



THE PROPOSAL

First Time Try Grant Awarded

Varuni Jamburuthugoda is jumpstarting her career as a SUNY Geneseo tenure track faculty member in the Department of Biology with a half-million-dollar grant from the National Science Foundation (NSF) Building Research Capacity of New Faculty in Biology (BRC-BIO) program. After only one and a half years at Geneseo in a tenure-track position, she spent her 2022 winter break preparing a research proposal, *BRC-BIO Study of protein-nucleic acid interactions of RLE-LINEs*. This was the first time that NSF offered the BRC-BIO program, and only 27 projects nationwide were awarded grants. In addition to paying for travel, academic year and summer undergraduate research assistants, materials and supplies, publication costs, and an approximately \$50 thousand phosphor imager, the grant will also cover Dr. Jamburuthugoda's summer salary and six credit-hours of release time for each of the three years of the grant.



Assistant Professor of Biology Varuni Jamburuthugoda was awarded an NSF grant upon her first proposal submission.

“Based on my experience I can say that biochemistry research requires a great amount of time to develop and implement the experiments. Oftentimes, certain experiments require uninterrupted blocks of time, usually four to six hours or more,” says Dr. Jamburuthugoda.

The NSF BRC-BIO grant focuses on enhancing research capacity and broadening participation of new biology faculty members of non-research-intensive institutions, including primarily undergraduate institutions (PUIs) such as SUNY Geneseo. It aims to broaden participation, expand opportunities to groups underrepresented in the biological sciences, and strengthen NSF's commitment to diversity, equity, and

PI Jamburuthugoda partnered with Dr. Shawn Christensen at University of Texas at Arlington to submit the proposal to study R2 elements, which are transposable elements that insert into the 28S rRNA genes in many animal taxa. During the grant period their research team will characterize the *Bombyx mori* R2 protein (R2Bm), which has reverse transcriptase, endonuclease and nucleic acid binding domains, and they will study the role of R2 in target primed reverse transcription (TPRT). Their goal is to investigate how R2Bm recognizes and binds specifically to the target site in the 28S gene, as well as how it binds to RNA.

Dr. Jamburuthugoda's research team will generate point mutations in the R2 protein, and these mutants will be the focus of a large group of student projects that will characterize the binding protein to better understand integration. The pre-tenure period project will consist of many small, manageable projects for undergraduates that will allow the team to prepare multiple manuscripts for publication based on this work. (continued on p.2)

Securing Future STEM Teachers

Associate Professor and Chair of the Department of Geological Sciences Dori Farthing is the Principal Investigator (PI) and Distinguished Service Professor of Science and Mathematics Education Dennis Showers is the Co-PI of Geneseo's new National Science Foundation Robert Noyce Teacher Scholarship Programs, “Supporting and Preparing Future STEM Teachers through Scholarships and Teaching Experiences.” The goal of the \$1,447,654 grant-funded 5-year project, which began in May, is to attract, recruit, incubate, and nurture SUNY Geneseo STEM undergraduates as they earn their BA degrees and meet the requirements for New York State teaching certification. (continued on p. 2)



PI Dr Dori Farthing, Department of Geological Sciences, and Co-PI Dr. Dennis Showers, School of Education



First Time Grant Award *(continued)*

Dr. Jamburuthugoda's strong record of scholarship includes publishing 11 primary research articles in high-impact journals, winning the Marvel-Dare F. Nutting Award in recognition of an outstanding graduate receiving a PhD in Biochemistry from the University of Rochester School of Medicine and Dentistry in 2007, and completing a post-doctoral fellowship in the Biology Department at the University of Rochester. However, she is further from her doctoral and post-doctoral research than peers, having spent nearly a decade away while working as a Lecturer and Visiting Assistant Professor without space or time for research. During this period, her spouse completed a medical residency and received board certification as a family practice physician; and because of the time commitment required of medical residents, she had more responsibility for caring for their family.

"As a faculty member who held primarily non-tenure track appointments early on in her career to prioritize parenting and financial responsibilities, I am well positioned to advise and mentor a diverse student body about their career trajectories," says Dr. Jamburuthugoda.

Science professors at PUIs such as Geneseo conduct experiments as well as train, guide, and mentor undergraduate researchers. "Importantly, funding to reduce my teaching load will allow me to devote more time in the lab toward my research and toward my mentoring responsibilities; and offering paid research assistantships to undergraduates during the academic year and for an entire summer is highly valuable both toward the advancement of my research and career and toward the advancement of my students' careers," she says.

