



UROOP Newsletter

Official Newsletter of the Undergraduate Research Opportunities
Program at the University of Hawai'i at Mānoa

Office Information

- Location: Moore 107/108 (temporarily closed)
- Office hours: 10:00 am - 3:00 pm, M-F
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Making progress

March 2021 marked the 1-year anniversary since our way of living, interacting, educating and being educated was upended. As we at UROP reflect on this milestone, we realize that while many restrictions and limitations are still in place, many things have changed for the better. We see signs of progress with overcoming the pandemic, with thousands of Hawai'i residents now vaccinated against COVID-19 and the state leading the nation in the lowest number of cases per day per capita. We as individuals are also progressing in many ways. Students, staff, and faculty continue to contribute new knowledge to their respective fields. We have added to our skillset the ability to facilitate and conduct online learning. We are using the advent of videoconferencing to expand our reach to new peers and colleagues across the country and planet. To summarize, we have all responded to the pandemic in ways that have helped us grow as students and educators.

This Spring 2021 issue of UROP's newsletter focuses on progress in education, technology, and at the individual level. Faculty are spinning up innovative new courses to bring STEM research experiences to students early in their academic careers (**p. 3-4**). Students are finding solutions to improve the ease of modifying sensors on unmanned marine vessels to increase their flexibility (**p. 8-9**). Undergraduate alumni are preparing to enter doctorate programs at highly prestigious universities (**p. 7**). As we continue to reflect on the past, these signs of progress lead us steadily toward a more positive future.



Photo: A 16-foot-long unmanned seafaring vessel called the Wave Adaptive Modular Vessel (WAM-V) at Sand Island

A Message from the UROP Director

Dr. Creighton M. Litton



Aloha mai kākou! On March 20, 2021, we celebrated the Vernal or Spring Equinox, one of two times during the year when the Sun is exactly above the Equator (Ka Piko o Wākea) and day and night are of equal length. In Hawai'i, we know this annual event as Ke Ala'ula a Kāne (The Dawning of the Path of Kāne), during which time the boundless, creative and life-giving energies of Kāne are celebrated. This is, importantly, a time to reflect deeply on a personal level, and set intentions for the coming year. As we transition from darkness (pō) to light (ao) with the coming of Spring, this is a time of equilibrium, balance and restoration. And just in time, what a crazy 12 months it has been! As we start to see concrete signs of coming out of the global COVID-19 pandemic with declining case numbers and rising vaccinations rates, what better way to acknowledge these important milestones than to look inward for balance and restoration, and to set positive intentions for the coming year? If you need any motivation for this, then simply check out the articles in this issue of the UROP Newsletter. From undergraduate students working on cutting edge research and creative work projects with their faculty mentors, to UHM's undergraduate alumni being accepted into prestigious graduate programs, to UHM faculty developing and offering innovative courses to prepare students for conducting their own research, this issue is full of compelling stories that are sure to provide anyone with motivation to dream big and to make their dreams a reality.

Douglas S. Yamamura Scholarship

UROP is honored to present the Douglas S. Yamamura Scholarship to outstanding undergraduate students enrolled in any field of study who are engaged in UROP-funded research and creative work projects. The scholarship was established with a generous endowment from the estate of Paul T. Yamamura to support scholarly work at UHM.

Each academic year, UROP considers all undergraduate project funding applicants for the prestigious Douglas S. Yamamura Scholarship and selects the best STEM and the best non-STEM student or student group to receive the scholarship. In an effort to support continued education of local students, preference is shown to undergraduate students who have graduated from a high school in Hawai'i.

The Fall 2020 Douglas S. Yamamura Scholarship recipients for a STEM project are a student group consisting of Katlyn An, a Pearl City High School graduate, and Ashley Hanato who graduated from Konawaena High School. Their project entitled "Investigating the interactions between selenium and glucocorticoids in a murine hypothalamic cell line" explores the functions and mechanisms involved with the regulation of antioxidant proteins in neurons treated with glucocorticoids. Glucocorticoids are a class of steroid hormones that are part of the body's natural stress response, but when present at chronically high levels they can also have negative side effects. Looking at selenium's interactions with glucocorticoids may be the key to reducing the negative effects of high levels of the hormone. Katlyn and Ashley are mentored by Dr. Marla J. Berry (School of Ocean & Earth Science & Technology).

