

Spring 2019

Center for Undergraduate Research Newsletter

University of Maine

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CENTER FOR UNDERGRADUATE RESEARCH

SPRING 2019. KNOWLEDGE . DISCOVERY . INNOVATION



THE UNIVERSITY OF
MAINE™



C E N T E R F O R
UNDERGRADUATE RESEARCH

PROGRAM	DATE
UMSS19 ¹ Abstract Submission Deadline	Mar 15, 2019
UMSS19 Accepted Abstract Announcements	Mar 25, 2019
2019 Summer Fellowship Proposal Submission Deadline	Mar 29, 2019
2019 Summer Fellowship Award Announcements	Apr 10, 2019 ³
UMSS19 Poster Printing Deadline	Apr 3, 2019 by 4 PM (FREE)
UMSS19 Poster Printing Deadline	Apr 5, 2019 by 4 PM (50% off)
UMSS19 Poster Printing Deadline ²	Apr 8, 2019 by 3PM
UMSS19 Event Date	Apr 10, 2019
Summer Fellowship Performance Period Begins	May 1, 2019 - Aug 31, 2019

¹ 2019 UMaine Student Symposium

² Last chance to guarantee your poster will be printed in time for the event is Mon April 8, by 3pm. You must have submitted and approved the proof of your poster by the 3pm deadline. Anything submitted after 4pm on Fri April 5, 2019 is at the students' expense/no cost-sharing contributions will be made by the UMSS19 Committee.

³ Award announcements will be made the UM Student Symposium Luncheon Ceremony at the Cross Insurance Center in Bangor.



Students, faculty and alumni are encouraged to submit information including student stories, and research opportunities for future newsletter editions by contacting Alexandria Jesiolowski, 207.581.3583, CUGR@maine.edu

The University of Maine does not discriminate on the grounds of race, color, religion, sex, sexual orientation, including transgender status and gender expression, national origin, citizenship status, age, disability, genetic information or veteran status in employment, education, and all other programs and activities. The following person has been designated to handle inquiries regarding nondiscrimination policies: Director, Office of Equal Opportunity, 101 North Stevens Hall, 207.581.1226.



The 2019 annual University of Maine Student Symposium (UMSS19) is held every spring and is open to ALL disciplines. This event involves student presentations in the form of posters, exhibits, or oral presentations to be judged by UMaine faculty, staff and community members. The Graduate Student Government and the Center for Undergraduate Research invite all students, faculty and staff to join us at the event on April 10, 2019 at the Cross Insurance Center in Bangor. The event is open to the public.

For information on how to submit an abstract and present at the symposium please see pages 4-6.

UMSS19 SPECIAL SESSION REQUESTS!

Special sessions can include alternative modes of presentation compared to the traditional formats (poster, oral presentation, or exhibit) such as panels, essay readings and other formats that require special accommodations. Resources are limited and requests are considered on a first come first serve basis by the UMSS19 Executive Committee.

[SUBMIT A REQUEST](#)

2019 RESEARCH AND CREATIVE ACTIVITIES SUMMER FELLOWSHIP [CALL FOR PROPOSALS](#)

The Center for Undergraduate Research (CUGR) is pleased to announce the Research and Creative Activities Summer fellowship program to support undergraduate student involvement in faculty mentored research. Several \$3,300 Fellowships will be awarded for the 2019 summer semester on a competitive basis; the competition is open to all UMaine undergraduate students from all majors. Each fellowship provides financial support for one student to conduct faculty mentored research. The CUGR Advisory Committee will review research and creative activities proposals for clarity of objectives, importance to the field, proposed approach, appropriateness of the budget, and indication of the project feasibility

Eligibility Criteria:

1. Any undergraduate student currently enrolled in a degree program at the University of Maine may submit a proposal in consultation with a faculty mentor. Preference will be given to students graduating in or after May 2020.
2. Applicants need to describe their research, placing it in the context of scholarly activities, while presenting in such a way that is understandable to the reviewers from outside of the applicant's research field.
3. Award recipients must submit a report including technical and financial data by September 10, 2019 and are expected to present the product of their research at the 5th Annual UMaine Student Symposium: Research and Creative Activity (UMSS20).