"Being an immigrant woman from Sri Lanka, who is also a first-generation college graduate, I have an appreciation for the challenges faced by various disadvantaged students. As a member of the Diversity, Equity and Inclusion committee in the Biology Department, I am committed to an active collaboration of students and faculty who work to build a welcoming and inclusive environment that bridges identities across our community." ♦

Upcoming Deadlines for Faculty

https://www.geneseo.edu/sponsored_research/internal

STEM Teachers *(continued)*

Farthing and her proposal development team were awarded the grant on their second attempt. The program is similar to their previously submitted proposal but, importantly, adds Monroe Community College as a collaborative partner to promote the Noyce program to MCC students. Both Co-PI faculty members from MCC, Professor of Geosciences Amanda Colosimo and Professor of Geology Jessica Barone, are SUNY Geneseo graduates with degrees in Geology.



Co-PI Dr. Jessica Barone, Professor of Geology at Monroe Community College, was a graduate of SUNY Geneseo

The grant will provide a minimum of 18 unique scholarships for future STEM teachers during their junior and senior years plus scholarship support for their ninth semester student teaching if it is needed. The NSF is also funding early teaching experiences for undergraduates, including: summer internships in informal learning environments such as museums; intersession in-classroom internships; pre-internship 1-credit courses for both the summer and intersession internships; a STEM Education Creation Team (modeled after Geneseo's previous Noyce award's Build It, Teach It, Leave It project led by PI Distinguished Teaching Professor of Physics & Astronomy Kurt Fletcher); and mentoring by New York State Master Teacher Program teachers. The new Geneseo Noyce grant team includes Associate Professor of Geological Sciences Amy Sheldon, Lecturer in Biology Rob Feissner, and STEM teacher at Dansville School District and Geneseo adjunct Nichelle Allen. ♦

We've Moved!

The Offices of Sponsored Research and Grant Management have moved in together at Erwin 221. Stop by to see our new surroundings.

Upcoming Deadlines for Students

https://www.geneseo.edu/undergraduate_research/campus-based-research-funding



Antiracism Within Student Athletics

Josephine Lewis
Class of 2023
Faculty Sponsor:
Dr. Sasha Allgayer

Tell me about your project: The purpose of this research project is to explore how people interpret and express allyhood related to social justice. Specifically, we are exploring how allyship is experienced *successfully* with student-athletes and students in general. By sharing the stories of students who are members of culturally marginalized groups, as well as members from historically dominant groups, we are investigating how those from various backgrounds work together to jointly establish allyship.

How is your project funded? I was awarded the summer 2022 Jason and Diana Kyrwood '95 Student/Faculty Research Endowed Fellowship.

What did you hope to gain from working on this project?

I hoped to grow in my social awareness and constantly uncover all the unconscious biases I may have, even as a woman of color.

Is there anything that has surprised you? I have been surprised by some of the nuances student-athletes of color have experienced on their sports teams and at Geneseo as a whole. Unfortunately, the perspectives of members of culturally marginalized groups are commonly generalized by society and due to this, as well as my own unconscious biases, I was looking to hear experiences that matched mine. Instead, I have heard a variety of experiences, stories, and reflections from participants.

How has working on this project impacted your long-term plans? It has caused me to contemplate my post-graduation plans. While initially I planned on ending my education with my bachelor's degree, I am considering attending graduate school and continuing to do research on similar topics. I have also considered writing an autoethnography about my own experiences as a student-athlete of color and my allyship journey.

What have you enjoyed the most? Facilitating virtual focus group sessions with diverse student groups and hearing their thoughts on what it means to be an ally.

What advice do you have for other students who may be interested in working on a research project? Don't look at research as academically challenging but instead as an opportunity to dive deeper into a topic you're passionate about! ♦



Effect of Changing Seasons on Soundscapes of Freshwater Ecosystems

Micah Hosley
Class of 2023
Faculty Sponsor:
Dr. Kristi Hannam

Tell me about your project: A soundscape is all the sounds occurring in an area. My project explores the underwater soundscape—specifically, how the freshwater soundscape changes throughout the season. By measuring the sounds that occur underwater using a hydrophone we can hear the wind above the surface, plants respirating, water bubbles, fish, and even sounds created by macroinvertebrates. Exploring this soundscape provides a way to document species and track patterns across day and night and across the year. It will help future research track the health of our environment.

How is your project funded? My project was funded through the Undergraduate Research Council. I was awarded a full-time fellowship for my project proposal. I was also awarded the Dr. Wendell and Barbara Rhodes Research Award for my research this past summer.

What did you hope to gain from working on this project? I hoped to gain the real-world experience of doing research that was new. Experiencing the process of research and how difficult and surprising it could be has opened my eyes.

Is there anything that has surprised you? I was surprised on how field work also worked hand-in-hand with the in-lab computer-based work that must be done to examine the actual impact of the research. I also was surprised how easy it was to get stuck in cattails while being waist deep in water!!

How has working on this project impacted your long-term plans? This project has opened my eyes to what real research can be and what there still is to learn. It has cemented my plans to explore the natural world in whatever profession I end up in. I want to be outside doing impactful work.

