variations in community-based timber management schemes have emerged in terms of knowledge base, decision-making, and community empowerment, is crucial to inform the growing number of such joint conservation and well-being initiatives.

**Host Institution:** Tropical Forest Institute – IFT, Belem, Brazil. **Faculty Advisor:** Dr. Karen Kainer, Professor, Tropical Conservation and Development Program, Center for Latin American Studies **Award:** $2,000 USD

## Diego Garcia Olaechea

Graduate Fellow, Wildlife Ecology and Conservation
Institute for Food and Agricultural Science

*Distribution Patterns and Community Structure of Dry Forest Birds of Northwestern Peru: Responses under Climate Change*

The research is focused on exploring strategies for landscape level conservation of dry forest birds facing threats from climate change. The study location, in the highly threatened dry forests of northwest Peru, is well known as a priority area for conservation due to high levels of endemism and rapid loss of habitat. In the endemic Tumbesian region of northwest Peru and southwest Ecuador, rather than conditions getting drier, forests are getting wetter and patterns of rainfall seasonally are changing. These changes, which have been occurring for some time, is apparently causing wet forest birds to expand their range, and dry forest bird distributions are contracting, especially for some of the threatened and endemic species. The integration of data from field censuses and observation of birds with structural and compositional data remotely captured via special drone technology, and measures of abiotic conditions collected with remote data loggers enables defining environmental requirements of birds, the foundation for predicting how birds will be impacted by climate change.

**Host Institution: CORBIDI,** Centro De Ornitologia y Biodiversidad, Lima, Peru
**Faculty Advisor:** Dr. Bette Loiselle, Director, Tropical Conservation and Development Program Center for Latin American Studies & Professor, Department of Wildlife Ecology and Conservation **Award:** $1,000 USD

## Cady Gonzalez

Teaching Assistant, Department of Anthropology
College of Liberal Arts and Sciences

*Hospitality in International Development: The Case of Coffee and Sanitation in Urban Ethiopia*

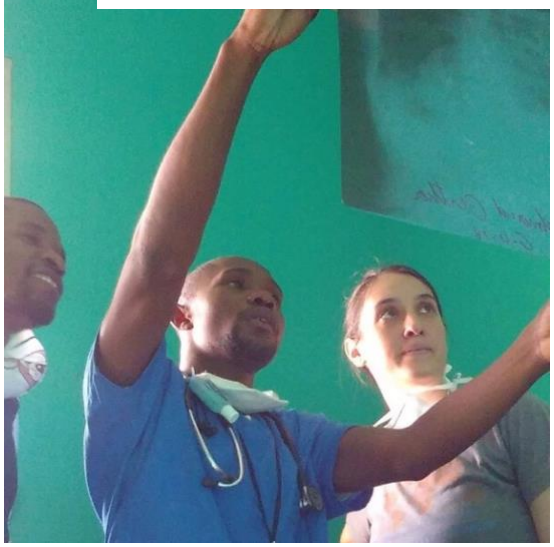
Over the last seven years, the Ethiopian coffee ceremony— traditionally performed by women in the home—has moved into the public sphere, foregrounding coffee as Ethiopia's symbol of hospitality. In 2016 the municipal government of Addis Ababa, rolled out a latrine development intervention popularly known as the Mobile Public Toilet (MPT) Project. By positioning the Ethiopian coffee ceremony next to pay-per-use public toilets as an instrument to achieve a breadth of developmental goals, the MPT Project operationalizes this crucible of Ethiopian hospitality in a novel way. In short, the Ethiopian coffee ceremony is critical to the intervention's designed space and form as well as its aim at social reincorporation.

Research at the intersection of an anthropology of development and an anthropology of design, the study will examine how practices of hospitality—understood anthropologically as a technique for the negotiation of relationships between strangers—act as a scheme for social engineering within the context of a developmental state.S pecifically, the project explores how the 'the social' is 'retotalized' and rewoven through two inevitabilities of Ethiopian life—coffee and sanitation—in urban public space.

**Host Institution:** Ethiopian Institute of Architecture, Building Construction and City Development, Addis Adaba, Ethiopia. **Faculty Advisor:** Dr. Marit Ostebo, Assistant Professor, Department of Anthropology, College of Liberal Arts and Sciences **Award:** $4,870 USD

## Rebecca Henderson

"At the hospital, I also held an English class for the nursing staff. In return, I was welcomed into the hospital and taught about life in a Haitian oncology center… I found it intensely rewarding to get to know patients and healthcare workers in Haiti, and I am beginning to understand some of the deep barriers to care that exist in this context."



Graduate Fellow, Department of Anthropology
College of Liberal Arts and Sciences

*Overview of the Effect of Cultural Forces in the Prevention and Treatment of Breast and Cervical Cancer Patients in Haiti*

The goal of the proposed study is to provide an overview of the cultural forces at play in breast and cervical cancer prevention and treatment programs currently ongoing in Haiti. This will be accomplished through the use of ethnographic fieldwork, participant observation, and semistructured interviews with patients and physicians. The proposed project will investigate the challenges, successes, and failures of these programs in order to draw broader conclusions about the provision of care for cancer and other non-communicable diseases in very low resource settings. Ultimately, it is hoped that such an analysis will prove useful in providing guidance for the improvement of care for these conditions in the developing world.

