Biology Newsletter: May 2018

Michel Pelletier

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

The State of the Department

Here we are again at the end of another academic year. I would like to congratulate all Biology as well as Medical Technology majors who will be graduating in a few weeks. Great Job guys! Some of you will be starting a career using tools and skills that you've acquired here at the College. Others are moving on to graduate schools or to professional schools. Regardless of your future endeavors, we hope that you will come back to visit and keep supporting the department. For those who are returning in the fall, I wish you a restful but yet enriching summer no matter what your plans are.

It was my pleasure to continue the great work initiated by Dr. Cook this past fall, and serve as the Interim Chair this Spring semester. It has been a great learning experience and a fascinating way to get involved and see how the Department of Biology, the School of Arts and Sciences, and the College work together to ensure a great and valuable experience for everyone.

Dr. Michel Pelletier
Interim Chair (Spring ’18)

Special Notes:

Congratulations to our graduating seniors! Have a wonderful summer and we’ll look forward to a successful 2018-2019 academic year!

Departmental Honors and Awards Announced

- Jeffrey Schmitt is this year's recipient of the Charles S. Thomas Memorial Scholarship for the student with the highest average in BIO111.
- This year, Bailey Majtyka was selected as the recipient of the Francis Claffey Award, for a senior demonstrating academic excellence and Departmental Scholar.
- Adeline Kelly received this year the Henry Gould Award, for a Biology major with the highest GPA graduating from the Teacher Certification Program.
- Lily Southivongnorath received the Elmer J & Fay Cloutier Award, for a junior or senior with potential for success in graduate or professional school.
- Casey Attenberger 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.

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May 2018

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Jon M Sleeper  
(B.S. ‘18)

It is hard to convey how much I have learned both in and out of the classroom at The College at Brockport. Studying under accomplished and extremely respectable professors for the last four years at Brockport has given me a sense of gratitude and overall excitement for my future in the medical field. I feel as though it was just yesterday I was a wide-eyed freshman learning the basics of Biology and meeting other students who were just as enthralled to learn as me. Those students I sat next to just four years ago have turned into tremendous friends who I am sure will accomplish great things in the future.

The Biology department isn’t just a machine that churns out graduates with no guidance or support. In fact, it is the complete opposite. Every professor I have come to has had open arms and willing to give as much time and resources needed to help me with whatever problem or project I have had. I have had the pleasure of studying gastrointestinal physiology under Dr. Adam Rich for the past three years and it was nothing short of extraordinary. Dr. Rich has guided me through thick and thin, and dedicated hours upon hours of his time helping me not only with academics, but also with extracurricular situations such as deciding where I would fit best in the medical field. I am very excited to be going to Le Moyne College for their Physician Assistant program, not only with the guidance of Dr. Rich, but with countless other professors along the way.

The advice I would give to incoming freshman of any major, but definitely biology, is to get your toes wet. Sit in front of class; soak up as much information as you can, and most importantly, don’t be afraid to ask questions. Why does this mechanism happen? How do these pieces fit together? These questions will propel you to deeper questions, and will not only help shape the student you are, but the person you will become.

Imran Tahir  
(B.S. ’09, M.S. ’18)

My sister’s tragic death during my first semester of medical school was the most painful moment of my life. Leaving medical school to focus on myself and my family was one of the most difficult decisions I’ve had to make. What started as an item on my bucket list, working towards my Master’s in Biology has been a life altering journey towards personal intellectual satisfaction. The College at Brockport provided a nurturing environment that allowed me to flourish as a student. I was impressed by the sophisticated technology and research opportunities that Brockport affords to both its Masters and undergraduate students.

I never imagined that during my first semester I’d be using immunohistochemistry techniques to label a receptor on a transgenic zebrafish in Dr. Adam Rich’s Systems Physiology class. The imaging capabilities of the fluorescent and confocal microscopes are incredible and the pictures we took looked like they belonged in Popular Science! I was equally as impressed by the teaching techniques and expertise of Dr. Michel Pelletier and Dr. Laurie Cook who made complex subjects exciting. Performing my research in Dr. Rey Sia’s mitochondrial genetics lab has been a rewarding experience. Initially starting in Dr. Bernardo Ortega’s lab, investigating a diuretic effect of a flu vaccine was right up my alley after over 6 years of clinical experience in cardiology prior to medical school. But as luck had it, I ended up in Dr. Sia’s lab studying genetics, a subject I always found challenging. There I learned profound life lessons: don’t do the easy thing and to step out of your comfort zone. These lessons allowed me to really grow as a student and further nourished my life long curiosity with science. Furthermore, Dr. Sia’s guidance and encouragement helped me to better understand genetics as I investigate the repair mechanisms involved in mitochondrial stability. I am finishing my research over the summer and plan to defend my thesis in the fall. My teaching assistantship in Anatomy and Physiology II and Genetics showed me the rewarding experience that teaching and mentoring holds. My time studying at Brockport has been truly gratifying and has ignited a burning desire to further my education and research as I pursue a Ph.D. I feel that undertaking a Master’s Degree at SUNY Brockport was one of the best decisions I ever made.
Brockport Biology Students at Scholars Day

