



Graduate Student Government

Newsletter- Spring 2016

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President's Message

Greetings from the President of the Graduate Student Government!

I wanted to take this opportunity to provide some information for those of you who don't know exactly what the Graduate Student Government is, or what we do.

Who we are

We are a collection of student senators from every graduate degree-granting program at the University of Maine. Programs are eligible to have one senator for every 50 students enrolled in their degree program. The senate is overseen by an executive committee, elected by the senate.

What we do

In addition to representing all graduate students to the University's upper administration and Board of Trustees, we offer a wide variety of services directly to graduate students. These include negotiating the TA/GA health insurance plans each year and hosting many professional development and health and wellbeing workshops available for free to all grad students. Perhaps the most impactful thing we do is providing funding directly to graduate students through our Grants program. Each year we return around \$100,000 dollars back to grad students through our individual and club based grant program. To date we have provided over \$1,000,000 back to the graduate students of the University of Maine.



Welcome continued on page 2

What's happening now

This year we are excited to announce a few new initiatives aimed at making the GSG more impactful and sustainable over the long term.

Regalia Rental Program:

We are happy to announce that the GSG has purchased PhD regalia that it will be renting out at reduced cost to help ensure that financial barriers will not prevent doctoral graduates from being recognized at either the Graduate Recognition or "Hooding" Ceremony, or Commencement.

New Fundraising Strategy.

As a non-profit, the GSG has a responsibility to long-term financial sustainability. To that end, we are in the process of implementing a new fundraising strategy that capitalizes on collaboration with graduate programs, departments and institutes across campus.

Research Partnership with CUGR

This year we are pleased to announce the combination of the Graduate Research Exposition and the Center for Undergraduate Research Exposition. This newly combined event will provide many opportunities for both graduate and undergraduate researchers to interface with both the University and state-wide businesses and organizations.

With these exciting new items keeping us busy, I did want to remind every graduate student that the GSG is here to serve you in all of your academic and professional development pursuits during your time at UMaine. Please do not hesitate to reach out to us if there is anything we can do to help you or your degree program. We want to ensure that the graduate experience for *all* UMaine graduate students is as fulfilling as possible!

Sam Belknap
President, Graduate Student Government

Treasurer's Update

By Sky Heller, GSG Treasurer

Our budget this year is down over \$3K from last year (FY 14-15) and \$15.5K from the FY 13-14 budget. Our spending so far is currently almost \$17K under budget.

This year we've paid out almost \$76K in direct grants to graduate students and just over \$9K in grants to clubs. Nora and Megan have only spent just over \$1.7K of their budget of \$4K.

Student Research Symposium

By Jack McLachlan, GSG Vice President

Every year since 1999, the Graduate Student Government has organized an annual research exposition, familiarly known as the “Grad Expo.” This year, the Graduate Student Government has teamed up with the Center for Undergraduate Research (CUGR) to organize the 2016 UMaine Graduate and Undergraduate Student Research Symposium. **The event will be held on April 27th at the Cross Insurance Center in downtown Bangor from 8am to 5pm.**

One of the original goals of the Grad Expo was to offer graduate students a chance to share their work in a professional setting and practice their presentation skills in a friendly and supportive milieu. In an effort to make this event as beneficial as possible for presenting students, the GSG and CUGR events were combined to create an event larger in scale than both groups have previously experienced. The joint Student Research Symposium, with its almost 400 student participants and larger venue, has attracted interest from State legislators, Maine businesses and research concerns, local K-12 schools, and the media—all of whom will be in attendance at the Symposium.

This year will be the 17th year that the Graduate Student Government has organized an event to showcase the excellent work conducted by UMaine graduate students. Holding the event on a larger scale, in a more public venue like the Cross Insurance Center, will ensure that graduate students will be afforded a better opportunity to present their work to potential employers and, perhaps more importantly, the Maine communities that stand to benefit from their research.

We hope you will come down to the Symposium to support your fellow graduate students who will be presenting their work in a variety of formats. Transportation to and from the event will be provided at no charge all day, through a deal the symposium organizers have made with TipWhip—a ride sharing service focused on the UMaine student community.

For further information, visit the website: <https://umaine.edu/research/symposium/>

Spring 2016 GSG Grants Cycle

By Erin Carter, GSG Grants Officer

I am pleased to report that the Graduate Student Government Grants Program has just recently finished the Spring 2016 Grants Cycle to close out another year. This year, the GSG received 222 applications from graduate students across numerous disciplines and were able to fund 144 (64.9%) of these applications and disperse approximately \$76,000 to a variety of departments. Both cycles were exciting and competitive, particularly in the Travel to Present category, as nearly 60% of the applications we received this year were for travel grants.

Grants continued on pages 4 & 5

The Grants Program welcomed back veteran grant readers, but also recruited a high number of new grant readers as well. One of my goals as Grants Officer was to encourage and welcome new grant readers, as many applicants note that reading grants is remarkably helpful for future cycles. I hope that this trend continues, and I would love to see veteran readers continue to review grants as well.