**Host Institution:** Innovating Health International, Port au Prince, Cap Haitien, Haiti. **Faculty Advisor:** Dr. Adrienne Strong, Assistant Professor, Department of Anthropology, College of Liberal Arts and Sciences
**Award:** $6,500 USD

## Emily Khazan

Research Assistant, School of Natural Resources and the Environment
College of Agricultural and Life Sciences

*Using Butterflies, Microbes, and Pollination Networks to Prioritize Forest Conservation in Post-Conflict Colombia*

Butterflies are ideal for studies examining habitat integrity and general biodiversity patterns at multiple scales. This project aims to investigate land use effects on biodiversity at vastly different biological scales. To do so, I proposed to study butterfly community composition, the pollination services they provided, and the butterfly gut microbiomes across different landscapes and altitudinal gradients in the Colombian Andes. This study will be able to inform conservation policies during a pivotal moment for this country biodiversity**.**

**Host Institution:** Universidad del Rosario, Bogotá, Colombia
**Faculty Advisor:** Dr. Brett Scheffers, Assistant Professor,
Wildlife Ecology and Conservation, Institute for Food and Agricultural Science **Award:** $4,000 USD

“I am much more aware of the challenges that I will encounter when pursuing further fieldwork in Russia, however I will now be better prepared to anticipate and react to these challenges… As a result of my experience, I am revising my research proposal to account for the data I have gathered and the realities I have experienced on the ground.”

## Christine Le Jeune

Graduate Assistant, Department of Anthropology,
College of Liberal Arts and Sciences

*The Sustainability of Current Tourism Developments and how Tourism Contributes to Socioeconomic Development*

Research is focused on in how the Russian state’s promotion of tourism in the North Caucasus as a mode for socioeconomic development aligns with the ability to preserve the rich biodiversity of the region’s environmentally vulnerable mountain systems. The primary goal of the proposed research project is to select three tourism locations that will function as case studies for comparing the three types of tourism development. After identifying locations that represent the different types of tourism development found in the region, the research will focus on local efforts toward sustainable development, local governance, regional history, and other ethno cultural aspects. Collaboration with scholars at the North-Caucasus Federal University (NCFU) is essential to the proposed research. As the only federal university within the North Caucasus Federal District, the NCFU maintains the administrative and logistical resources necessary to host international researchers.

**Host Institution:** North-Caucasus Federal University, Russia
**Faculty Advisor:** Dr. Catherine Tucker, Professor, Department of Anthropology, College of Liberal Arts and Sciences **Award:** $3,000 USD

## Qi Li

Research Assistant, Department of Astronomy
College of Liberal Arts and Sciences

The Coevolution of Cosmic Dust and Galaxies Using Cosmological Hydrodynamics Simulations


Edinburgh, Scotland

The project explores incorporating cosmic dust into galaxy formation simulations. Dust is one of the most important constituents of galaxies: it has an annoying aspect of blocking out much of the starlight that we depend on to derive physical properties from galaxies, while at the same time plays a critical role in setting the thermodynamics of the birthplaces of stars. These models have a clear next step that to date has not yet been incorporated in any galaxy formation simulation worldwide: the formation of dust around supermassive black holes. For this, a collaboration with Professor Davé at the Royal Observatory Edinburgh. Professor Davé is a world expert in incorporating the physics of black holes in galaxy formation simulations.

**Host Institution:** Institute for Astronomy School of Physics & Astronomy, University of Edinburgh Royal Observatory
**Faculty Advisor:** Dr. Desika Narayanan, Assistant Professor, Department of Astronomy, College of Liberal Arts and Sciences **Award:** $1,400 USD

## Alicia McGrew

Research Assistant, School of Natural Resources and Environment
Department of Wildlife Ecology and Conservation,
College of Liberal Arts and Sciences

### A Comprehensive Assessment Linking Novel Community Composition, Structure, and Ecosystem Function in Introduced S. Purpurea Pitcher Plants In Switzerland.

The simultaneous existence of native and non-native populations of Sarracenia purpurea presents a unique opportunity to gather much-needed empirical evidence about novel communities, and to explore how the loss of native species assemblages and interactions might influence important ecosystem functions. The overall goal is to provide the first comprehensive assessment describing novel community composition, structure, and function in non-native S. purpurea populations near Fribourg, Switzerland. The collaboration with the Université de Fribourg represents an important step towards developing a network of S. purpurea researchers that exchange ideas, standardize sampling protocols and techniques, and share data to ask and answer ecological questions at the global scale.

**Host Institution:** Department of Biology, Université de Fribourg, Switzerland.
**Faculty Advisor:** Dr. Benjamin Baiser, Assistant Professor, Department of Wildlife Ecology and Conservation
**Award:** $3,000 USD

## Emily Moore

Research Assistant, Department of Environmental and Global Health
College of Public Health and Health Professions and Center for African Studies

### Assessing the Impact and Sustainability of a Randomized Control Trial to Increase Nutritional Outcomes in Children under 2 Through Egg Consumption in Burkina Faso

A cross-sectional follow-up study to examine an increase the consumption of eggs among children under two (CU2) to combat malnutrition and reduce child mortality rates. Specifically the research will provide insight into how gender dynamics within households. The study will examine the relationship between 1) current egg consumption and 2) the role of women's empowerment (either mother or female caregiver of the child) on improved nutritional outcomes.

> "I don't think I'll ever get over the moment when I looked at the data to realize that what an initial team of UF researchers had set out to do had worked and feeling the gratitude of being a witness to the process from the beginning."

**Host Institution:** Institut de l'Environnement et Recherches Agricoles, Burkina Faso
**Faculty Advisor:** Dr. Sarah McKune, Assistant Professor, Department of Environmental and Global Health, College of Public Health and Health Profession **Award:** $2,000 USD

# Mohammed Mustapha

Teaching Assistant, Department of Anthropology,
College of Liberal Arts and Sciences

### The Relationship between the Practice of Large-Scale Ironworking and Processes of Socio-Political Complexities at the Nasia Region in the Mamprugu Traditional Area in Ghana's Northern Savannah

The chief and elders of Nasia at public sitting to receive visitors.

Research focuses on the relationship between the practice of ironworking and processes of social complexities, as well as environmental changes at Nasia – a town in the Mamprugu traditional area, Northern Ghana. The landscape of the region shows evidence of past ironworking practices in the form of several slag and tuyere mounds, broken furnaces, and local pottery scattered across many villages and towns at Mamprugu, the earliest Kingdom in Ghana. The goal is to establish a cultural chronology and ceramic sequence to understand the order of cultural and technological developments in the Nasia region. Investigations and analyses of archaeometallurgy remains can demonstrate the materiality of iron in the processes of social transformation at Mamprugu. The research contributes to deconstructing postcolonial historical narratives of diffusion and invasion as the source of social complexity in the savannah regions of Ghana.