"The essential nutrient selenium, known for its antioxidant capabilities and importance to brain function, may help protect against the repercussions of chronic glucocorticoid levels in the body."

- Katlyn An



"An understanding of glucocorticoids interaction with antioxidant nutrient, selenium, will lead to a deeper understanding of the negative effects and may be used to develop strategies to alleviate these side effects."

- Ashley Hanato

A hui hou, Hyang!

We bid Hyang Yoon farewell as she moves on to focus on her Doctor of Nursing Practice (DNP) program and an exciting new Graduate Assistant position with the UH Cancer Center. Hyang joined the UROP team in May 2019 as our graduate Program Assistant, where she was the first point of contact for current and prospective UROP-funded students. Hyang was responsible for critical UROP functions including processing student funding applications, delivering general information sessions to the UHM community, helping run the SURE Symposium, and much, much more. Having graduated from UHM with a B.S. in Global Environmental Science, then later serving as a teaching assistant as a graduate student in the Department of Oceanography, Hyang contributed a great deal of institutional knowledge and experience working with undergraduate students to UROP. She has been a crucial part of our team, and will very much be missed. Mahalo, Hyang!



Hyang Yoon

Welcome, Michelle!

Michelle joined the UROP team in March 2021 as our graduate Program Assistant. She is a second-year graduate student in UH's Doctor of Nursing Practice – Family Nurse Practitioner program. Michelle has a passion for helping others, working both as a Registered Dietitian and Registered Nurse. In her spare time, she enjoys surfing, hiking, diving, and doing anything outdoors. Being a student herself, she believes in the importance of setting other students up for success. She looks forward to working with the UROP team, helping expose and connect undergraduate students with more opportunities the University of Hawai'i has to offer! She is learning fast and is a welcome addition to the team.



Michelle Tom

ENTERING RESEARCH CURRICULUM: **Transformative Research Experiences (TREx)** FOR UNDERGRADUATE STUDENTS AT UH MĀNOA

"Entering Research Curriculum" (ERC) is a relatively new buzzword in undergraduate research and creative work. In a nutshell, an ERC is meant to prepare undergraduate students for engaging in one-on-one or group faculty-mentored research or creative work experiences (i.e., the so-called

"apprenticeship model" that is the traditional hallmark of most undergraduate research and creative work experiences), or Course-Based Undergraduate Research Experiences (CUREs, where an entire class works on a research or creative work project). An ERC has many potential benefits for students,

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faculty mentors, and universities. For students, these benefits include better engaging in their academic degrees, allowing them to explore potential interests and career paths, preparing them to conduct faculty-mentored research/creative work in subsequent years inside or outside of the classroom, and preparing them for future academic and professional success. For faculty, benefits include a direct mechanism to train groups of students simultaneously, and to recruit students to participate in their, or other's, research programs. For universities, benefits include having more students engaged in research/creative work that, based on national studies, translates to higher student satisfaction and retention.

UROP is excited to introduce a new undergraduate ERC, Transformational Research Experiences (TREx), at UHM for Fall 2021. The TREx is an introductory course (no prerequisites required) designed for 1st and 2nd year students that provides discovery-based investigation and hands-on experiences in a wide range of science fields.

Spearheaded by Dr. Judy Lemus, Interim Director of the Hawai'i Institute of Marine Biology (HIMB), the course was incubated via funding from the UHM Provost's Office, and is being delivered in partnership with organized research units (ORUs) from across campus, the Honors Program, and UROP. The intent is to offer an experience that caters to undergraduate students who have limited experience in the concepts and practice of scientific research. With a mobile rotational design, the course will introduce students to research projects at four different ORUs, where they will spend four weeks with each ORU on and off campus over the course of the semester. Participating ORUs include the Hawai'i Institute of Marine Biology, the Lyon Arboretum, the UH Cancer Center, and the Water Resources Research Center.



During this ERC, undergraduate students will work independently and in teams to develop a variety of science research, writing, and presentation skills. The course also includes additional field experiences focused on resiliency and sustainability science with University of Hawai'i Sea Grant College Program. Participating students will receive guidance on course logistics and transportation, projects, and a weekly discussion session (in-person, online, or hybrid). To register for the course, or request more information, please contact Dr. Judy Lemus at jlemus@hawaii.edu.

Overall, UROP is excited to see an increasing number of ERC courses on the UHM campus, and looks forward to partnering with more academic programs to offer more opportunities for undergraduate students to prepare for and get involved in research and creative work early in their degree programs.