2019 RESEARCH AND CREATIVE ACTIVITIES SUMMER FELLOWSHIP

[APPLY HERE](#)

TO VIEW SAMPLE PROPOSALS FROM PREVIOUS AWARDED APPLICATIONS

[CLICK HERE](#)

2019 Summer Fellowship Award Recipients will be announced at the 2019 UMaine Student Symposium Luncheon Award Ceremony on 04/10/19 at the Cross Insurance Center in Bangor.

APPLICATION DEADLINE: 3/25/19

FOR MORE INFORMATION, CUGR.UMAINE.EDU



2019 UM Student Symposium: *Research & Creative Activity*

Call for Abstracts

The 2019 annual University of Maine Student Symposium (#UMSS19) is held every spring and is open to ALL disciplines. This event involves student presentations in the form of posters, exhibits, or oral presentations to be judged by UMaine faculty, staff and community members. The Graduate Student Government (GSG) and the Center for Undergraduate Research (CUGR) invite the submission of graduate and undergraduate research and creative activities projects. Submissions must be in the form of an abstract describing the focus, method or process, and outcomes of the project and submitted electronically at the provided link. Submissions must be authored by one or more students currently enrolled at the University of Maine (Orono) or University of Maine at Machias.

NOTE: All CUGR, MSGC, and CLAS Fellowship Award recipients are required to present at this event and must submit an abstract. For more information go to UMSS19.UMAINE.EDU

All submissions should be reviewed and pre-approved by the faculty mentor associated with the project. Any submissions without faculty mentor approval will not be accepted.

Dryfta Submission Process

To submit an abstract, you must:

1. [Register for UMSS19](#) and create an account.
2. Once you have created your account you must log in to your dashboard to [submit your abstract](#).

UMSS19

When: April 10, 2019, All Day Event

Where: Cross Insurance Center, Bangor

How to Apply: UMSS19.umaine.edu

Deadline: March 15, 2019 at 4:30pm

Acceptance Notifications: March 25, 2019

UMSS19 ABSTRACT SUBMISSION DEADLINE IS MARCH 15 @ 4:30PM

[UMSS19 - APPLY HERE](#)

Abstract Submission Guidelines and Criteria

The following information provides you with the criteria that must be met when submitting your abstract:

- **Abstract Summary.** The abstract summary should contain enough information about your research and scholarly activities to allow assignment of proper judges that are well informed and prepared to score your presentation on the event day. **Limit the abstract to only 250 words. An additional 100 characters are allotted for *Acknowledgments* and *References*.**
- **Clarity.** Your work will be judged based on both the submitted abstract and your presentation on the day of the event. **You need to clearly define the research topic, state the motivation behind your work, and the benefits to the academic community as well as the general public.** Your hypothesis, methods, and results should be explained in simple and concise language that is accessible by reviewers outside your field.
- **Acknowledgments.** All abstracts and presentations need to include an acknowledgment statement if they received funding and/or support from a UM unit, grant, etc.
 - For example: This research was funded by the Center for Undergraduate Research 2018-19 Academic Year Fellowship.
- **References.** Reference formatting should be applied as follows,
 - [1] J. Smith, B. Shannon, and C. H Yu, "Paper title", publication, year.
 - [2] Use a discipline-specific referencing format.

For more information including, presentation type photos, descriptions, and requirements

[Presentation Type Descriptions & Abstract Criteria](#)



NOTICE! Poster & Exhibit Presentations

RE: Poster Printing Costs & Deadlines

The timeline between participant announcements (March 25th) and the zero-cost poster-printing deadline (April 3rd) is *very tight*. **Therefore, it is important to plan ahead and give yourself ample time to receive the appropriate approvals.**

Things to Remember:

- **All presentations must be reviewed and approved by your faculty mentor prior to printing.**
- You must work with Printing Services to approve a proof of your poster prior to printing.
- **ALL posters, whether they are associated with a Poster Presentation or an Exhibit Presentation, must be created using the UMSS19 poster templates.**
 - Template will be provided in the acceptance letter notifications, they will also be posted on the UMSS19 website.
 - **NOTE: Poster-Presentation Template and Exhibit-Presentation poster template are different sizes.**
 - Template for poster presentations is 3'x4'
 - Template for exhibit presentation poster is 2'x3'
 - Posters are NOT required for an exhibit presentation
- Posters that are paid for by the UMSS19 Committee must be printed through [UM Printing Services](#).