What have you enjoyed the most? I enjoyed the freedom that I had over my research—to explore what I wanted to and really dig into to the areas I wanted to look into. Self-driven research with the help of an advisor is a great way to use problem solving skills and see how difficult real research and science can be. I enjoyed seeing how many conclusions I thought were true were not entirely or even at all true, and that opened my mind to not simply accept what common conventions say is true because there always are exceptions.

What advice do you have for other students? Get into undergraduate research with a professor. Get to know the professor—they have so much knowledge on the topic. ♦



Geneseo Professors Awarded Fulbright Fellowships



Dr. Scott Giorgis and his family will go to Barranquilla, Colombia in spring 2023.

For the 2022-2023 Fulbright competition Professor of Geological Sciences Scott Giorgis and Professor of Geological Sciences D. Jeffrey Over, received Fulbright Scholar Fellowship Awards. This is the second Fulbright award that Dr. Giorgis has received. In 2014 he went to Chile to study the boundary between the Nazca and South American Plates. In spring 2023 he is scheduled to spend five months in Colombia, which lies at the junction between three tectonic plates: the Nazca, the Caribbean, and the South American plates. His host institution, Universidad del Norte in Barranquilla, will provide Dr. Giorgis with an opportunity to work in partnership with Dr. Camilo Montes from their Departamento de Física y Geociencias. Their collaboration to collect rock samples for paleomagnetic analysis will increase understanding of the tectonic history of northern Colombia. The collaborators will jointly teach a seminar on the tectonics of Colombia and paleomagnetism, and Dr. Giorgis will assist with two field classes. Immersion with the faculty and students at Barranquilla will allow Dr. Giorgis to investigate the possibility of organizing a future geology study abroad trip for SUNY Geneseo students to engage with the geology, landscape, and culture of Colombia. Dr. Giorgis plans to bring his family with him for the five-month Fulbright Fellowship.

Dr. Over was awarded a Fulbright Scholar Program Fellowship in Brno, Czech Republic for fall 2022, which coincides with his sabbatical leave. He is researching fundamental changes in Earth ecosystems at Masaryk

University with Professor Jiří Kalvoda and Dr. Tomáš Kumpan. Their research group is using geochemical and stratigraphic techniques, with special emphasis on sedimentary rocks formed by bacteria and other microbes that have relevance to modern global climate changes. Dr. Over also plans to continue his research on tentaculitids, an extinct enigmatic organism, many of which were first described from Bohemia. While in the Czech Republic he will study museum collections and visit field locations where the tentaculitids were first discovered. He has initiated collaborative research to study geochemical proxies for palaeoenvironmental and palaeoceanographic changes of the conditions leading up to and across the latest Devonian Hangenberg crisis, one of the significant mass extinction events in earth history. He also is teaching a course on event stratigraphy, a seminar on cycles and astrochronology. Dr. Over is accompanied by his wife, Associate Professor of Biology Jenny Apple, who was selected as an alternate for a Fulbright to the Czech program and is researching ant-mimicking spiders throughout Europe. She has collected specimens from Spain, France, and Italy during the summer. ♦



Drs. Over and Apple in Pordenone, Italy, along the mighty flume Nocello on a spider hunting afternoon.

The Fulbright Scholar Program of international educational and cultural exchange offers scholars college and university faculty, administrators, and researchers, as well as artists and professionals in more than 160 countries the opportunity to study, teach, conduct research, exchange ideas, and contribute to mutual understanding. It awards more than 1,700 prestigious fellowships each year, 800 for U.S. scholars to go abroad and 900 for visiting scholars to come to the United States. Geneseo encourages professors to apply for Fulbright awards and offers uniform support from the college for Fulbright awardees (see <https://www.geneseo.edu/fulbright/scholar-program>). ♦



Semiquincentennial Student Fellowship Project funded by the Gardiner Foundation

When Distinguished Professor of History Michael Leroy Oberg launched the Center for Local and Municipal History 2018, he had little experience writing proposals for grants funding. Since then he has submitted several proposals to federal agencies and private foundations and been awarded three grants. A recent proposal, *The Gardiner Foundation Semiquincentennial Student Fellowship Project* was submitted in response to an invitation from the Robert David Lion Gardiner Foundation, which primarily supports the study of New York State History. The Geneseo Center's mission is to promote local history in New York State. Dr. Oberg's impetus to create the center was his recognition that SUNY Geneseo students know little about local history in a state with an extraordinary and entirely unparalleled infrastructure for studying the state's unique history.

The three-year, close to half-a-million dollars Gardiner-funded project will cultivate community discussions and promote interest in local histories in New York related to the American Revolution and its legacy as we approach the 250th Anniversary of American Independence. Starting this fall, it will partner 50 undergraduate student fellows from seven colleges and universities across New York State with government-appointed local historians (hosts) and academic historians (mentors). The partner institutions include Brooklyn College, Canisius College, Cornell University, and SUNY New Paltz, Potsdam, and Stony Brook. The Center's website and other websites will document the undergraduate fellows' projects and encourage local civic discussions and education about the American Revolution in New York State.

