Biology Newsletter: May 2016

The College at Brockport
Congratulations to all of the graduating Biology majors and minors and Medical Technology majors! The end of an academic year always elicits a mixture of feelings. A feeling of sadness occurs when graduating students say goodbye to friends, not knowing when they will see each other again. Faculty who have developed close relationships with their graduating students also have the same feeling. However, this is tempered with happiness and excitement. Graduating students are looking forward to new career and life adventures. Continuing students, faculty, and staff are looking forward to the summer break. We, the faculty and staff, also feel proud to play some part in preparing our graduating students to enjoy life after Brockport. The Dept. of Biology wishes you every success as you venture on.

The department has two academic changes to look forward to in Fall 2016. The department will offer a Biology Teachers Track as part of the Biology major. This track is designed specifically for students interested in pursuing a career in middle school and high school teaching. Additionally, the department will also offer a new combined degree in partnership with the Univ. of Buffalo School of Pharmacy. The B.S./PharmD major is a seven-year program that results in both a Bachelors in Science and a Doctor in Pharmacy. These degree options will add to the number of other degrees the department already offers.

In closing, I would like to congratulate Nikole Van Wie for receiving the SUNY Chancellor's Award. The SUNY Chancellor’s Award for Student Excellence recognizes outstanding students who have integrated academic excellence with other aspects of their lives, which may include leadership, campus involvement, community service, the arts, athletics, or career achievement. Great job Nikole!

Special Notes:
Congratulations to our graduating seniors! Have a wonderful summer and we’ll look forward to a successful 2016-2017 academic year!

Departmental Honors and Awards Announced

- **Henry Liam** is this year’s recipient of the Charles S. Thomas Memorial Scholarship for the student with the highest average in BIO111.
- This year, **Clayton Brady** was selected as the recipient of the Francis Claffey Award, which is awarded to a senior demonstrating academic excellence and Departmental Scholar.
- **Cal Robinson** received this year the Henry Gould Award, for a Biology major with the highest GPA graduating from the Teacher Certification program.
- **Melissa Stoj** received the Elmer J & Fay Cloutier Award, for a junior or senior with potential for success in graduate or professional school.
- **Kathryn Wershing** has been selected as the recipient of the Departmental Scholar's Award, for demonstrating strong academic performance and for major contribution to the community spirit of the department.
- **Nikole Van Wie** received the SUNY Chancellor’s Award, recognizing outstanding students who successfully integrate academic excellence with other aspects of their lives, including leadership, campus involvement, community service, the arts athletics or career achievement.

Congratulations to all of our award recipients!
Featured Biology Graduates — Undergraduate Student

Jason Dey  
(B.S. ‘16)
Growing up I always knew I was going to Brockport; it was close to home and affordable, no other reasons. Looking back I wouldn’t have chosen anywhere else. At the beginning I liked my classes and making new friends, for a few years that was enough. I changed my major a few times and added a few minors. I was growing into what I really wanted to do after Brockport, not just what I thought I wanted to—something that research really helped me figure out. I ended up as a biology major and thankfully am going into a pharmacy/PhD program next year. As time progressed I began wanting to go deeper than course work, so I asked a professor if I could work in his lab doing research. It turned out that lab wasn’t the best fit for me at the time, but I really began to appreciate the idea of research. So in my junior year as part of the Honors Biology Program I asked Dr. Bernardo Ortega if I could work in his lab and from there things really took off. It was difficult at first but eventually it became almost natural. It added a different side to school, a different side to future possibilities, way more than I ever realized for myself at least. Once I started working in the lab school began to get easier, more relaxed and laid back. Working in the lab became part of my life, a part I greatly enjoy. It’s a whole different way of learning, a whole different way of thinking and there isn’t always one right answer. Growing into research, into a researcher, and growing a relationship with a professor/mentor is an experience like no other that I wouldn’t trade for anything. Watching and listening to my mentor taught me more than a whole semester could, it taught me a new type of thinking. In research I found something that’s going to be a part of my life, for the rest of my life: research has become something I truly love. It definitely helps clear the stress and monotony of classes too. For me, I couldn’t have asked for anything more from a college or anything more from my mentor. Brockport’s professors, programs, the college as a whole, and especially Dr. Ortega are all to thank for that.