Department	Submitted	Funded
School of Marine Sciences	25	19
Ecology and Environmental Sciences	23	15
Psychology	15	15
School of Earth and Climate Sciences	19	13
Food Science and Nutrition	17	10
School of Forest Resources	16	10
History	11	8
Wildlife, Fisheries, and Conservation	10	8
School of Biology and Ecology	8	6
Graduate School of Biomedical Science and Engineering	9	5
Climate Change Institute	7	4
Communication and Journalism	7	4
Anthropology	4	3
Computing and Information Sciences	3	3
Masters of Science in Teaching	5	3
Plant, Soil, and Environmental Sciences	4	3
Electrical and Computer Engineering	5	2
Maine Business School	5	2
Mechanical Engineering	2	2
Molecular and Biomedical Sciences	2	2
School of Economics	2	2
Chemical and Biological Engineering	1	1
Chemistry	1	1
Civil and Environmental Engineering	3	1
English	6	1
Physics and Astronomy	2	1
Animal and Veterinary Sciences	1	0
Counselor Education	1	0
Education	4	0
Intermedia	4	0
TOTAL	222	144

This year, the School of Marine Sciences applied for and received the most number of grants, accounting for over 13% of all grants awarded, followed by Ecology and Environmental Sciences and Psychology. In particular, I would like to congratulate the Psychology Department on their meritorious grants record for the year. A total of 15 grants were submitted by their department, and all grants were at least partially funded. Additionally, all grants submitted by Computing and Information Sciences, Molecular and Biomedical Sciences, School of Economics, Chemical and Biological Engineering, Chemistry, and Mechanical Engineering were partially funded.

In addition to our individual grants program, the GSG has also awarded over \$6,000 to Clubs and Organizations this year and will award nearly \$3,500 more in September. The GSG recognized and welcomed the

Graduate Business Association, the National Association of Women MBAs, UMaine Women in Academia, Student Organization for Society and Natural Resources, the Institute of Electrical and Electronics Engineers, and most recently, the International Network on Offshore Renewable Energy Maine Chapter. Four of these organizations applied for and received GSG funding during this academic year. We are excited to recognize these organizations that work diligently to foster academic and professional development of graduate students.

In regards to our Grants Program, I am pleased to announce that there are a couple of new changes that will be effective come this fall. By popular demand of grant readers, the Proposed Use of Funds will now be worth 5 points, and Cohesiveness and Style will now be worth 10 points. After receiving input from applicants, readers, and executive committee members, we have also amended our Grant Reader Instructions to include descriptions of each category and

guidance on how to evaluate and score each criterion. The aim of the latter change is to ease new readers into the process of grant reading and to increase transparency and consistency across scoring. We have also rewritten instructions for clubs and organizations to help create a more concrete application process and to ease transition periods from one grants officer to the next. It is my hope that these changes will benefit applicants and readers alike during future grants cycles and ultimately encourage more graduate students to participate in our Grants Program.

Student Spotlights



Lindsey Avery Fitzsimons

Lindsey is a PhD student here at the University of Maine in the Graduate School of Biomedical Science and Engineering where she is pursuing her degree in Biomedical Science. As a first year PhD student, the GSBSE rotates her to several research institutions around Maine. During her first term, she had the opportunity to work at the Maine Medical Center Research Institute in Scarborough, Maine. At her current location for her second rotation term, she has had the pleasure to work with Dr. Kerry Tucker at the College of Osteopathic Medicine at the University of New England.

Although Lindsey is deeply involved in both courses for her GSBSE first-year program, and also performing full-time lab work in Dr. Tucker's research laboratory, she has also devoted her skills and professional background in human anatomy and physiology to the teaching of dissection-based anatomy in the course Osteopathic Clinical Skills. Lindsey joins Dr. Tucker in his dissection lab, interacting with the medical students at the tables with their cadavers. She floats from table to table, showing students what they need to do that day for their dissection, holding spontaneous table-side lectures, and holding their hands as needed in this very stressful first year of medical school. This is entirely voluntary on her part. The University of New England has enough faculty and advanced medical students who also teach to cover the class bases, so this is just a demonstration of Lindsey's commitment to teaching, mentoring, and general collegial behavior.

Lindsey plans on returning to the University of Maine in Orono for her last rotation term this summer. Her department will be very excited for her to return to the flagship institute and will be looking forward to her high level of dedication. They hope she enjoys her time here; she would have had the opportunity to partake in three fields of research over the past year where afterwards, she will have to choose which field of study to pursue for her PhD.