Left: Field work observing dolphins at HIMB

Right: Dr. Judy D. Lemus, Interim Director and Specialist, HIMB



"We know that research experiences for undergraduates can have a significant impact on students' retention and career trajectories in the sciences. But these opportunities have traditionally been geared toward more advanced juniors and seniors, with relatively few opportunities for students at the freshman and sophomore levels. We wanted to introduce early undergraduates to the excitement of doing research and encourage them to explore science. UH Mānoa is home to many pre-eminent research units in the state and we have an opportunity to showcase them more in the undergraduate curriculum. This program has been really fun to put together with other Mānoa ORU directors and researchers, and we're delighted to be able to offer the inaugural course in the fall."

-Dr. Judy Lemus

STUDENTS, MENTOR CONNECT ON PROJECT KUALIMA VIA STUDENT OPPORTUNITY CENTER

UH News recently featured the Student Opportunity Center (SOC) in an article entitled “Undergraduate research, work, internship opportunities through database.” In this story, UHM College of Education Assistant Professor David Royer and undergraduate students Jessica Lau and Vanessa Liang shared their experience in using the SOC to connect to each other.

For the past three years, Dr. Royer has been hosting a professional learning series, Project KUALIMA, to help educators build knowledge, skill sets, and confidence in supporting students with challenging behaviors. He understood that the series could also serve as a valuable undergraduate student research project. He turned to the SOC to help promote the new opportunity across campus. The SOC not only curates a national database where students can search for thousands of opportunity listings, it also hosts a UHM-specific database. This is a centralized place where faculty and staff can recruit undergraduate students to work in labs, creative spaces, or elsewhere. The SOC allows users to post their own opportunities and edit listings any time, while also generating a webpage for each listing. It is free to use for all UHM undergraduate students, faculty and staff, courtesy of the Office of the Vice Chancellor for Research.

Dr. Royer posted Project KUALIMA to the SOC, where undergraduate students Jessica Lau and Vanessa Liang saw the posting and reached out. They are now working on Project KUALIMA as project co-coordinators. In their roles, Lau and Liang perform a variety of tasks, such as distributing and analyzing session evaluation data and project surveys, grading and giving feedback on assignments for participants, and answering questions regarding sessions and assignments for Project KUALIMA.

Lau advises *“Taking that initial spark when exploring the SOC and sending that email, applying for that position and meeting up.... There's no need to contemplate or set your mind on a certain possibility because the more you explore, the merrier!”*

Read the full UH News story at go.hawaii.edu/JBj
For faculty, learn more at: go.hawaii.edu/kD3
For students, learn more at: go.hawaii.edu/GCg

“I am able to network with people who have interests in the same ones that I would like to develop. I've always had a curiosity for research projects and the analysis and application of data, while also seeking a hands-on interpersonal experience with others. Project KUALIMA has allowed me to balance those curiosities, the waters before truly committing to a career pathway, and helped me solidify what I wanted to do even further.”

- Jessica Lau, Junior, Psychology major

“This experience has definitely shaped what I want to do in the future. My passions lie in learning more about children and their perceptions of the world. I definitely think I am more interested in learning about the individual student rather than the system that is put in place to help students in education. By going through this process of research with Project KUALIMA, I know now that this topic is the to I'm interested in studying.”

- Vanessa Liang, Senior, Psychology and Sociology major

“Jessica and Vanessa have surpassed my expectations in their level of commitment and support, attention to detail, how much I can trust them to work with sensitive information, or give them a direction after some mentoring and know that it's going to be carried out perfectly.”

- Dr. David Royer, Assistant Professor, College of Education



FACULTY MENTORING GRANT RECAP

UROP recently closed out the 2021 Faculty Mentoring Grant for Summer Undergraduate Research and Creative Work, which provides faculty mentors with up to \$75,000 in funds to support student research and creative work projects in the summer. This is our third consecutive year offering the grant, and it proved once again to be a success! We received 28 proposals requesting a total of \$243,173 in 2021.

Though we received slightly fewer applications this year than in previous years, the 2021 cycle is, on average, more disciplinarily-diverse. This is true in terms of project proposals as well as the faculty applicants themselves. Grouping proposals into four broad categories, UROP received: 7 in the Arts & Humanities, 5 in Engineering & Computer Sciences, 13 in Natural Sciences, and 3 in Social Sciences (vs. 4, 6, 25, and 6, respectively, in 2020) (**Figure 1**). Applicants represented 22 different departments/disciplines on campus. We thank all the faculty who applied for funding, and for mentoring undergraduate student projects in the summer. Final decisions on faculty applications will be available in April.