Poster Printing Deadlines:

- **Wed April 3, 2019, by 4 pm** (FREE Posters)
- **Fri April 5, 2019, by 4pm** (50% discount)
- Last chance to guarantee your poster will be printed in time for the event **is Mon April 8, by 3pm**. You must have submitted and approved the proof of your poster by the 3pm deadline. Anything submitted after 4pm on Fri April 5, 2019 is at the students' expense/no cost-sharing contributions will be made by the UMSS19 Executive Committee.

2018-2019 Academic Year Fellowship Award Student Recipients!

The Center for Undergraduate Research (CUGR) is pleased to announce the 2018-2019 Academic Year Fellowship Student Recipients. The center's advisory committee selected 26 proposals from 95 student submissions to be awarded \$1,100 each during the academic year. Each proposal was reviewed by three reviewers and scored on clarity, research goals and objectives, importance to the field, time-line, budget and faculty commitment letters. Top proposals were then discussed at a panel.

In addition to the 26 CUGR Fellowship awards, 4 proposals were selected for funding provided by the College of Engineering (COE) Crowley Fund and 2 by the College of Natural Sciences, Forestry & Agriculture (NSFA).

CUGR 2018-2019 Academic Year Fellowship Award Recipients

(Student Name, Academic Focus, Project Title, Faculty Mentor)

