The Department of Biology
at The College at Brockport,
State University of New York

Lennon Hall, 350 New Campus Drive, Brockport, NY 14420

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The State of the Department

Congratulations on completing another semester at Brockport. If you haven’t heard the news, the college and the department will have new additions next Fall. The college is in the process of hiring a new Provost to replace Dr. Anne Huot who left at the end of the last academic year. The department is also in the midst of a search for a new faculty position. The thought is that this new hire may be able to serve as a bridge for a new interdisciplinary minor between Biology and Computer Science in the field of Bioinformatics. At the very least, the new hire will broaden the mission of the department and bring computer-aided modeling and data mining to the students and faculty in the department. The courses and research opportunities offered by the new hire will expand possible career options to our majors as well as provide new directions of research for faculty.

I would also like to recognize some of the successes of our Biology students this semester. As you keep reading, you will learn about the students who recently presented at the Rochester Academy of Sciences 40th Annual Paper Session. Additionally, several students were chosen by the college to present their research at the annual National Conference on Undergraduate Research held this year at the Univ. of Kentucky this April. The department is also growing its Honors Program and Combined BS/MS Degree Program with new acceptances. Finally, three Biology majors received the prestigious Elizabeth Bretton Scholarships.

For those of you graduating this December, The Biology Department wishes you success in your future endeavors. For the continuing students, have a happy and restful holiday season and we’ll see you in late January.

-Dr. Rey Sia,
Assoc. Prof & Chair

Bretton Scholarship Recipients for the Fall of 2013 are
Amber Althrieth, Kyle McAtee & Kathryn Wershing
John Bateman is a graduate student in the Department of Environmental Science and Biology. He is a second-year teaching assistant and helps instruct labs for BIO-111 (Principles of Biology) and BIO-221 (Survey of A&P). “What I like most about being a teaching assistant for the Department of Biology is that I have the opportunity to teach undergraduates early on in their academic career. I take great pride in encouraging good study habits to new students that will help them be successful in their academics during their time at Brockport. I also enjoy having the opportunity to teach students how to think, speak, and write as scientists.”

Sarah Austin is a first year graduate student in the Department of Biology. She is currently teaching BIO221 (Survey of A&P) and BIO321 (A&P I). “Even though being a graduate assistant, and taking classes takes up a lot of my time, it keeps me busy enough where I am always on my feet, and helps me manage my time. Because I can manage my time efficiently, I am able to have another job outside of being a graduate assistant. I also have plenty of time to study, and have free time as well. I also enjoy having fewer classes per semester. This way I can concentrate my full attention on one or two classes and excel in both. Not only do I enjoy teaching students, but I have gained many skills other than mastering the course I teach. I am now a better speaker and am more confident talking in front of others.”

The Rochester Academy of Science Meeting was held this year on November 9 at Nazareth College. The Department was represented by Dr. Rey Sia’s lab and Dr. Laurie Cook’s lab. Congratulations to all!
Dr. Laurie Cook

The lab has been very busy this past summer and fall semester training new research students and finalizing revisions for a manuscript. Chris Tomeny, Nico Covello, Joe Amorese and Sidnee McDonald worked with me during the months of July and August. In the fall semester John Fitzsimmons and Brian Heiss joined the crew. Derek Bernacki also returned to the lab from his cross-country climbing adventures! Sidnee McDonald ('17) and Joe Amorese ('15) were awarded a paid STEM fellowship by the SUNY Research Foundation to perform research in my laboratory for 8 weeks this past summer.

Our lab is working on determining the roles of G protein-coupled receptor kinases in the regulation of MCH receptor signaling using fluorescence microscopy to measure receptor trafficking. The lab submitted an abstract to the American Society of Cell Biology titled “G Protein-Coupled Receptor Kinases Regulate the Activation of ERK Signaling by Melanin-concentrating Hormone” by Andrew Goodspeed, Chris Tomeny, Nico Covello and Laurie B. Cook. I will be presenting it this December at the Meeting in New Orleans.

Our article entitled “Analyzing the Role of Receptor Internalization in the Regulation of Melanin-concentrating Hormone Signaling” by Jay I Moden, Katrina Haude, Robert Carroll, Andrew Goodspeed and Laurie B. Cook was recently published in the International Journal of Endocrinology. All authors (except me of course) were Brockport students (Jay and Andrew M.S. graduates, Katrina and Robert were B.S. graduates).

Dr. Rey Sia

Hugo Avalos was accepted into the Univ. of Rochester Medical Center’s Summer Undergraduate Research Fellowship (SURF) program. This program is committed to enhancing the preparation of candidates for careers in the health professions, research and the biomedical sciences who have a demonstrated vision and commitment to improving the health status of diverse patient populations via patient care, research and/or teaching. This program included an MCAT prep course as well as intensive, high-level biomedical research. Hugo presented his Biology Honors Program thesis research performed in my lab last year at UB at the McNair National Summer Research Conference on Friday July, 12th.