**Host Institution:** School of the Arts, University of Ghana, Acra, Ghana. **Faculty Advisor:** Dr. Brenda Chalfin, Professor, Department of Anthropology, Director of Center for African Studies, College of Liberal Arts and Sciences **Award:** $7,000 USD

# Lauriane S. Yehouenou

Teaching Assistant, Food and Resources Economics Department
College of Agricultural and Life Sciences

### Farmer Management of Timber and Non-timber Forest Products: Evidence from a Dynamic Model and Common-pool Resource Experiment in Benin

In tropical Africa, the main drivers of deforestation are the natural population growth on the forest margin, the slow expansion of subsistence agriculture, and the extraction of primary products such as wood fuel, timber, non-timber products and charcoal for domestic use. In Benin, forests have multi-harvest purposes and various species are harvested for both timber and non-timber forest products. Examining the implementation of sustainable forest management in how policy would protect forests without preventing the development and livelihood opportunities gained through the production of timber and non-timber products is key to development of sustainable community development. The goal of this work is to model optimal management strategies and investigate whether community-based management strategies can induce optimal harvest management of *Afzelia Africana* in Benin.

**Host Institution:** Laboratory of Applied Ecology, University of Abomey-Calavi, Cotonou, Benin **Faculty Advisor:** Dr. Kelly Grogan, Associate Professor, Food and Resource Economics Department, College of Agricultural and Life Sciences **Award:** $5,000 USD

# 2017 – 2018 Program

## Nichole Bishop

Research Assistant, Interdisciplinary Ecology
College of Agricultural and Life Science

The hicatee turtle is a critically endangered fresh-water turtle species endemic to Central America.

A hatchling hicatee; note the egg tooth just below the nose (Photo by Nichole Bishop)

### A Nutritional Ecology Study of Dermatemys mawii, a Critically Endangered Species of Freshwater Turtle Endemic to Central America

Project focus is on the captive breeding of the critically endangered fresh-water turtle species *Dermatemys mawii.* The goal is to study the digestibility of various age classes of D. mawii. Digestibility is the efficiency in which a consumer digests its food and affects the amount of food a consumer needs to meet its own energy and nutrient requirements. The purpose of this research will: 1) to provide the necessary infrastructure for a growing population of captive bred D. mawii in Belize, and 2) to determine husbandry protocols for rearing healthy individuals. The first objective was met this past summer when I designed and installed a hatchling nursery at the Hicatee Conservation Research Center (HCRC) at the Belize Foundation for Research and Environmental Education (BFREE) in central Belize. Therefore, the focus of this proposal will be on my second objective that focus on the husbandry protocols by which to assess the nutritional ecology of D. mawii.

**Host Institution:** Belize Foundation for Research and Environmental Education (BFREE). **Faculty Advisor:** Dr. Raymond Carthy, Assistant Unit Leader, Florida Cooperative Fish and Wildlife Research Unit
**Award:** $5,000 USD

The BFREE field station. The thatched-roof building (left) is the kitchen and the smaller structure (right) is BFREE's office. Bananas, avocados, and other tropical fruits grow in a cleared garden area (Photo by Nichole Bishop)

# Kelly Chapman

Research Assistant, Department of Anthropology, College of Liberal Arts and Sciences

## To What Extent are Water and Hygiene Behaviors Mediated by Water Insecurity and Cultural Beliefs in the Ouest Department of Haiti?

Despite water being vital for life, the cultural practices surrounding water acquisition and use related to health and well-being in Haiti are underrepresented. Contaminated drinking water has obvious consequences for health and safety, however, water used for personal hygiene can also lead to skin irritation, infection, and increased susceptibility to sexually transmitted infections. The study includes: 1) a validated cross-cultural water insecurity survey to determine barriers and accessibility to sufficient water quality and quantity at the household level; 2) cultural consensus questionnaires to determine patterns of cultural beliefs; and 3) ethnography, of the cultural practices and behaviors that contribute to water contamination or susceptibility and the origins and structure of knowledge formation and dissemination that contribute to the belief that water is causing vaginal illness.

Helping to collect water for a participant's household.

> "This funding contributed to data collection for my PhD research on water insecurity and the resulting cultural behaviors. Data collection went more smoothly than I could have hoped and I have already submitted the first of several publications that will come out of this research."

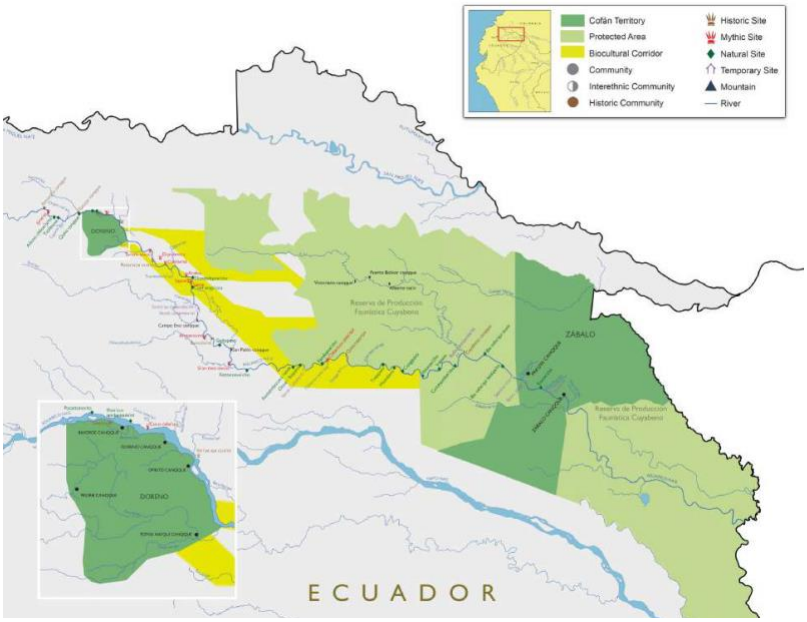
**Host Institution:** Université d'Etat and Enstiti Travay Sosyal & Syans Sosyal, Haiti.
**Faculty Advisor:** Dr. Anthony Maurelli, Professor, Department of Environmental and Global Health, College of Public Health and Health Professions **Award:** $2,500 USD