Summary of applications:

- \$243,173 in funding requested
- 28 proposals submitted
- 22 departments/disciplines represented
- Funds requested to support 78 undergraduate students

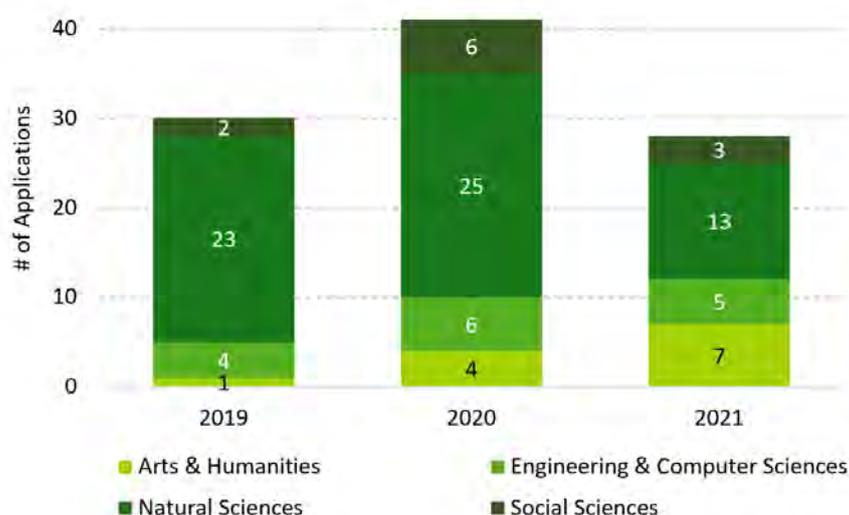


Figure 1. Faculty Mentoring Grant applications by discipline from 2019 – 2021

EvaluateUR for assessing student research and creative work outcomes

Students who participate in faculty-mentored research and creative work projects learn many critical skills, like the ability to work independently or communicate research effectively. Understanding how these skills are improving or not improving over the course of the project can be as informative as learning the skills themselves. A National Science Foundation-supported tool, EvaluateUR, can help students and mentors build this understanding. EvaluateUR assesses 11 different learning outcomes, each defined by more specific outcome components, associated with undergraduate research and creative work. The tool is structured as a series of surveys taken prior to the project start, in the

middle of the project, and at the of end of the project. The student and mentor take identical surveys, scoring the student's outcome components on a five-point scale, then they meet to discuss their respective scores and the reasons for assigning them. This helps the pair identify perceived strengths and weaknesses. A single subscription costs \$500 and allows an unlimited number of student-mentor pairs to utilize the tool. It includes a built-in statistical package with summary data for all outcome components, providing faculty a quick way to analyze survey results. To learn more about EvaluateUR, visit: serc.carleton.edu/evaluateur/index.html

UROP alumnus highlight: Jessica Chen

Following their research or creative work experiences, UROP alumni have advanced to graduate and professional schools, presented at conferences, published peer-reviewed papers, and launched their professional careers based on their UROP projects. This segment features a UROP alumnus, Jessica Chen.

Jessica Chen graduated from Kalani High School on O'ahu and continued her education locally at UHM, where she graduated in Spring 2018 with a B.S. in Molecular Cell Biology, with Honors, a B.A. in Studio Art, and an Undergraduate Certificate in Mathematical Biology. During her time at UHM, she was heavily involved in extracurricular activities and campus life. Jessica participated in the Honors Program, was a Mānoa Peer Advisor for the Department of Biology, and was 1 of 5 ASUH representatives who helped co-found Food Vault Hawai'i, an on-campus food pantry for students without reliable access to affordable food. Jessica also received funding from the Richard and Mildred Kosaki Student Assistance Award, the Hokama Award, and UROP to pursue a project titled "Characterization of luciferase and opsin genes in the copepod genus, *Pleuromamma*," under the mentorship of Associate Professor Megan Porter and graduate student Thomas Iwanicki. Her research sought to expand data on opsin and luciferase genes, providing insight on the relationship between these genes and how they enable bioluminescence in copepods in the genus *Pleuromamma*. She presented her findings at several on-campus presentation venues including the 2018 Annual Biomedical Sciences and Health Disparities Symposium, 43rd Annual Albert Tester Memorial Symposium, and the 2018 Undergraduate Showcase.