SUNY Geneseo and partner institutions will cost-share funding to support:

- 50 undergraduate student fellows (\$4,800 each) for a summer applied research opportunity
- Summer salary and course reassignments for Dr. Oberg
- Stipends for the seven academic historian mentors
- Compensation for the government-appointed local historian hosts
- Travel for mentors and the program director to visit mentees at their fellowship sites
- An undergraduate webmaster to upload student projects onto the Center's website

- An undergraduate administrative assistant
- Costs to mail letters to New York State's 1,600 government-appointed local historians
- Final seminar in Long Island
- Costs to produce a free PDF or ePub downloadable book that compiles all projects produced during the grant period.

Dr. Oberg continues to search for grants and write proposals to retain the Director of the Center, Dr. Joel Helfrich. ♦



Michael Oberg

Joel Helfrich, Center Director

Grant Funding Opportunity:

Dangers and Opportunities of Technology: Perspectives from the Humanities

Dangers and Opportunities of Technology (DOT), a new grant program from the National Endowment for the Humanities (NEH) calls for research exploring the relationship between technology and culture and its impacts—both positive and negative—through the humanities and humanistic social sciences. The NEH hopes to attract scholars from a wide range of disciplines.

The DOT program offers funding for projects led by a single researcher (up to \$75K) and projects led by collaborative teams with more than one project director (up to \$150K). Teams may include students and members of community groups, such as churches and cultural centers, carrying out a broad range of activities leading to different types of deliverables, such as organizing field-wide convenings; conducting studies or interviews; designing experiments or prototypes; or developing articles, books, documentary films, websites, or podcasts.

In addition to their proposed outputs, the NEH will ask that each grantee write a white paper that will be available publicly on the NEH website, joining white papers from other ODH awards in the NEH-funded projects database.

If you are interested in finding out more about this opportunity, due February 2, 2023, download the Notice of Funding Opportunity and contact the Office of Sponsored Research. <https://www.neh.gov/program/dangers-and-opportunities-technology-perspectives-humanities> ♦



2021-22 Faculty/Staff Grant and Fellowship Awards

13 Awards Totaling \$2,699,112

Gerringer, M., Biology, Undergraduate Deep-sea Research Capacity Building with Training for Underrepresented Groups, National Marine Sanctuary Foundation, NOAA, \$24,432

Freeman, G., Center for Community Serving Geneseo, Humanities New York, \$600

Yokoyama, K., Farthing, D., Lewis, J., & Warner, N., Chemistry, Geological Sciences, Biology, MRI: Acquisition of WITec alpha300R Confocal Raman Microscope System, National Science Foundation, \$210,312

Urso, A., Education Soaring Stars Program at SUNY Geneseo, United Way of Greater Rochester and Livingston County, \$5,000

Urso, A., Education, Soaring Stars Program at SUNY Geneseo, Feinbloom Supporting Foundation, Rochester Area Community Foundation, \$20,000

Farthing, D., Showers, D., Barone, J. (MCC), & Colosimo, A. (MCC), Geological Sciences and Education, Supporting and Preparing Future STEM teachers through Scholarships and Teaching Experiences, National Science Foundation, \$1,447,654

Giorgis, S., Geological Sciences, Paleomagnetic Insights into Fault Movement in the Northern Andes, Barranquilla, Colombia, Fulbright, CIES, \$20,000

Over, D., Geological Sciences, Collaborative Studies and Teaching in Geological Sciences: Event Stratigraphy, Cyclostratigraphy and Astrochronology, and Research Investigation of Environmental Changes During the Late Devonian Global Crisis, Fulbright, CIES, \$17,400

Oberg, M., History. Center for Local and Municipal History, National Endowment for the Humanities, American Rescue Plan, \$172,692

Oberg, M., History, Gardiner Foundation Semiquincentennial Student Fellowships, The Robert D. L. Gardiner Foundation, \$302,623

Levy, D. Philosophy, The Geneseo Summer Institute in Justice & Ethics in Modern America, Philosophy Learning and Teaching Organization, \$1,000

Padalino, S., Freeman, C., Pogozielski, E., Fletcher, K., McLean, J., & Yuly, M. (Houghton College), Physics & Astronomy, Continuance of the Nuclear and Plasma Diagnostics for the EP-OMEGA and MTW Laser Systems, Laboratory for Laser Energetics, University of Rochester, DOE, \$450,000

Ewanow, S., University Police, Geneseo University Police Body-Worn Camera Proposal, Bureau of Justice Assistance, DOJ, \$27,399