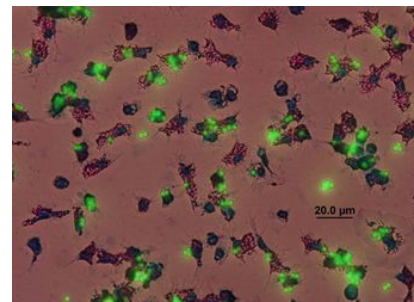
Brian Preziosi



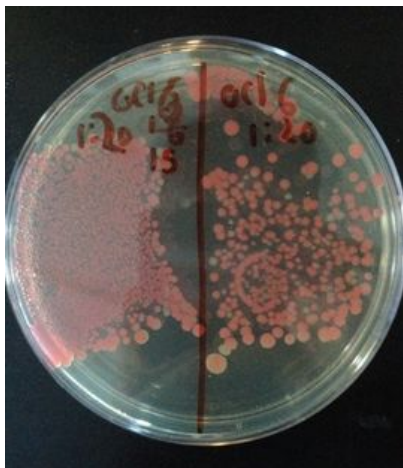
Brian Preziosi with a large razor clam.

As a PhD student in the Marine Bio-Resources program working under Dr. Bowden, Brian Preziosi has found boundless opportunities studying the health of the North Atlantic razor clam, *Ensis directus*. The razor clam is currently being grown at the UMaine's Darling Marine Center because it is a potential candidate for commercial aquaculture operations in Maine. Little research has been done on this species and thus a baseline for the health parameters of the species is necessary to monitor the health of stocks. After obtaining a year-long baseline on a variety of health parameters, Preziosi plans to look at the effects of temperature and pH on the immune-capacity of razor clams.

In order to start his research on the razor clam's immune capacity, Preziosi needed to classify their blood cells (called hemocytes). He did this using transmission electron microscopy and traditional light microscopy. After identifying all the cell types present in this species he was able to carry out assays using light microscopy such as phagocytosis and differential cell counts. The ability of the hemocytes to "eat" or phagocytose fluorescent green beads. Phagocytosis is the clam's primary cellular defense against bacteria that has gotten into the hemolymph (invertebrate blood) and thus, a commonly measured immune parameter. Another way Preziosi measures the immune-capacity of the clams is by measuring their ability to clear the bacterium *Vibrio anguillarum* from their hemolymph. The bacteria strain (developed by Dr. Singer) has been modified with a plasmid so that it both glows red and is resistant to ampicillin. This allows him to inject a set amount of bacteria into the clams and easily identify the remaining bacteria 24 hours later by growing the contents of their hemolymph on agar plates with ampicillin. The ampicillin halts the growth of all the other bacteria normally found in the clam and thus makes counting the *V. anguillarum* colonies quick and easy. These are just some of assays that can be used to assess the immune status of clams.



Razor clam hemocytes phagocytosing fluorescent latex beads.



Preziosi also seeks to educate more people on razor clams. Everyone is very familiar with Maine's soft and hard-shelled clams, he says, however he has met many a person who has never heard of a razor clam. Razor clams are difficult to acquire (they are only available once a month during the negative low tides) and are thus not a common site at the grocery store. Aquaculture operations may help remedy this problem by making the species more available to the general consumer.

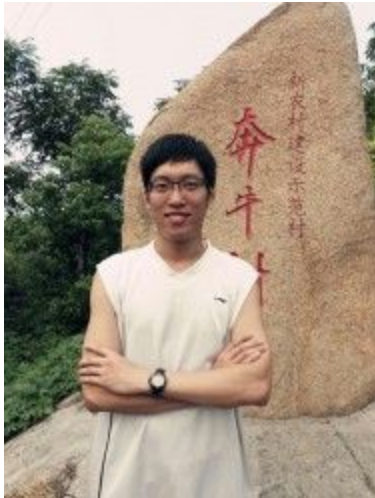
A strain of the bacteria *Vibrio anguillarum* (that has been modified with a plasmid to appear red) grown on agar with ampicillin.

David Holomakoff

David Holomakoff is pursuing a Master's of Science degree in biological engineering under the guidance of Professor Michael Mason. He is currently researching the use of nano-cellulose for orthopedic implantations with the Maine Cancer Foundation. In addition to his exceptional work as a graduate researcher, he has become an integral part of the department as a teaching assistant for the biological engineering undergraduate courses. Each semester, David works with upwards of 40 students. He goes out of his way to get to know each student individually; advising them in the classroom, laboratory, as well as in life. David has a cheerfulness about him that has a way of lightening up any room he enters. The department looks forward to working with David over the next year and wish him continued success as he pursues a career in biomedical orthopedics.



Lu Wang



Lu Wang is working toward his PhD in Cellulose Nanofibrils Reinforced Plastics. He is currently working as a graduate research assistant at the School of Forest Resource & Advanced Structures and Composites Center at the university. In his research, he is utilizing nature nanofibers to reinforce plastics made by 3D printing. This will expand the scope of the materials used in 3DP, and the resulting products can be used in industries like construction, automobile, electronics, biomedical, and packaging.

This newsletter was compiled by:

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