Jessica's undergraduate work provided the foundation and tools for her career in science. After graduating from UHM, she received the National Institutes of Health (NIH) Postbaccalaureate Intramural Research Training Award (POSTBAC IRTA). As a post-baccalaureate fellow at NIH, she studies and evaluates vaccine candidates against the Respiratory Syncytial Virus (RSV). In Fall 2021 she will begin a Ph.D. program in Virology at Harvard University. Her graduate work will be supported by the National Science

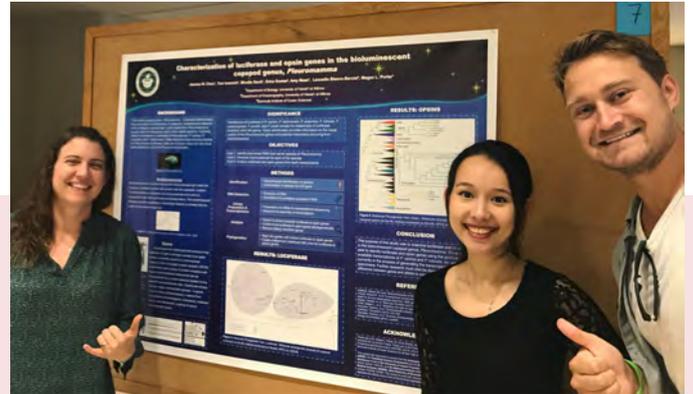


Photo: Poster presentation at the 43rd Albert Tester Symposium with Dr. Megan Porter (left), Jessica Chen (middle), and graduate student Tom Iwanicki (right)

“Take advantage of all the resources you have. There are lots of opportunities to get funding such as UROP, ASUH Research Awards, and INBRE Hawaii.”
–Jessica Chen

Learn more about the resources that helped Jessica pursue a career in research.

- Richard and Mildred Kosaki Student Assistance Award: go.hawaii.edu/JB5
- Hokama Award: go.hawaii.edu/jqJ
- UROP project funding: go.hawaii.edu/Qm3
- NIH IRTA: training.nih.gov/programs/postbac_irta
- NSF GRFP: nsfgrfp.org

Foundation Graduate Research Fellowship Program (NSF GRFP), which allows recipients to conduct research at any accredited U.S. institution of their choice, while providing a 3-year annual stipend of \$34,000 and a \$12,000 cost of education allowance for tuition and fees. Jessica is excited for this amazing opportunity, and plans to study host-virus interactions.

FACULTY AND STUDENT SPOTLIGHT

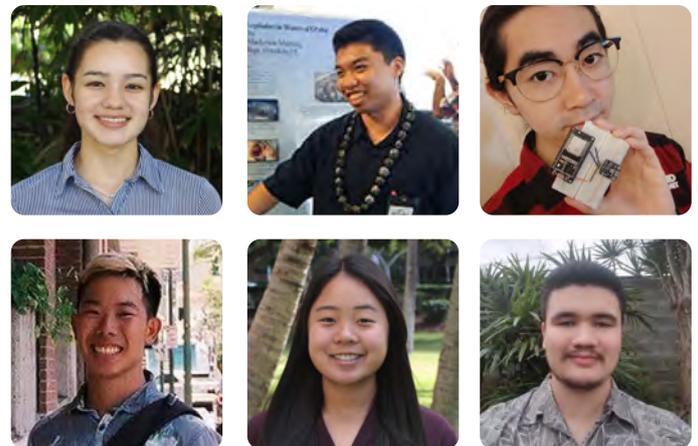


WITH DR. ZAC TRIMBLE & TEAM KANALOA

Team Kanaloa members Alexandra Makaiau, Brendan Cha, Dayne Saito, Keola Wong, Marisa Matsuo, and Tyler Wilfarht received UROP project funding in 2021 to support a project entitled “*Wireless Sensor Nodes for Autonomous Maritime Robotics Applications*” under the mentorship of Dr. Zachary Trimble (Mechanical Engineering). The goal of the project was to design Wireless Sensor Nodes (WSN) modules to simplify setup, eliminate the need for sensor recalibration, and improve sustainability on autonomous maritime robots. The team tested their methods on the Wave Adaptive Modular Vessel (WAM-V), a 16-foot-long unmanned seafaring vessel that utilizes several sensors for positional tracking and area mapping. Their goal would be achieved through the WSN’s precise repeatable mounting, wireless sensor communication, and solar power.