- **Griffin Archambault**, Wildlife Ecology, "Developing a Novel Approach to Estimate Reproductive Success of Black Bears in Maine," advised by **Alessio Mortelliti**
- **Gabrielle Bock**, Chemistry, "Determination of Potential Biopolymer Substitutes for Intaglio Etching Constituents Based on Rheological and Adhesive Properties," advised by **William Gramlich**
- **Jaycob Bowker**, Animal and Veterinary Sciences (Animal Science), "Testing Moose for Active Lyme Disease Infections via PCR-Based Gene Amplification and Sequencing," advised by **Pauline Kamath**
- **Drew Brooks**, Microbiology, "The Role of MyD88 in macrophage recruitment to *C. albicans* infection in Zebrafish Swimbladders," advised by **Robert Wheeler**
- **Robert Brittingham**, Wildlife Ecology, "Filling the Knowledge Gap in deer mice and southern red-backed vole see cache management," advised by **Alessio Mortelliti**
- **Michael Buyaskas**, Wildlife Ecology, "Assessing the effectiveness of bait versus lure in linear arrays with multiple trail cameras to detect North American mammals," advised by **Alessio Mortelliti**
- **Nicholas C. Dieffenbacher-Krall**, Computing and Information Science, "Morphosis: Artificial Intelligence as Art," advised by **Sofian Audry**
- **Ian Donnelly**, Computing and Information Science, "Microscopia: A Museum of Organisms Created with SEM Photogrammetry," advised by **Sofian Audry**
- **Cody Gigac**, Chemical Engineering, "An investigation into the photochemical properties of cyclized-Azobenzene photoswitches", advised by **Michael Kienzler**
- **Lucy Guarnieri**, Biology, "The effects of European fire ants on blacklegged ticks on Mount Desert Island," advised by **Allison Gardner**
- **Ryan Kelly**, Kinesiology, "Motion Capture-Virtual Reality Multimodal Tools to Optimize ROTC Training," advised by **Cameron Arndt**
- **Mark Lambrecht**, Biomedical Engineering, "The Relationship between Breast Tumor Proliferation and the Structural Integrity of a Tumors' Microenvironment," advised by **Andre Khali**
- **Sadie Libby**, Psychology, "Childhood Trauma and Later Resilience: Is There a Cultural Component?" advised by **Shannon McCoy**
- **Sarah McCallister**, Microbiology, "Determining the Role of Prophage, Cuke, Gene Expression on Host Mycobacterium Smegmatis Gene Expression," advised by **Sally Molloy**
- **Jordan Miner**, Biomedical Engineering, "Imaging Zebrafish with Duchenne Muscular Dystrophy using Second-Harmonic Generation to Evaluate Myosin Structure," advised by **Karissa, Tilbury**
- **Coulter Morrill**, Kinesiology & Exercise Science, "The Integration of Virtual Reality into Speech Therapy Practices," advised by **Nicholas Giudice**
- **Michaela Murray**, Ecology and Environmental Science, "Sustainability in the Maine Wine Industry," advised by **Mark Haggerty**
- **Emma Newcomb**, Marine Science, "Anthropogenic effects on marine mammal strandings and call reports in the Gulf of Maine from 2010 to 2015," advised by **Kristina Cammen**
- **Sarah Nichols**, Microbiology, "Investigating the Antiviral Effects of Hemocyanin Derived from *Homo americanus*," advised by **Melissa Maginnis**
- **Olivia Reese**, Communication and Journalism, "Tweets, Trust, and Pixie Dust: Understanding credibility in the age of social media," advised by **Judith Rosenbaum-Andre**
- **David Rondeau**, Biology, "Carboxymethyl Cellulose Based Hydrogels for Anti-Biofouling in Marine Environments," advised by **William Gramlich**
- **Meghan Royle**, Biology, "The effects of environmental lighting on circadian rhythm entrainment and voluntary alcohol intake: possible role for melanopsin signaling?" advised by **Alan Rosenwasser**
- **Renee Savoie**, Biology, "Using Categories as a Tool for Novel Learning," advised by **Shawn Ell**
- **Bradley N Smith**, Mechanical Engineering, "Characterizing Root-Anchorage Forces in Selected Weeds and Crops," advised by **Eric Gallandt**
- **Cassandra Steele**, Zoology, "Impacts of Invasive Plant Species on Mosquito Larvae Survival," advised by **Allison Gardner**
- **Tiffany Tanner**, History & International Affairs, "Trajectory of Baluchistan Insurgency," advised by **Asif Nawaz**
- **Thilee Yost**, Political Science, "The Mobilization Efforts of Hmong Americans in St. Paul, MN and Fresno, CA," advised by **Amy Fried**

2018-2019 Maine Space Grant Consortium (MSGC) Student Fellowships

The University of Maine's Center for Undergraduate Research (CUGR) is pleased to announce the 2018-2019 Graduate and Undergraduate Maine Space Grant Consortium (MSGC) Student Fellowships. During the 2018-2019 academic year 7 undergraduate student projects and 4 graduate students were selected for funding through the MSGC. The purpose of the MSGC fellowship and scholarship programs at UMaine is to provide research opportunities to undergraduate and graduate students in Aerospace Technology, SpaceScience, Earth Science, Human Exploration/Space Development, and other science- or engineering-related fields.

The focus of the funded projects must be aligned with the research priorities of NASA's Earth and space science strategic enterprises. The selected graduate students were awarded \$6,000 each and the selected undergraduate projects were awarded \$1,100 each.

2018-19 MSGC Graduate Fellowship Awards

(Student Name, Academic Program, Project Title, Faculty Mentor)

1. **Alison Chase**, Oceanography, advised by Emmanuel Boss and Dr. Lee Karp-Boss
2. **John Goulet**, Engineering Physics, advised by C. Thomas Hess
3. **Alex Koch**, Physics and Astronomy, advised by David Batuski
4. **Kayla Marquis**, Biomedical Engineering, advised by Caitlin Howell

2018-19 MSGC Undergraduate Fellowship Awards

(Student Name, Academic Program, Project Title, Faculty Mentor)