Featured Biology Graduates — Graduate Student

Ian Shannon  
(B.S. ‘15, M.S. ‘16)
Dr. Rich asked me to write a short reflective piece about my time at Brockport. I am almost graduate with a MS degree, and I am now a research technician. Brockport classes were challenging, sometimes, and they helped me to gain knowledge. My only regret was not starting independent research sooner. Not for the “easy A”, but for the challenges and experiences. Independent research motivated me for Graduate school. Research graduate school went like this: you have no idea what you are doing, then you learn background knowledge, and then you gain a few skills and self-confidence. You are given autonomy. You design experiments and carry them out with minimal guidance. You learn how to use the tools in the lab in ways you didn’t even know they were designed for.

Teaching was just as rewarding as research. I taught A&P labs. If you are thinking of graduate school then try to teach a class. Teaching has a lot of benefits. Superficially, it will help pay for your education and it will look good to future employers or schools. Most importantly teaching provides a tremendous opportunity for self-growth. You learn how to communicate concepts and ideas to students. Teaching forces you to become better organized, and it’s the best way to learn the material.

Graduate studies aren’t all wonderful. Long days, longer nights studying or waiting for experiments, or repeating experiments after you screw up.

To anyone considering a graduate degree my advice is this:
1. Make sure you are doing it for the right reasons. Don’t enter because you don’t want to work retail or to defer student loans.
2. Make sure you have a mentor you can talk to and get along with. Visit their lab and meet other students there.
3. Be prepared to work. Graduate work is not easy.
4. Don’t take it too seriously. You will make mistakes. And more mistakes. Be prepared to screw up and be prepared to bounce back.
5. Lastly, enjoy it. If you stop enjoying it, find out why and change it. It might be a new project, it might be a new mentor, it may even be a new school.

The final take-away is this.

Graduate school can be fun and rewarding. You get out of it what you put in. You can trust me on this, I know everything. I have a MS degree. Almost.
Summer 2016 Course Selections

The Department of Biology is offering the following courses over the Summer Session. If you are interested in taking a summer course, we urge you to register soon so that you may lock in your seat. Demand is high every year.

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<td>5/16-8/6/16</td>
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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!

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.

Brockport Biology Students at Scholars Day

Biology Students presenting at Scholars Day included; Tyler Hunn and Henry Ophardt from Laurie Cook’s lab, Nicole Ashman, Melissa Stoj, Maame Esi Aggrey, Elizabeth Lindsay and Kyle McAtee from Rey Sia’s lab, Jason Dey and Allison Gardella from Bernardo Ortega’s lab, Nicole Van Wie, Clayton Brady, Jon Sleeper, Bailey Majtyka, Amber Clay, Samantha Flint and Maxwell Denora from Adam Rich’s lab, and Lucas Galbier from Rongkun Shen’s lab. Congratulations to all!
Dr. Laurie Cook: New additions to the lab this semester include graduate student Tamecia Browne and undergraduate student Amanda Dragonette. Congratulations to both on successfully learning how to culture and maintain our adipose cell line, 3T3-L1s. They are ready to begin with their experimental questions aimed at determining how MCH signaling affects adipose cell function. One of our lab veterans, graduate student Henry Ophardt, is working on harvesting RNA from adipose cells at different developmental stages and preparing it for bioinformatic analysis via RNA Seq in collaboration with Dr. Shen. Henry is preparing to take his qualification exam this June. Tylor Hunn is testing the hypothesis that MCH stimulates upregulation of the glucose transporter GLUT4, which could link this appetite hormone to the regulation of glucose uptake by adipose cells. Thanks to our NSF-funding, summer stipends will be available to both Tylor and Henry so that they can continue their work through August 2016. Thanks to the Brockport Foundation Summer Research Fellowship, we will welcome two new undergraduate students to the lab for 8 weeks this summer; Brett Henderson and Hiba Abdullah. I am excited to be able to be able to focus on experiments with a great team of students this summer and am looking forward to collecting enough data to be able to begin writing a manuscript this coming Fall.