# Michael Esbach

UF Graduate Student Fellow, Interdisciplinary Ecology
College of Agricultural and Life Science

*Fostering Amazonian Resilience through Biocultural Mapping*

As one of the most culturally, linguistically, and ecologically diverse regions on the planet, the Amazon represents an excellent environment for the study of resilience. Social and ecological systems in the Amazon have faced large and small seasonal, annual, and multiannual disturbances through time; diverse and creative responses to these challenges have allowed communities to adapt and sustain their social-ecological environments over millennia. Consequently, these complex interactions between indigenous peoples and their natural environment have generated a diversity of biocultural systems characterized by higher levels of resilience. Building on the adaptive traditions and cultural institutions of indigenous communities, this project focuses on understanding and managing for biocultural resilience across the Amazon.




**Biocultural Corridor between Cofán Zabalo and Dureno**

**Host Institution:** Fundación Sobrevivencia Cofán (Foundation for the Survival of the Cofán Nation), Equador. **Faculty Advisor:** Dr. Bette Loiselle, Director, Tropical Conservation and Development Program Center for Latin American Studies & Professor, Department of Wildlife Ecology and Conservation **Award:** $4,525 USD

> "By focusing on community identified mammals that are both important culturally and as a food source, we can help Dureno and Zabalo to achieve healthy human and ecological communities."

> "Taking time to facilitate conversations that are culturally appropriate proved to be one of the most important aspects of this project."

## Claire Friedrichsen

Research Assistant, Department of Soil and Water Sciences
College of Agricultural and Life Science

*The Role of Participatory Research for Integrated Watershed Management and Creating Sustainable Food Systems*

The goal is to improve irrigation water quality by identifying barriers to community maintenance of wastewater treatment wetlands and make recommendations for removing the barriers. The objectives are to: 1) capture and construct mental models of constructed wetlands for wastewater maintenance held by different populations (farmers, local politicians, scientists, and extension agents); 2) compare the differing mental models, and identify communication issues to maintaining constructed wastewater treatment wetlands; and 3) make recommendations for how scientists and extension agents can improve current and future projects by using communication that is inclusive for all stakeholders, thus enhancing development and dissemination of wastewater treatment wetlands.

**Host Institution:** International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, India. **Faculty Advisor:** Dr. Samira Daroub, Professor, Department of Soil and Water Sciences, College of Agricultural and Life Science **Award:** $3,800 USD

> "Wastewater management is a problem that affects 1.3 billion people in India and unfortunately because of cultural taboos very few people are working on solving this issue."

## Lindsey Laytner

Research Assistant, Environmental Science and Global Health
College of Public Health and Health Professions

*Reducing Malnutrition in Ethiopia: Improving Knowledge, Attitudes and Practices in Animal Husbandry within the Individual, Household and Community*

This research aims to understand motivation for and beliefs surrounding livestock holding, to analyze the human child-livestock animal interface (i.e. the interactions between livestock and children at the household-level), and ultimately to provide essential insight into the complex relationship between livestock ownership, livestock health, and child health and nutrition through exploration of the household environment and fecal oral microbe transfer networks.

**Host Institution:** Haramaya University (Harar—Kersa District). **Faculty Advisor:** Dr. Sarah McKune, Assistant Professor, Department of Environmental and Global Health, College of Public Health and Health Professions **Award:** $6,685 USD

# Patrick Milligan

Research Assistant, Department of Biology
College of Liberal Arts and Sciences

*Ecosystem and Societal Impacts of Big Headed Ant Invasion in the Mpala Environs, Kenya*

Research focuses on landscape-scale ecological processes, and how these processes are tied to the diversity and functional redundancy of plant and insect communities. This research supports the study of ongoing biological invasion into Kenyan savannas and the effects of invasion and disturbance on important plant- and insect-mediated. Specifically, field work will focus on three objectives: 1) Assess changes to key functional groups within the native arthropod community; 2) Assess invasion-driven changes to key arthropod-mediated ecosystem services at Mpala Research Center; and 3) Experimentally test the effect of big-headed ant on the water stress and leaf physiology of a key savanna ant-plant.

**Host Institution:** Mpala Research Centre, Laikipia, Kenya. **Faculty Advisor:** Dr. Todd Michael Palmer, Assistant Professor, Department of Biology, College of Liberal Arts and Sciences **Award:** $6,145 USD

"To conduct my surveys, I would typically leave home at 2:15 am so that I could arrive at my study sites around 4 am, with a field assistant and armed guard. Our work days would usually conclude at 1 pm. Almost all of my research was done with two pieces of equipment: a portable photosynthesis meter and a portable water stress meter. Both machines weigh about 45 pounds, and are impossible to use in the rain – this meant that my surveys had to be completed before 1-2 pm, when rains usually begin during the seasonal wet season."

"Over the course of the summer, I taught ~80 students (from Jomo Kenyatta University in Nairobi, Turkana Basin Institute, and Tropical Biology Association) about our research and to use both pieces of equipment to answer basic questions about tree physiology and evolution. I greatly benefitted from these field lessons: I've become much more comfortable as a head lecturer."

Panoramic shot of whistling-thorn acacias and the portable photosynthesis meter at Ol Pejeta.