As Team Kanaloa is a multidisciplinary research group, the WSN project naturally challenged the team of mechanical engineering students to familiarize themselves with subjects both within and beyond their major. In particular, researching and integrating electronics and coding helped the team to broaden their engineering knowledge. The team hopes that the WSN project will help to advance both robotics and sustainability within the field.

Top: Dr. Trimble (in orange) working with undergraduate students to deploy the RIP Lab’s WAM-V for testing at Sand Island on Oahu.



Left to right, top to bottom: Alexandra Makaiau, Brendan Cha, Dayne Saito, Keola Wong, Marisa Matsuo, and Tyler Wilfarht

“Working on the WSN project provided me with some valuable insight into aspects of engineering that can’t really be taught through coursework. Managing finances, coordinating research, and collaborating with Dr. Trimble were valuable experiences that I’m glad I was able to gain through this project.” -Dayne Saito

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While COVID-19 restricted their ability to collaborate in person and conduct tests in the lab, working virtually on such an involved project has been a unique experience that emphasized the need for effective organization and communication.

Dr. Zac Trimble on mentoring RIP Lab students:

"The Renewable Energy, Industrial Automation, and Precision Engineering (RIP) Lab often teams with undergraduate students. Students tinkering with marine robots. Students writing new computer programs to control marine robots. Essentially, students having fun applying the theory they learn in the classroom on real marine systems. Clinging on for the ride of a lifetime is me, the lab's director. I love basking in the enthusiasm students exude, and appreciate their fresh perspectives and new ideas. As such, I provide an environment full of interesting problems and challenges for undergraduate students to explore. I strive to lead students to discovery for themselves. Nothing pleases me more than to see a student succeed after they take ownership of a project or problem. I believe that many times it would be faster to tell a student exactly how to accomplish a certain task, but it is really important for a student to make the discovery themselves. I need to strike a balance in providing enough guidance to ensure they are safe and successful, but they need to take the last few steps. They need to realize they really can be an engineer." -Dr. Zac Trimble

Learn more about the RIP Lab here: rip.eng.hawaii.edu/research/unmanned-x-systems

Spring 2021 Project Funding Application Cycle Update

UROP recently completed another very successful round of student project funding applications in Spring 2021 that saw the second highest number of student applicants for a spring cycle, with 92 students submitting a total of 54 project funding applications (39 individual and 15 group projects). We also saw several other positive takeaways, including a steady trend of increasingly diverse applications from different disciplines since the 2019 academic year. We also received more applications from Juniors than Seniors for the first time ever! This is in contrast to past application cycles where applicants were overwhelmingly Seniors. We hope that this indicates that more students are learning about UROP earlier in their academic career, and then taking steps to engage in research and creative work sooner.

Summary of applications:

- 54 applications submitted (39 individual and 15 group projects)
- 92 students total applied
- ~\$300,000 requested
- Students categorized their projects in the following disciplines:
 - Arts & Humanities 17
 - Natural Sciences 38
 - Engineering & Computer Sciences 23
 - Social Sciences 11

Learn more about UROP student project funding at: go.hawaii.edu/Qm3



REGISTER FOR THE 2021 SURE PROGRAM AND SURE SYMPOSIUM

Register now for the 2021 Summer Undergraduate Research Experience (SURE) program! The SURE is a free 9-week program that provides supplementary infrastructure to undergraduate students conducting research and creative work at UHM during the summer. SURE provides professional development modules once every two weeks on topics like writing resumes and cover letters, exploring and applying to graduate school, and more. It also provides students with a cohort of peers with whom they can interact and confer on the challenges, solutions, and rewards they experience when working on their faculty-mentored project.

The program concludes with the end-of-summer SURE Symposium on July 30th. The SURE Symposium invites undergraduate students conducting faculty-mentored research and creative work in all disciplines to showcase their projects. It provides students an excellent opportunity to solicit feedback from their peers, experts, and community members without formal presentation judging. The call for abstracts for the Symposium is open now through July 4! This event is free to both presenters and audience members.

Over 250 students have participated in the SURE to-date. We hope you will join us this year!