Biology students presenting at Scholars Day included; Rebecca Wegman, Matthew Serbonich, Molly Kiser, and Alexandra Flint from Pelletier’s lab; Brooke Scott, Imran Tahir, Brandon Pratt, Lydia Arthur and Justin Galardi from Sia’s lab; Tricia Cooke, Taylor Thompson, Christopher Carlson, Conner Kobus and Gabriela Mercurio from Ortega’s lab; Joseph Pancari, Casey Attenberger, Ryan Peters, Meghan Denny, Gabriela Mercurio, Claire Makowski, Bailey Majtyka and Jon Sleeper from Rich’s lab; Soudarth Southivongnorath from Tsubota’s lab; Rachel Soeder and Peter Giangrasso from Shen’s lab. Congratulations to all!

Summer 2018 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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<tr>
<th>Date Range</th>
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<tbody>
<tr>
<td>5/29/18 - 6/30/18</td>
<td>BIO 321 Anatomy and Physiology I</td>
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<td>5/29/18 - 6/30/18</td>
<td>BIO 323 Microbiology</td>
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<tr>
<td>7/02/18 - 8/04/18</td>
<td>BIO 322 Anatomy and Physiology II</td>
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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 Master Degree in one year rather than the usual two years. If you are interested, please contact Dr. Laurie Cook, 3+2 Program Coordinator.

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.

Volume 8, Issue 1
Dr. Laurie Cook is currently finalizing experiments in preparation for submitting two manuscripts for publication (one in collaboration with Dr. Rongkun Shen’s Lab). The work began with projects by former lab members Bryan Pratt, Colin King, Hiba Abdullah, Mac Cerasaro, and Henry Ophardt. Thanks to an extension on her NSF research grant, she will be funding 8-week research experiences for undergraduates Dayanara Torres and Meghan Walters this summer. Congratulations to both! Tamecia Browne is preparing to defend her graduate project, which we are looking to also publish, and Bianca Camillaci and Jordan Johnson are both preparing for their oral qualifying exams this June. Bianca is preparing to research how melanin-concentrating hormone (MCH) may regulate expression of the Vitamin D receptor in differentiating adipocytes and Jordan is planning on elucidating the signaling pathway responsible for MCH mediating actin rearrangements in pre-adipocytes.

Dr. Adam Rich: Research in our laboratory has expanded from looking at anoctamin 1 (Ano1) function in the gastrointestinal tract, to rheotaxis, blood glucose regulation, pain, oocyte fertilization, and possibly the function of primary cilia. Ano1 is a calcium activated chloride channel that was discovered just 10 years ago as a marker for GI stromal tumors. Initial work by Clayton Brady, students in Systems Physiology 2017, and current work by Casey Attenberger and Joe Pancari showed Ano1 expression in tissues supporting these functions. We have now developed assays to measure Ano1 function in these processes. Since Ano1 protein has several regulatory domains and alternate forms are expressed in mice and in humans, we are therefore examining the possibility that alternate forms are expressed in zebrafish. Tara Sweet, Meghan Denny, and Claire Makowski are using the 5 prime RACE technique to examine the 5 prime end of Ano1 mRNA. Ultimately we hope to correlate specific functions to alternate forms of Ano1.

Several students are graduating, and this is the perfect opportunity to congratulate them! Casey Attenberger will be in Florida studying to be a Chiropractor, Jon Sleeper will be in Syracuse studying to be a Physician’s Assistant, Bailey Majtyka will be here in our MS program doing research, and Joe Pancari will be on Long Island interning at a cardiac rehab center. Gabby Mercurio, winner of a poster presentation award, will be at a MS program somewhere and Jessica Mayer plans to work! I am so impressed by the success of these students, and others doing research! I encourage every student to do mentored work, research or otherwise. Student success happens because the students are great, and because they benefit from working with faculty on projects outside of class.

Dr. Rongkun Shen lab’s research is focusing on gene expression regulation using bioinformatics approaches, mainly on next-generation sequencing data and machine learning applications. Peter Giangrasso and Rachel Soeder analyzed RNA-Seq data from Dr. Cook’s lab, presented in RAS 2017, SURC2018 and Scholar’s Day 2018. Peter also presented a poster in NCUR 2018 in Oklahoma City. Neslihan Ari, a Biology MS student, joined the lab in the Spring 2018. Jonathan Fleming, majoring in Biochemistry, started in the lab this semester.
Dr. Bernardo Ortega: Christopher Carlson received a Summer Undergraduate Research Program fellowship to work during the summer of 2018 on the effect of different magnesium dietary supplements on a mouse model of Crohn’s disease. Tricia Cooke is writing up her Honors thesis and will graduate this year. Conner Kobus will move forward to his medical technology internship at Rochester General Hospital. Gabriela Mercurio will also graduate this year. Olanrewaju Akande will join the lab next semester and will be involved in studying the effect of dietary magnesium deprivation on the flora of the gastrointestinal tract in mice, in collaboration with Dr. Pelletier’s lab.