1. **Bradley Butler**, Biomedical Engineering, "Applying Observational Virtual Reality to Improve Student Learning of Human Musculature", advised by Nicholas Giudice
2. **Ethan J Poland**, Mechanical Engineering, "Biomass Enabled Three-dimensional Porous Nanostructures for High-performance Supercapacitors", advised by Yingchao Yang
3. **Benjamin Thompson**, Engineering Physics, "Nonlinear Heat Conduction Theory", advised by Aaron Joy
4. **Jonathan Roman Bland**, Electrical Engineering Technology, "Augmented Coffee Experience", advised by Nimesha Ranasinghe
5. **Matthew S. Webber**, Chemical Engineering, "Using Copper(I) and Silver(I) Iodide Salts in the Detection of Aqueous Amino Acids Histidine and Cysteine", advised by Thomas Schwartz



2018-2020 CUGR Faculty Fellow Undergraduate Research Assistants

The University of Maine's Center for Undergraduate Research (CUGR) is pleased to announce the undergraduate students who have been chosen as research assistants for the 2018-2020 Faculty Fellow Cohorts. Each Faculty Fellow selected an undergraduate student research assistant and were awarded \$1,100 each to use a stipend pay.

Faculty Fellow Undergraduate Research Assistants

(Undergraduate student Research Assistant Name, College, Faculty Adviser Name)

- [Charles Alexandre-Roy](#), NSFA, advised by Ek Han Tan
- [Madison Bangs](#), NFSA, advised by Pauline Kamath
- [Charlize Castro](#), CLAS, advised by Michael Kienzler
- [Alyson East](#), NFSA, advised by Kate Ruskin
- [Emily Gagne](#), NFSA, advised by Danielle Levesque
- [Ella Glatter](#), NFSA, advised by Jennifer Perry
- [Mitchell Harling](#), COE, advised by Karissa Tilbury
- [Aldous Hofmann](#), NFSA, advised by Yongijang Zhang
- [Emily LeClair](#), COE, advised by Caitlin Howell
- [Emma Paradie](#), NFSA, advised by Kristy Townsend
- [Jenna Paul](#), EDHD, advised by Christopher Nightingale
- [Elizabeth Piotrowski](#), NSFA, advised by Kristina Cammen
- [Andrea Ramirez](#), NFSA, advised by Nishad Jayasundara
- [Nathan Sprangers](#), CLAS, advised by Phillip Edelman
- [Jack Stanton](#), NFSA, advised by Erik Blomberg
- [Benjamin Williams](#), Honors, advised by Sally Molloy

US-Spain

International Research Experience for Graduate and Undergraduate Students in Electrified and Autonomous Transportation

The Electrical and Computer Engineering Department at the UNIV of Maryland and Technical UNIV of Madrid offer undergraduate and graduate students an exceptional opportunity to participate in pioneering research on Electrified and Autonomous Transportation systems with faculty mentors from University of Maryland and Technical University of Madrid. This program is funded by the National Science Foundation (NSF).

Program Dates: June 4, 2019 - July 27, 2019

Application deadline: **March 1st, 2019**

Apply Here: [Apply Here](#)

More Resources: [Admission Criteria - Section 4](#)

Program Highlights:

- \$5,000 stipend, room and board, and travel allowance.
- Tours of local industries and laboratories in Madrid, Spain.
- Inspirational technical and professional development seminars.
- One-on-one training and mentoring by national and international faculty members.
- Opportunities to publish and present research outcomes.
- Build a strong collegial community between participant students, and involved faculty.

For additional information please contact:

Alireza Khaligh, Ph.D.
University of Maryland
Phone: +1 (301) 405-8985
EML: khaligh@ece.umd.edu
URL: <https://khaligh.ece.umd.edu/>



[For More Information](#)



2019 CFRU/CUGR UNDERGRADUATE RESEARCH SUMMER FELLOWSHIP APPLICATION

Call for proposals:

The Cooperative Forestry Research Unit (CFRU) and the Center for Undergraduate Research (CUGR) are pleased to announce the Undergraduate Research Summer Fellowship 'Call for Proposals'. This program will support undergraduate student engagement in faculty-mentored research on existing CFRU funded projects. Three fellowships will be awarded for the summer of 2019 on a competitive basis; the competition is open to all UMaine undergraduate students from all majors. Each fellowship provides up to \$3,100 in wage support for one student to conduct faculty-mentored research in support of an existing CFRU funded project. The proposal will be reviewed for clarity of objectives, importance to the project, alignment within the project, and an indication of the project's feasibility.