Dr. Rey Sia writes: I would like to take this opportunity to congratulate Kathryn Wershing, Kyle McAtee and Elizabeth (Lizz) Lindsay. Kathryn was accepted into a D. O. program, Kyle was accepted into M.D. programs, and Lizz was accepted into Ph.D. programs. As of this writing, Kathryn may attend Lake Erie College of Osteopathic Medicine in Bradenton, Fl. Kyle hasn’t made up his mind yet as to which medical program he will attend while Lizz is leaning towards attending the Univ. of Rochester Medical Center graduate program. I’m sad to say that a majority of the lab will be graduating this May. Kathryn Wershing, Elizabeth Lindsay, and Kyle McAtee will graduate with Departmental and/or College Honors. Nicole Ashman will graduate from the Biology Masters Program while Allyson Burkhart, Amber Blidy, and Christina Seger will be graduating from the combined BS/MS degree program. I’ve spent several years with many of these students and they have become my Brockport family. I wish them great success in their future endeavors. Before leaving, several of them presented their research. Kyle was invited to present his research at NCUR and SURC. Nicole, Lizz, and current lab members, Melissa Stoj and Maame Esi Aggrey, will be presenting at Scholars Day. I’d also like to welcome Gabrielle Murphey to the lab. I also have some lab alumni updates. Deanna Pedeville, started a new job at Bausch + Lomb in their research and development’s microbiology and sterilization science department. Garry Coles, recently graduated from the Univ. of Rochester Medical Center with his Ph.D. and is out at Stanford starting his post-doctoral research. Finally, I would like to thank Nicole Ashman for nominating me for the 2015-16 Roland Fontaine Award for Faculty-Student Engagement, which I was recently awarded.

Dr. Michel Pelletier writes: As another semester is nearing the end, I would like to congratulate all Biology as well as Medical Technology majors who will be graduating in a few weeks. Great Job guys!

This semester, 5 undergraduate students have been working in my lab conducting research on trypanosomes. Katherine Vogler and Isaac Taylor have been working at the construction of a plasmid that will allow us to down regulate by RNA interference the expression of a protein involved in phospholipid biosynthesis (TbLpn) in Trypanosoma brucei. Grace Tackie is attempting to produce a plasmid that will enable the lab to identify, by yeast-two-hybrid screening, proteins that interact with TbLpn. In addition, Evan Spencer and Dylan Carnavale have been busy expressing and purifying recombinant form of 5 different enzymes known collectively as trypanosome protein arginine methyltransferases (TbPRMTs). This will generate valuable tools to determine the effect of arginine methylation on the activity and cellular localization of TbLpn. Finally, a sixth undergraduate student, Michelle Tartaglia, is focused on
determining the effect of a diet low in magnesium on the gut microbiota of mice.

As for the graduate students, this past December, Caitlyne Kocik successfully defended her Master’s thesis. Will Bigham, Andrew Bumstead, and Dan Steiner are in the process of writing their Master thesis. Keep up the good work guys, the end is near. As for Ben Sargeant, he is currently working hard at screening and characterizing bacteria and fungi released by the ventilation system in Lennon Hall.

Congratulations to Dan Steiner for being accepted into the Biophysics, Structural and Computational Biology Ph.D. program at the University of Rochester.

Dr. Huey Hing writes: In addition to my teaching, this semester I have been busy with my research. I have identified two new genes that are involved in the neural circuit development in the Drosophila olfactory system. I have also been chosen to give a talk of my research at the annual meeting of the Association of Chemoreception Sciences in Florida on April 21, 2016.