Matthew Luther received a Brockport Alumni Summer Research Award to carry out research on mitochondrial genome stability in my lab this past summer. Research students, Amber Altrieth and Kathryn Wershing received the Elizabeth More Bretton Scholarship which provides a monetary award for a student that shows promise of attending medical school. Christopher Prevost, Deanna Pedeville, and Emily Whiteside presented at the annual Rochester Academy of Sciences Fall Paper Session at Nazareth College.

Allyson Burkhart and Amber Blidy joined my lab as members of the Combined BS/MS Degree Program.

And finally, congratulations to Laura Pankowski, who did a Biology Honors thesis in my lab last year. She just received word that she has been accepted to Harding University’s Physicians Assistant Program. She is still waiting to hear from 4 other schools.
Dr. Huey Hing

(The goal of the lab of Huey Hing is to understand how the sense of smell develops using Drosophila as a model. An recent exciting discovery of the lab is that mutation of the \( \textit{wnt5} \) gene completely abolished the ability of Drosophila to perceive carbon dioxide (CO2). In contrast to wild-type animals, which strongly avoided CO2, \( \textit{wnt5} \) mutants were equally attracted to CO2 as to air. Previous studies from the lab have shown that the \( \textit{wnt5} \) mutant has severe disruption of the neuronal wiring of the olfactory system. Kathryn Yaeger of the lab will continue experiments, using the dipstick assay, to investigate the ability of the \( \textit{wnt5} \) mutant to perceive other odorants, such as benzaldehyde (almond flavor) & ethyl acetate (banana flavor).

Dr. Bernardo Ortega

After completing his first year at Brockport, Dr. Ortega’s lab already houses a prolific mice colony that keeps independent research students in his lab, Emily and Matthew, very busy. One of his main goals for the spring semester is to use this resource in order to develop new labs for his Human Physiology course.

Dr. Adam Rich

A lot is happening in the GutLab. I just returned from the Zebrafish for Personalized/ Precision Medicine Conference in Toronto. The latest medicine uses an ‘omics’ approach to healthcare which promises better and more specific disease diagnoses. Funding for the research lab is in place for 2 years because we were successful with a New York State Grant funded by the SUNY Research Foundation. We are fortunate to collaborate with Dr Jeffery Amack at Upstate Medical. Amack’s lab will construct 4 transgenic zebrafish which will help identify the physiological roles for Anoctamin 1 and Anoctamin 2. This is impossible using mice because anoctamin 1 knockout animals die near birth, and an anoctamin 2 knockout mouse is unavailable. Dr Amack will use the transgenic animals to determine the role for anoctamins in left right symmetry during development. Our lab will examine the effects on gastrointestinal motility. Cyrus Salehi is working, feverishly, to complete his MS thesis, Tori Cenzi and Alex Viavattine are trying to gavage zebrafish larvae, and a new lab member, Clayton Brady is beginning a brand new project examining the effects of stress in gastrointestinal motility patterns in zebrafish. Last but not least, the Systems Physiology class is reopening the story on Kit ligand b and ICC development. They are learning morpholino knockdown, confocal imaging, and GI transit assays, and working hard on their communication.
Dr. Stuart Tsubota

Amanda Courtney has joined the lab this fall as an M.S. thesis student. Stuart Tsubota performed with BIO-DANCE in Anomaly at the RBSC Strasenburgh Planetarium as part of the Rochester Fringe Festival. He also performed with BIO-DANCE in the Meliora Dance Project as part of the Meliora Weekend at the University of Rochester and at the RMSC at their fundraiser, INNOVATION CELEBRATION. Stuart is looking forward to his Sabbatical next semester.

Dr. Michel Pelletier

It has been a very busy last few months. First of all, my lab published a manuscript entitled "Identification of a novel lipin homologue from the parasitic protozoan Trypanosoma brucei" in the journal BMC Microbiology. Two graduate students, Alyssa Frainier and Dominic Munini, as well as 3 undergraduate students, Jenna Wiemer, Amber Karpie, and Jeff Sattora were instrumental in obtaining data for the manuscript. I have also submitted a manuscript entitled "Identification of the microbial population found in water sources in and around San Salvador Island, Bahamas" to the International Journal of Bahamian Studies. Although my main interest is the study of Trypanosoma brucei, I still like to take on projects that deal more with bacteriological topics.

As I do every Fall semester, I have been teaching Microbiology (BIO323) to 120 students (mostly nursing intent). I am also preparing and revamping the two upper-division class that I teach in the Spring. So if you are registered for either Immunology(BIO414/514) or General Microbiology (BIO423/643). I am very confident that you will enjoy these 2 classes.