Eligibility Criteria

Any undergraduate student currently enrolled in a degree program at the University of Maine is eligible. Proposals are submitted by a faculty mentor who is listed as a PI or collaborator on a currently funded CFRU project.

Application Guidelines

1. Applicants will need to describe the proposed student research project and how it adds value to the parent CFRU project.
2. Student Award Recipients must submit a final report to the CFRU Program Leader by September 30th, 2019.
3. All student recipients are required to submit an abstract and present the product of their research at the 5th Annual UMaine Student Symposium in the Spring of 2020.

Deadline and decisions

To apply for a fellowship(s) please send a **one-page** undergraduate student research proposal to brian.roth@maine.edu no later than **February 22nd, 2019**. Applications will be reviewed by a panel consisting of the CFRU Program Leader, CRSF Director and the CFRU Executive Committee. Final decisions on awards will be announced no later than **March 1st, 2019**.

For More Information:

Brian Roth
CFRU Program Leader
brian.roth@maine.edu
(207) 944-1392



STUART KESTENBUAM
Maine Poet Laureate



"Stuart Kestenbaum writes the kind of poems I love to read, heartfelt responses to the privilege of having been given a life. No hidden agendas here, no theories to espouse, nothing but life, pure life, set down with craft and love."

- Former US Poet Laureate
Ted Kooser



#UMSS19

2019 UM STUDENT SYMPOSIUM
KEYNOTE SPEAKER

We are pleased to announce this years' Maine Poet Laureate, [Stuart Kestenbaum](#), will be the KeyNote Speaker at the 2019 UM Student Symposium. We invite everyone to come hear him speak from 4:00-4:30PM on April 10, 2019 at the Cross Insurance Center in Bangor!

For more information on how to participate or attend the event please go to: umss19.umaine.edu

UM STUDENT SYMPOSIUM
CALL FOR JUDGES

We need your help. Any UM faculty, staff, or graduate student are invited to judge graduate and undergraduate student presentations on at the 4th Annual UM Student Symposium.

Judge and Volunteer Sign-up Form
www.tinyurl.com/umss19vol



APRIL 10, 2019
Cross Insurance Center in Bangor

Become a **UMAINE RESEARCH** Scholar!



2018-2019 CUGR Advisory Committee

- **Ali Abedi** – Professor of Electrical and Computer Engineering, COE, CUGR Director
- **Francois Amar** – Dean, Honors College (Ex-officio member)
- **Judith Andre-Rosenbaum** – Assistant Professor of Communication & Journalism
- **Jim Artesani** – Associate Dean of Graduate Education, Research, and Outreach, EDHD
- **Laura Artesani** – Associate Professor, Music Education Coordinator
- **George Criner** – Associate Dean, NFSA
- **Sally Dixon** – Honors Preceptor of Genomics, NFSA
- **Deborah Eremita** – Assistant Professor of Nursing & Undergraduate Program Coordinator
- **Sara Imam** – Student Representative
- **Lee Karp-Boss** – Associate Professor, marine Sciences
- **Jean MacRae** – Associated Professor of Civil and Environmental Engineering
- **Michael Robbins** – Associate Dean, CLAS
- **Patricia Poirier** – Associate Professor of Nursing
- **Stefano Tijerina** – Adjunct Assistant Professor, Political Science

CUGR Staff

- **Ali Abedi** - Assistant Vice President for Research
- **Alexandria Jesiolowski** - Administrative Specialist
- **Colby Ross** - Student Media Assistant
- **Jaymie Pratl** - Student Administrative Aid

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