# Riley Ravary

Graduate Fellow, Department of Anthropology
Center for African Studies, College of Liberal Arts and Sciences

*Governance in Transboundary Protected Areas-Analyzing Community Experiences at Mount Elgon National Park in Uganda*

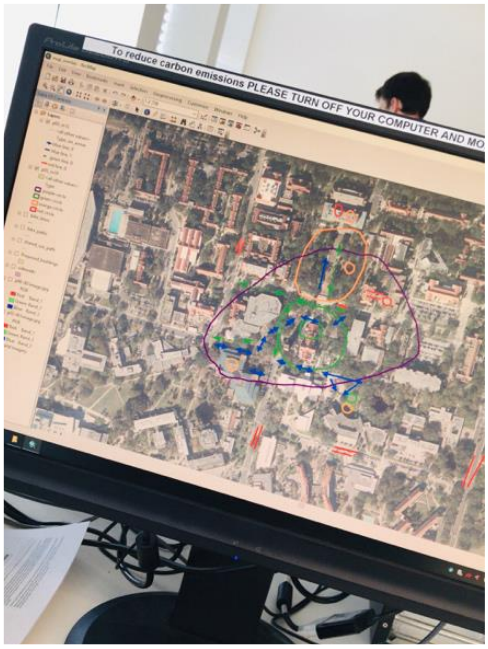
Through a case study of Uganda's Mount Elgon National Park, this field research project will study the practices and experiences of governance in transboundary protected areas. Specifically, this work will focus on, who and what do transboundary protected areas protect? How are protections imposed and legitimized? Does this type of governance improve the protection of local resources, residents, and resource users—or does it increase vulnerabilities they face? How do persons who work, reside, and move through transboundary conservation areas balance the trade-off between protection and vulnerability?

**Host Institution:** Makerere University, Bududa and Sipi (field site), Uganda. **Faculty Advisor:** Dr. Brenda Chalfin, Professor, Department of Anthropology and Center for African Studies, Director, Center for African Studies **Award:** $3,000 USD

View of the Lower Sipi Falls from the Caves at Mount Elgon National Park in Uganda, Photo Courtesy of Riley Ravary

# Martha Battaglin Ramos

Department of Landscape Architecture
College of Design, Construction and Planning




Creating the maps for the study

*Experiential Landscape Principles: Fostering Human Psychological Wellbeing through the Design of Urban Restorative Landscapes*

This research brings together different fields of knowledge, integrating environment and behavior studies, psychology, architecture, landscape architecture, urban planning and design, Public health and policy---making towards developing a comprehensive framework for creating healthier cities for people. Experiential Landscape is a relatively new emerging method that I will apply to a new context. Working with Prof. Thwaites provides a unique opportunity to discuss my data, its analysis and representation, and the implications of the results. It is important to conduct this research in the UK under his direct supervision, especially given the nature of the mapping technique, towards an accurate interpretation of the findings.

**Host Institution:** The University of Sheffield, Sheffield, UK. **Faculty Advisor:** Dr. Thomas Scott Hoctor, Associate Professor, Department of Landscape Architecture and Planning, College of Design Construction and Planning. **Award:** $3,515 USD

## Lessons Learned

"1. Always trust my vision for my projects but also be able to adapt. Being flexible allowed me to constantly refine my study plan and deliver a much more robust and sophisticated final product.

2. Having a strong plan gives you structure and confidence. Having a clear image of the big picture helped me with time and budget management, and it served as a reminder that no matter how many unforeseen circumstances I would have ahead of me, I knew I would be able to return home with more than what I had left it with.

3. Going away always broadens your perspective. I wanted to stimulate my creativity and senses, and there was nothing better than seeing things from new angles, in a different country, in freezing temperatures, immersed in another culture."

# Shujian Yu

Research Assistant, Department of Electrical and Computer Engineering
Herbert Wertheim College of Engineering

*Analysis of Machine Learning Algorithms with Information Theoretic Perspectives*

This research focuses on machine learning for signal processing and information theoretic learning, with specific interests on understanding of neural networks with information theoretic concepts and data processing in the non-stationary environment. The goal of the research project is to explore how information theoretic theorems and concepts can be brought to bear on machine learning algorithms (especially for deep neural networks) in unorthodox and fruitful ways, thus providing a principled way to analyze their capacities, limits as well as tradeoffs.

The midnight sun in Tromsø (photo taken in 3:00 AM).

**Host Institution:** University of Tromso – The Arctic University of Norway. **Faculty Advisor:** Dr. Jose C. Principe, Distinguished Professor, BellSouth Professor, Director of Computational NeuroEngineering Laboratory, IEEE Fellow, Department of Electrical and Computer Engineering **Award:** $5,000 USD

"My mentor at UiT, Prof. Robert Jenssen, believes I can apply our new theory to various engineering applications, such as, for band selection in hyperspectral images in geographic theory, and for the interpretation of convolutional neural networks applications in computer science.

. . . We have and will publish our work in the best conference and journal in our community, and will continue our collaboration on several papers."

# 2016 – 2017 Program

## Claudia Andrea Baudoin Farah

Research Assistant, Department of Tropical Conservation & Development
School of Natural Resources and Environment

*Indigenous autonomies and natural resource governance in the Isiboro Sècure Indigenous Territory and National Park (TIPNIS)*

The goal of this research is to contribute to the understanding of different conceptions of indigenous autonomies in their relation to natural resource governance. Working in the Isiboro Sécure Indigenous Territory and National Park (TIPNIS). Working in six different communities, the study included in depth, semi-structured interviews, participant observation, a Q-sort ranking activity (in which participants rank predefined statements/ideas according to their perception of their importance) and focus groups. The results of these preliminary pilot tests contribute to the development of more robust and validated research instruments.

River Transportation in TIPNIS, Bolivia

**Host Institution:** Instituto Socio-Ambiental ISA- Bolivia, Cochabamba, Bolivia. **Faculty Advisor:** Dr. Stephen Perz, Associate Professor of Sociology, University of Florida
**Award:** $4,000 USD

> "Our very first night, we did not stop to camp in a community and we kept on navigating. It was far colder than I had anticipated (who would have thought it can be cold in the Amazon!). Small fish would jump into the canoe as we passed groups of river dolphins hunting, and we had to find them among the blankets and luggage to put them back in the water. The moon and the stars were so bright that it was easy to see the river and even animals. During those days, we saw dolphins, caimans, gators, otters, countless birds, and jaguar footprints on one beach. It is an astonishing area."