Dr. Rongkun Shen: The computer server for bioinformatics has been set up and running for both research and teaching. It has 40 CPU cores, 64GB RAM and 8TB storage. There are more than 20 users using it now. The lab is expanding quickly this semester. Lucas Galbier continues working on “microRNA target prediction using machine learning and profiles”. He also presents in both SURC and NCUR of 2016. Ashley Sharlow is trying to identify long non-coding RNAs (lncRNAs) from RNA-Seq data. Peter Giangrasso and Conner Dowdle (Computer Science major) are working on “machine learning for integrative genomic data”. Valentina Studentsova is comparing the most popular alignment tools for mapping the next-generation sequencing data. Lisa Moore (also from Computer Science) is setting up our own BLAST server.

Dr. Stuart Tsubota writes: Beresford Crick (2014) will be starting this fall in the Genetics, Development and Stem Cells PhD program at the University of Rochester School of Medicine and Dentistry. Soudarath (Lilly) Southivongnorrath joined the lab this semester and will be doing her honors thesis in the lab.

Dr. Bernardo Ortega writes: Oyindamola Aregbesola, Jason Dey and Justin Leach will graduate this year. During this semester, students in the lab have been making great progress in understanding the role of EGF during hypomagnesemia. Experiments involved placing mice in a magnesium deficient diet and analyzing changes in serum electrolyte composition after injecting mice with an EGF receptor 1 inhibitor. Students Allison Gardella and Jason Dey presented our recent advances during their oral and poster communications at Scholars day. The lab welcomes Deanna Vaneerde, who will begin in May as a Summer Undergraduate Research Student.

I would like to close by recognizing Jason Dey’s achievements. Jason has been a Honors Research Student for two years. During this time he co-authored a peer-reviewed article in the journal “Magnesium Research”. After this summer, once he completes his second Summer Undergraduate Research experience, Jason will become a Pharmacy Student at SUNY Buffalo. I will miss him and I am sure that the mice will miss him too! We all wish him great success in life.

Dr. Adam Rich: A&P2 has finally killed Dr. Rich! He has requested that the extracellular and intracellular cation concentrations be written on an index card and taped to the inside of his coffin so that he may view it for
Department Achievements

eternity. OK- that was an April Fools joke! We need to congratulate Max Denora and Nikole Van Wie for graduating, Bailey Majtyka for getting into the Brockport Fellowship for summer research, and Clayton Brady for getting into his second summer fellowship at the Mayo Clinic in Rochester, MN. I need to thank them, Amber Clay, Sam Flint, Griffin Steinhilber and Jon Sleeper for helping in the lab and for their diligent work that will help them to become better scientists! We are plugging away at anoctamin 1 and anoctamin 2 expression in the zebrafish, measuring the relative importance of enteric neurons and interstitial cells of Cajal on GI motility, and calcium imaging in GI tissues.

The Institute for Engaged Learning is busy measuring experiential learning activities by students and faculty. For us, in Biology or Biochemistry this means research or maybe an internship or volunteer experience. Please do one! It is your best opportunity to do something, to learn while you are doing, to develop your skills at the bench. You will learn to actually design an experiment, and then you can do it! This is important because it gives you something to talk about when you are interviewed. You become an expert on your topic and that is valuable!

Student Successes and Alumni Updates

- **Deanna Pedeville (B.S. ’14)** is working in the Research & Development Microbiology and Sterilization Science Department at Bausch & Lomb.
- **Katrina Haude (B.S. ’12)** is working at the U of Rochester Medical Center as a certified Genetic Counselor.
- **Patrick Donohue (B.S. ’10)** is graduating U of Buffalo’s School of Medicine and heading to the U of Rochester Strong Memorial Hospital to begin his Residency Program in Internal Medicine.
- **Michael Cerasaro (B.S. ’11)** is finishing up his intern year at Community Memorial Hospital’s Internal Medicine Residency in Ventura, CA.
- **Colin King (B.S. ’14; M.S. ’15)** is an Adjunct Professor at Niagara County Community College teaching A&P while also working as a Lab Technician at Roswell Park Cancer Institute.
- **Chris Brown (B.S’08)** attended medical school in St George’s University (Grenada) and is starting a Gastroenterology fellowship at Norwalk hospital.
- **Garry Coles (BS ’07, MS ’09)** recently graduated from the Univ. of Rochester Medical Center Ph.D. program and is out at Stanford starting his post-doctoral research.