- Learn more and register for the SURE program here: go.hawaii.edu/qY3
- Learn more and submit an abstract for the SURE Symposium here: go.hawaii.edu/nqJ

Testimony from previous participants:

"The discussion helped me clarify and reinforce my own knowledge of the grad school application and admission process as well as give me further information on how to ensure that grad school is what I really want to do."

"The SURE Symposium taught me how to handle multiple different types of audience at once and how important it is to answer questions intuitively rather than technically."

"I really appreciated the honest advice from everyone and the breadth of topics covered."

ATTEND THE 2021 SPRING UNDERGRADUATE SHOWCASE

We are happy to announce that the 2021 Spring Undergraduate Showcase guest registration is now open! The Undergraduate Showcase is an opportunity for all undergraduate students in all disciplines across the UHM campus to present their faculty-mentored research and creative work. This event is held at the end of both Spring and Fall semesters and is sponsored by the Honors Program, Office of Undergraduate Education, and UROP via the Office of the Vice Chancellor for Research.

This semester the event will be held online again due to COVID-19. Students will present their work during live oral presentations on Zoom on April 30, 2021, during which time viewers are encouraged to provide feedback to presenters via an online form.

Event Information:

Date: Friday, April 30, 2021

Time: 9:00 am - 1:40 pm

Location: Zoom

Learn more at: go.hawaii.edu/3is

Join us online and learn about fascinating undergraduate student work at UHM. Presentations from past events like the Fall 2020 Undergraduate Showcase included topics like "Development of a Solar Water Heater for Hawaiian Climate" and "Directing a Film from a Native Cultural Perspective." You can look forward to other interesting project presentations like these at the Spring 2021 event.

To register as a guest for this event, visit: go.hawaii.edu/Jp6

Highlighted Opportunities

2022-2023 FULBRIGHT PROGRAM

go.hawaii.edu/NQJ

- International educational exchange sponsored by U.S. government
- Grants for individually designed study/research projects or English Teaching Assistant Programs
- Facilitates cultural exchange with people of the host country
- Graduating seniors, recent graduates, and graduate students eligible
- Apply with UHM by September 12, 2021

LIBRARY TREASURES SCHOLARSHIPS

go.hawaii.edu/3s7

- 2020-2021 AY scholarship opportunity
- Open to UH students at any level of study in all disciplines
- Submit proposal for research or creative project that uses UHM Library's collections
- Raise awareness campus-wide about educational values of the library's unique holdings
- Up to \$300 for individual, \$700 for groups of two, \$1200 for larger groups
- Deadline: May 7, 2021

L. STEPHEN LAU WATER RESEARCH ENDOWED SCHOLARSHIP

go.hawaii.edu/JQ4

- \$1500 scholarship to fund cost of attendance or research
- Eligibility:
 - Part- or full-time University of Hawai'i (UH) student
 - Upper division undergraduate student or graduate student
 - Pursuing minimum 4-year degree in discipline related to water resources at UH
- Applications must be postmarked by April 30, 2021
- Contact Barbara Guieb at barbarag@hawaii.edu

2021 SPRING UNDERGRADUATE SHOWCASE

go.hawaii.edu/3is

- Open to all undergraduate students at UHM who wish to present their faculty-mentored undergraduate research or creative work
- Professional yet relaxed presentation venue featuring UHM undergraduate student research and creative work project presentations
- Free to attend
- April 30, 2021 from 9:00 am - 1:40 pm on Zoom

OIC'S INNOVATION IMPACT CHALLENGE INITIATIVE

hawaii.edu/research/innovation-impact-challenge

- Partnership between UH Office of Innovation and Commercialization (OIC) and Hawaiian Telcom
- Seeking multi-disciplinary teams of UH researchers and students to solve among 3 challenges: Hands-free underground communications utility locator, Innovative ways to provide internet access, and Resolving obstructed communications conduit blockages
- Selected projects receive funding
- Contact Sandra Fujiyama at sandra.fujiyama@hawaii.edu

TO VIEW MORE OPPORTUNITIES AND:

studentopportunitycenter.com

1. Visit the Student Opportunity Center website
2. Create an account with your valid @hawaii.edu email address
3. Search for opportunities, or click the links in the previous listings to navigate directly to an opportunity page

LEARN MORE ABOUT THE STUDENT OPPORTUNITY CENTER

go.hawaii.edu/GCg