# Zachary Emberts

PhD Candidate, Department of Biology, College of Liberal Arts and Sciences

*The Evolution of Permanently Dropping Animal Weapons*

Travelled to Perth Australia to work with Dr. Philip Bateman, one of the leading autotomy faculty in the world to study the mystery of why some insect species permanently drop a limb, which serves as a weapon for its survival. The research focused on how these weapons, which are vital to reproductive success, are dropped without the ability to regenerate. Zach's research examined which species permanently drop them their *weapons* and whether certain species are being selected if they retain their *weapons*. The goal is to understand the evolutionary history of, and selective pressures acting on, the self-induced limb loss and weaponry in Coreids – the leaf-footed bug.

*Fieldwork in the Australian Bush*

**Host Institution:** Curtin University, Perth, Australia. **Faculty Advisor:** Dr. Colette St. Mary, Professor of Behavioral and Evolutionary Ecology, University of Florida **Award:** $6,909 USD

"Working in Western Australia, I collected and documented traits of 337 adults across 8 new species of Coreids. This data will contribute to an across species study that looks at how such an extreme survival trait evolves. The fieldwork introduced a diversity of specimens vital to developing a comprehensive understanding of evolution within this group of organisms."

# Cody Howard

PhD Candidate, Department of Biology
College of Liberal Arts and Sciences

*A study of Sub-Saharan Africa Climate History*

The wood hyacinths are an excellent candidate to further explore and expand our understanding of sub-Saharan Africa's climatic history due to their widespread distribution throughout the continent. Cody Howard's fieldwork enabled him to build living collections of the *Ledebouria* specimens enabling greater access to data and more detailed morphological analysis. His travels through eastern portions of Tanzania, most of Zambia, parts of Zimbabwe and much of Namibia he was able to add 83 additional living collections to support his dissertation.

"The drive was peaceful and we arrived early afternoon. The property at Nsobe is enormous with acres of miombo woodland, farming plots and sleeping quarters. After afternoon tea and cookies, we went for a drive around the property in search of interesting plants. It took us a surprising 2.5 hours, during which time we saw some awesome plants but no Ledebouria. It was strange to me that we couldn't find them since the habitat looked exactly like what they'd prefer. On the following day, at our new camp, while brushing my teeth, I noticed a peculiar little plant with one flat leaf on the ground and my headlamp highlighted the faint little spots on the surface. My curiosity got me and I had to dig. Turns out it was a Ledebouria and my day ended on an awesome note. "

**Host Institution:** Botswana National Herbarium, Gaborone, Botswana; University of Zimbabwe, Harare, Zimbabwe; University of Zambia, Lusaka, Zambia
**Faculty Advisor:** Dr. Nico Cellinese; Associate Curator, Herbarium & Informatics, Florida Museum of Natural History, University of Florida **Award:** $7,000 USD

# Jennifer Moore

UF Graduate Fellow, Department of Wildlife Ecology and Conservation
College of Agriculture and Life Sciences

*Biodiversity in Rwanda*

Rwanda, like many countries in the world, is losing its biodiversity at an alarming rate due to high human population density and extreme poverty. Documenting and monitoring the distribution and abundance of vulnerable wildlife species is of utmost importance for identifying conservation priorities and combatting problems such as biodiversity loss due to anthropogenic threats. My overall research goal is to quantify the number of mammalian species and their distribution in Nyungwe National Park, and to study issues pertaining to their conservation in the park.

**Host Institution:** Wildlife Conservation Society, Nyungwe National Park, Rwanda. **Faculty Advisor:** Dr. Madan Oli, Professor of Ecology, University of Florida **Award**: $6,172 USD

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Nyungwe National Park is a diverse forest ranging in elevation from 1451 to 2950 meters and covering a variety of habitat types such as dense rainforest, open savannah, bamboo forest, and swamp. And along with this habitat diversity, Nyungwe is a biodiversity hotspot home to more than 85 mammal species.

Conservation work is a lot more than studying species; it is also understanding the connection between the local people and the forest, and how we can work together to protect not only the forest and species, but also the livelihoods of the people living around the park.

With Protais Nyigaba (Biodiversity Research & Monitoring Officer)

# Fezile Mtsetfwa

Research Assistant, Department of Wildlife Ecology and Conservation
School of Natural Resources and Environment

*The Effect of Anthropogenic Climate on the Savanna in Southern Africa.*

Global climate change is altering the conditions that make Savanna systems possible. As a result, most protected areas that are currently savannas are expected to lose their ability to maintain most savanna vegetation in less than a hundred years. The main objective of this study is to determine how anthropogenic climate will influence savanna distributions across southern Africa, by investigating the factors that could inhibit or promote the ability of large savanna tree species to move with the climate that is suitable to them.

All Out Africa staff member (left) and International student volunteer (right) assisting with data collection in the field.

By identifying areas that are more or less vulnerable to climate change we can utilize Africa's limited resource to target conservation efforts in the areas most likely to forest savanna system into the next century.

**Host Institution:** Savanna Research Center, Mbuluzi, Swaziland
**Faculty Advisor:** Dr. Robert McCleery, Associate Professor of Biology, College of Liberal Arts and Sciences.
**Award**: $3,668 USD

"During my time in Swaziland, I had the opportunity to present my research at the 2nd annual Savanna Research conference which was co-hosted by the University of Swaziland and SRC. Even though my research was on going, I presented the concepts and what I hope to attain at the end. The Conference was well attended by representatives of important Conservation institutions including the Swaziland National Trust Commission (SNTC), the Swaziland Environmental Authority and the vice chancellor of the University of Swaziland.