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 student. Please consider helping to support our students’ research opportunities. For more information please contact Dr. Rey Sia (rsia@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](https://www.brockport.edu/giving/online/gift.php)

-The Biology Faculty
The Biology Honors Club has had an exciting semester. We had several new biology students join the program this year. Congratulations to our new members: Alexandra Flint, Brooke Scott, and Southivongnorath Soudarath. We also had several members of the club that presented at Scholar’s Day, members that were invited to the National Conference on Undergraduate Research (NCUR) and/or members that will be presenting at the SUNY Undergraduate Research Conference (SURC). As a club, we recently participated in the Gilda’s Club 3rd Annual Crosscheck Cancer Hockey Game where our club members volunteered and raised money for Gilda’s Club. Members also participated in the Stuff the Trailer event, where they helped collect non-perishables for the Brockport Vet’s Club. Lastly, we collected and donated filled shoe boxes for children in Ukraine. The shoe boxes contained toys, books, educational items and toiletries. We are currently working on creating several food chain themed game boards for an elementary special education class. We are all very proud of what we have accomplished this year as a club and are excited to continue our involvement in the college and local community.

It has been a wonderful experience as President of the Biology Honors club for the last three semesters. I have been granted the opportunity to mentor club members and witness them grow as not only students, but as leaders as well. I would first like to recognize the members that are graduating in May: Maxwell DeNora, Kathryn Wershing, Kyle McAtee, Jason Dey and Nikole Van Wie. Secondly, I would also like to recognize the upcoming President for the 2016-2017 academic year, Bailey Majtyka. I have had the pleasure of working alongside Bailey in Dr. Adam Rich’s gastrointestinal physiology lab. He is also a member of the Honors College, a Resident Assistant for the upcoming semesters, and is the President of the Perry Hall Residence Council. Bailey also entertained biology students, faculty and staff as one of the dancers in the dance routine performed at the 2015 Holiday Party (choreographed by Dr. Stuart Tsubota). The Secretary, Treasurer and Historian positions will be assigned to Jon Sleeper, Casey Attenberger, and Evan Spencer, respectively.

If you are interested in becoming a member of the Honors Biology Program and Club, please contact Dr. Laurie Cook, Dr. Michel Pelletier or the new President, Bailey Majtyka. You may also follow this link to learn more about the program: [http://www.brockport.edu/biology/undergraduate/biohonors.html](http://www.brockport.edu/biology/undergraduate/biohonors.html).

Nikole Van Wie,
President of Biology Honors

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### Summer Research Fellowships

- **Bailey Majtyka** was granted a Brockport Foundation Summer Research Fellowship to work in Dr. Rich’s Lab.
- **Jason Dey** and **Deanna Vaneerde** were awarded Brockport Foundation Summer Research Fellowships to work in Dr. Ortega’s Lab.
- **Brett Henderson** was granted a Brockport Foundation Summer Research Fellowship to work in Dr. Cook’s Lab.
- **Hiba Abdullah** received a Brockport Foundation Summer Research Fellowship to work in Dr. Sia’s Lab.
- **Michelle Tartaglia** was granted a Brockport Foundation Summer Research Fellowship to work in Dr. Pelletier’s Lab.
- **Clayton Brady** was awarded his second summer research fellowship at the Mayo Foundation in Rochester, MN to work in Dr Lieske’s lab in Nephrology and Urology.