My lab has also been buzzing with a lot of activity this semester. A total of 8 undergraduate students are independent research this Fall. They are (in alphabetical order): Jaclyn Beckingham, Philip Bellomio, Gabriel Botana, Mackenzie Meyer, Christopher Peeck, Stephanie Schmidt, Gina Tascione, and Rebecca Tobin. I would like to wish good luck and success to Jaclyn and Gabriel who are both graduating in December. I would also like to welcome two new graduate students to my lab: Caitlyne Kocik and William Bigham.

Biology Offers a Combined B.S. Plus M.S. Degree in 5 Years

In the Spring semester of your Junior Year, you are eligible to apply for this new opportunity. If you are considering graduate work, we offer well-qualified students with a 3.25 GPA or higher the chance to get an accelerated Masters degree in one year rather than the usual two years. If you are interested, please contact Dr. Laurie Cook, 3+2 Program Coordinator.
Student Successes and Alumni Updates

Laura Pankowski (M.S. ’13) has been accepted to the Physician Assistant program at Harding University.

Andrew Goodspeed (B.S. ’12, M.S. ’13) is in his first year of his PhD program in the Pharmacology department at UC Denver.

Tiffany (Telarico) Caza (B.S. ’06) just finished medical school requirements and is interviewing for residency in pathology.

Mac Cerasaro (B. S. ’11) is in his 3rd year of medical school, doing clerkships in Ventura, CA & trying to decide on residencies and such.

Beth Delorme-Axford (B. S. ’06) is currently a postdoc at University of Pittsburgh in her thesis lab, looking for a postdoc, and mom to Nathan (born August 30). She also has had several recent publications including in PNAS, Journal of Virology, and Autophagy.

Trish Steiner (B. S. ’14) is at Rochester General in the Medical Technology program and enjoying it!

Honors and Awards

Amber Althrieth, Kyle McAtee & Kathryn Wershing received the Bretton Scholarship.

Sidnee McDonald & Joe Amorese were awarded the STEM fellowship for Summer Research from SUNY.

Hugo Avalos was awarded the Summer Undergraduate Research Fellowship by the University of Rochester.

Matthew Luther received the Brockport Alumni Summer Research.

Congratulations to all of our award recipients! You set a wonderful example for our students!

Call for Updates!

If you are a current or former Brockport Biology Student, we want to hear about you! Please send us updates on your career, education, etc. to include in our Departmental Newsletter!
A Word from the President of the Biology Honors Club

Since my sophomore year, I have been working in the research labs of Dr. Pelletier, where we are investigating possible drug targets for African Sleeping Disease. This horrific disease kills 20,000 humans and 3 million cattle a year in Sub-Saharan Africa. It is transmitted by the simple bite of a tse fly and if untreated, death is certain. There is no vaccine to protect against it and the current medication is arsenic based killing 20 percent of the patients who take it. The United States has tripled commerce with the Sub-Sahara in the last 10 years, so this problem that seems a half a world away, is getting uncomfortably closer.

Here, in the research labs at Brockport, biology students have incredible opportunities to work on solving real world problems by becoming members of Biology Honors Club. Talk to your friends attending other colleges and universities and you’ll quickly find out that these plum research assignments are typically reserved for upperclassman. By becoming a member of our club, you can find out early if research is a possible career option, and the experience looks impressive on resumes and job applications. In addition to research, you will also be asked do some fundraising for not for-profits and write a thesis (don’t worry you’ll get plenty of support). You can check out the other research projects by going the biology department home page and reviewing the work of each professor.

To become a member, you will have to maintain a prerequisite GPA and fill out a simple application available in the biology department office. If you have any questions, please don’t hesitate to contact me. If you see us selling T-shirts or Dominos Pizza Passes in Lennon, stop by and say hi and support your peers.

- Mackenzie Meyer, President, Biology Honors

Help Support the Next Generation of Biology Students

Dear Alumni,

We are asking you to contribute to our Department and to help us provide research experiences for students. A research experience contributes to undergraduate and graduate education by providing hands-on experience with state of the art equipment, and an opportunity to work with faculty mentors directly. These skills are fundamental to success, and the research experience provides a competitive edge. Biology faculty are active, working with students, and presenting results at scientific meetings with students. Not surprisingly research is expensive and Biology faculty work hard to raise money for research. The College at Brockport is doing a great job in spite of funding cuts, and has found the funding to support equipment repair, equipment purchases, and support for summer research internships.

We ask that you consider donating to The College at Brockport, and specifically to the Biology Department. Your support will help us to help students. The faculty in the Department of Biology, and the College at Brockport, are committed to student excellence and student success. Donations of any amount will help us to provide significant and meaningful research experiences for students. Please consider helping to support our students’ research opportunities. For more information please contact Dr. Stuart Tsubota (stsubota@brockport.edu) or by making an online monetary gift by visiting the College’s Giving Website below, making sure that your gift is designated for use by The Biology Department in the appropriate box.

https://www.brockport.edu/giving/online/gift.php

-The Biology Faculty