The biggest lesson from this summer was to start a field season thoroughly prepared. There are only a limited number of days to collect all the necessary data before getting back to school. This means sticking to a schedule and having clear goals to be attained at the end. This was my longest field season, so I had to exercise a bit more discipline than I am used to."

# Tania Pineda Enriquez

PhD Candidate, Department of Biology, College of Liberal Arts and Sciences

*Diversity and Evolution of Brittle Stars across the Ocean: Revisionary Systematics of Ophiolepidids*

Recent efforts using molecular techniques have uncovered a wealth of cryptic diversity – species overlooked by past morphological studies, suggesting that the delimitation and identity of all (marine) species should be reevaluated with the aid of genetic and more detailed morphological methods. The proposed project will advance our understanding of diversity, speciation processes, and distribution patterns of marine species in the tropical and temperate zones by using brittle stars as model organisms.

My workspace in Dr. Fujita's Laboratory

**Host Institution:** National Museum of Nature and Science in Japan, Tokyo, Japan; Muséum National d'Histoire Naturelle, Paris, France
**Faculty Advisor:** Dr. Gustav Paulay, Curator of Marine Malacology, Florida Museum of Natural History, University of Florida **Award:** $5,458 USD

"During the month, I was visiting the research lab of Dr. Fujita, I was sharing the office with Dr. Yoshiaki Ishida who is one of the experts on fossil ophiuroids. It was wonderful to be also working with him as we could talk about related species to my study group. Also, every two weeks Dr. Irimura, a retired researcher and the mentor of my other collaborators, would visit the lab and I was able to discuss my research with me, making this experience even more valuable. In addition, I met some of the graduate students of Dr. Fujita and they taught me how to use their scanning electron microscope.

The benefit to my research was being able to redescribe material and add new taxa to my project, compare with my notes from other collections, access to rare scientific literature, taking photos of specimens, obtaining tissue samples for molecular analyses which are crucial for my research, and being able to analyze and photograph specimens using the scanning electron microscope (SEM). Using the SEM was free of cost, which is unusual as normally organizations (e.g. UF) charge visitors as well as their own researchers for the use of this type of equipment."

# Brian Wingender

PhD Candidate, Materials Science & Engineering
Herbert Wertheim College of Engineering

*The Synthesis and Characterization of Synthetic Bone Substitute*

Bone is a hierarchical material, an interpenetrating composite of protein (collagen) and mineral (calcium phosphate), with organization that can be very depending on the length scale of observation. The goal of the experiment is to experimentally verify the existence of an amorphous, or fluidic, mineral precursor which is able to infiltrate the collagen fibrils and spread out prior to crystallization. Aside from the knowledge gleaned from such an experiment, the real value added for me is the experience of learning a very technical, cutting-edge microscopy technique from a master microscopist.

**Host Institution:** The University of York, York, England; Max Plank Institute (MPI), Potsdam, Germany. **Faculty Advisor:** Dr. Laurie Gower, Professor of Materials Science & Engineering, University of Florida. **Award**: $4,800 USD

> "I began experiments the day after my arrival, which consisted of learning the Raman microscopy system and testing out a newly fabricated temperature-controlled stage."


A scion of Newton's famous apple tree. Several clippings were taken from the famous apple tree that allegedly inspired Isaac Newton's theory of gravity. One of the clippings was planted at the University of York in the courtyard outside Dr. Kröger's office.

# 2015 – 2016 Program

## Daniel Brooker

PhD Candidate, Department of Physics, College of Liberal Arts and Sciences

"The expertise of Professor Odintsov made it possible for me to study the f(R) models of inflation which are currently favored experimentally and of which I had very little exposure."

*The Theory of Inflation to Explore Our Own Origin, and the Origin of the Universe around Us*

We study the universe in its infancy during a period called inflation. Inflation was first proposed in the early eighties to explain several problems with the big bang theory. Inflation has been confirmed experimentally and has become a part of the 'standard model' of cosmology. My goal is to perform detailed numerical studies of many different theories of inflation in order to set the stage for examining the vast amounts of data which will be recovered by future experiments.

**Host Institution:** University of Crete, Heraklion, Greece; Institut de Ciències de l'Espai, Barcelona, Spain.
**Faculty Advisor:** Dr. Richard P. Woodard, Professor of Physics, University of Florida.
**Award:** $4,000 USD

## John Hangrove

PhD Candidate, Department of Wildlife Ecology and Conservation, College of Agricultural and Life Sciences

*How Has a Lack of Genetic Diversity Impacted the Success of South African Bass Populations?*

Developing an understanding of what circumstances have enabled Largemouth Bass to flourish in Africa. My goal is to examine the biological consequences of using small numbers of individuals to start new populations.

**Host Institution:** South African Institute for Aquatic Biodiversity; South Africa. **Faculty Advisor:** Dr. James D. Austin, Associate Professor of Wildlife Ecology & Conservation. **Award:** $5,100 USD

"I have gained valuable insights into fisheries management and their applications in a global context and this has had a dramatic impact on my perspective on fisheries and related research."

## Robert Johnson

PhD Candidate, Department of Biology, College of Liberal Arts and Sciences

*Green Turtles and Blue Carbon: Effects of Grazing On Seagrass Meadow Carbon Storage.*

Conservation and restoration of seagrass meadows have been proposed as a climate change mitigation strategy due to their high carbon storage capacity, My goal is to determine how green turtle grazing affects carbon storage in seagrass beds.

**Host Institution:** Central Caribbean Marine Institute, Little Cayman, Cayman Islands
**Faculty Advisor:** Dr. Karen A. Bjorndal, Distinguished Professor of Ecology, University of Florida **Award:** $8,266 USD

"Living and working at a foreign institution was a terrific opportunity, and one that I hope has resulted in long-term friendships and future collaborations with the people I met there."

## Rebecca Koll

PhD Candidate, Department of Biology, College of Liberal Arts and Sciences

*Investigation of Taxonomic Relationships and Herbivory Patterns of Gigantopterids from the Early and Middle Permian Landscape*

Gigantopterids, is a group of Permian broad-leaved seed plants comprised of thirteen genera most commonly found in present-day North America and China. The proposed research looks to developing a comprehensive understanding of environment-vegetation interaction during the waning phases of the Late Paleozoic Ice Age.

"Funding has provided the opportunity to expand my project to include a global biogeographic analysis of Permian Flora. Additionally, this grant has facilitated personal and professional relationships I would not have otherwise made."

**Host Institution:** Nanjing Institute of Geology and Paleontology, Chinese Academy of Sciences, Nanjing, China; Swedish Museum of Natural History, Stockholm, Sweden. **Faculty Advisor:** Dr. Steven R Manchester, Curator of Paelobotany, Joint Professor of Biology, Florida Natural History Museum at the University of Florida. **Award**: $7,410 USD

## Ummat Somjee

PhD Candidate, Department of Entomology and Nematology
College of Agricultural and Life Sciences

*The Metabolic Costs of Sexually Selected Weapons in the Leaf-Footed Bugs (Hemiptera: Coreidae)*

The diverse horns of the African antelopes, the massive tusks of elephants and the looming antlers of elk are all examples of animal weapons. These large and exaggerated weapons pose an important evolutionary question; how energetically costly are these weapons to the animals that bear them?

**Host Institution:** The University of Western Australia, Western Australian Museum
**Faculty Advisor:** Dr. Christine W. Miller, Assistant Professor of Entomology, University of Florida
**Award:** $9,671 USD

"I am confident that this experience will have disproportional impact on my future research directions and networks."

## Karen Vyverberg

PhD Candidate, Department of Geological Sciences
College of Liberal Arts and Sciences

*Carbonate Cements in Fossil Coral Reefs as Paleo-Sea Level Indicators*

"This length of time allowed me to be completely trained in the new laser-ablation technique which is done at only a handful of laboratories around the world."

To address the uncertainty between sea-level rise and temperature, I will study a past warm climate period known as the Last Interglacial (LIG) period to understand the timing and rates of ice sheet collapse and sea-level rise due to warmer polar temperatures. The aim of this project is to better constrain the behavior of sea level during the LIG using fossil coral reefs. By determining the age and elevation of the corals, I can reconstruct the past position of sea level in response to changes in climate. The research will focus on carbonate cements that are also present in fossil reef and are less susceptible to alteration.

**Host Institution:** Australian National University. **Faculty Advisor:** Dr. Andrea Dutton, Assistant Professor of Geology, College of Liberal Arts and Sciences. **Award:** $4,440 USD

# Summary Statistics

| 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|
| • 31 Applications<br>• 6 Awards (18.8%)<br>• Total Amount Awarded $38,847 | • 29 Applications<br>• 6 Awards (21.9%)<br>• Total Amount Awarded $34,204 | • 19 Applications<br>• 9 Awards (47%)<br>• Total Amount Awarded $40,170 | • 30 Applications<br>• 14 Awards (47%)<br>• Total Amount Awarded $49,920 | • 19 Applications<br>• 14 Awards (73.6%)<br>• Total Amount Awarded $47,673 |

## Number of Awards by College

| Awards by College | 2016 | 2017 | 2018 | 2019 | 2020 | TOTAL |
|---|---|---|---|---|---|---|
| Agricultural and Life Sciences | 2 | 3 | 4 | 5 | 1 | **15** |
| Design, Construction and Planning | | | 1 | | | **1** |
| Engineering | | 1 | 1 | 2 | 1 | **5** |
| Health and Human Performance | | | | | 1 | **1** |
| Liberal Arts and Sciences | 4 | 2 | 2 | 6 | 8 | **22** |
| Public Health and Health Professions | | | 1 | 1 | 2 | **4** |
| Veterinary Medicine | | | | | 1 | **1** |
| **TOTAL** | **6** | **6** | **9** | **14** | **14** | **49** |

## Total Number of Applications

| Application by College | 2016 | | 2017 | | 2018 | | 2019 | | 2020 | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent | |
| Arts | | | | | | | | | 1 | 5.3 | 1 |
| CALS | 9 | 29.0 | 11 | 37.9 | 8 | 42.1 | 11 | 36.7 | 2 | 10.5 | 41 |
| CLAS | 14 | 45.2 | 10 | 34.5 | 7 | 36.8 | 15 | 50.0 | 10 | 52.6 | 56 |
| DCP | | | 1 | 3.5 | 1 | 5.3 | 1 | 3.3 | 1 | 5.3 | 4 |
| Engineering | 5 | 16.1 | 5 | 17.2 | 2 | 10.5 | 2 | 6.7 | 1 | 5.3 | 15 |
| HHP | | | | | | | | | 1 | 5.3 | 1 |
| Journalism | | | 1 | 3.5 | | | | | | | 1 |
| Medicine | 2 | 6.5 | | | | | | | | | 2 |
| PHHP | 1 | 3.2 | 1 | 3.5 | 1 | 5.3 | 1 | 3.3 | 2 | 10.5 | 6 |
| Vet. Med. | | | | | | | | | 1 | 5.3 | 1 |
| **TOTAL** | **31** | **100** | **29** | **100** | **19** | **100** | **30** | **100** | **19** | **100** | **128** |

## Location of Study

| Country of Study for Awardees | Number of Projects Awarded* | | | | |
|---|---|---|---|---|---|
| | 2016 | 2017 | 2018 | 2019 | 2020 |
| Africa | 2 | 3 | 3 | 5 | 4 |
| Australia (Oceana) | 2 | 1 | | | |
| Caribbean | 1 | | | 1 | |
| Central America | | | 1 | | 2 |
| East Asia | 1 | 1 | | 1 | 2 |
| Europe | 2 | 2 | 2 | 3 | 1 |
| South America | | 1 | 1 | 4 | 3 |
| South Asia | | | 1 | | 1 |
| North America | | | | | 1 |

*Some students split their time among multiple locations.

# Notes

UF International Center
UNIVERSITY of FLORIDA