Dr Rey Sia: The research lab was very busy this spring semester. They did an outstanding job independently driving the research while I was busy with my new duties as Asst. Dean. The lab members included undergraduates Brooke Scott, Joshua Dailey, Lydia Arthur, Brandon Pratt, Justin Galardi, and M.S. student Imran Tahir. Brooke did a great job mentoring Joshua Dailey. Brooke is in the Honors College and also presented her research at Scholars Day. In addition, she will be presenting at the annual SUNY Summer Undergraduate Research Conference at MCC. Imran also did a commendable job mentoring Lydia, Brandon, and Justin. All four presented a poster at Scholars Day. Unfortunately for the lab, all four will also be graduating in May. Imran will continue through the summer to finish up his M.S. thesis. Lydia will continue working at Ortho Clinical Diagnostics in finance but is transitioning to assay development. Brandon is currently applying for research technician/lab manager positions primarily at UNC-Chapel Hill. He is also the winner of the School of Education, Health, and Human Services Outstanding Achievement Award. Justin will be entering the Biochemistry and Molecular Biology PhD program at the Univ. of Rochester Medical Center this fall. He is also the winner of the SUNY Chancellor’s Award for Student Excellence. Congratulations to these graduates and I wish them success in their future careers.

Dr Pelletier: Following a research sabbatical last fall, I resumed my teaching duties this spring teaching General Microbiology (BIO 423/643), and Immunology (BIO 414/514). In lab news, I would like to congratulate Molly Kiser, Alexandra Flint, Rebecca Wegman, Emily Amato, Taren Mancuso, and Matthew Serbonich. These 6 students are all graduating in a few weeks. Alexandra will remain in the lab to pursue graduate work as she is enrolled in the 3+2 Program. Speaking of graduate student, Anthony Monaco has been working in the lab this past semester on setting up tools that will allow him to down-regulate by RNA interference the expression of a protein involved in phospholipid biosynthesis (TbLpn) in Trypanosoma brucei. In addition to the 6 undergraduates mentioned above, Alyssa Raichel, Josiah Seaburg, and Mitchell Recio have also been working hard in the lab. All 3 of them are Honors students who will be returning in the fall. Alyssa and Mitch will be writing their Honors thesis, while Josiah will continue the work that he will initiate this summer through SURP.
Dr Stuart Tsubota: Lily Southivongnorath and Amber Voyer have continued working in the lab. Amber is finishing her honors thesis and will be joining the Medical Technology program at Rochester General for her senior year. Lily presented her work in an oral presentation at Scholars Day. The title of her talk was “A Mutagenic Analysis of the Human Cancer-Promoting Protein, ERH.” She will be doing her honors thesis next year. Two new students, Brianna Dudley and Markaylia Grant, have joined the lab. Markaylia will be working in the lab this summer as a McNair Scholar. Also joining the lab as a Masters student is Kalila Elahi.

This March, Stuart presented a Biology Department seminar entitled “Harry Potter: The Magical Beasts of the Wizard World and their Counterparts in the Muggle World.” It was well attended by both biologists and non-biologists.

Stuart was one of the faculty featured in an online article in The Port entitled The Secret Lives of Faculty. You can check out the article at https://www.brockport.edu/news/stories/secret_lives_faculty.

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.

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. 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. Laurie Cook (lcook@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.

http://alumni.brockport.edu/s/1549/rd17/home.aspx

The Biology Faculty
A Word from the President of the Biology Honors Club

The honors biology club took on the 2017-2018 year, wanting to try some new events and activities. The club focuses on the honors biology program and making sure students in the club graduate with biology honors and complete research as well as a senior honors thesis. Many of us in the program have been doing research for several years and are completing our thesis projects now. I know all of us have found this opportunity so rewarding and beneficial. We are all now able to graduate with a piece of work that we can be proud of that shows how we are contributing to the world of science.

Early last semester, we participated in a fundraiser for people who had visual impairments and needed seeing eye dogs. The club was able to raise money and deliver it to the fundraiser in Spencerport where there was bowling and puppies. This experience was great for us to go and see those who were benefitting from this fundraiser and understand what their program was all about.

This semester, the club participated in the March for Science in Rochester. We took several foods including pasta, milk, potato chips and others and tested for carbohydrates, lipids and proteins for all those who participated in the march and attended the expo. This was such a rewarding experience for us to plan this demonstration and see the kids who learned from the experience and showed their early appreciation for science. This was a joy to see science at such a young age and helped us in the club to validate why we are in science and how rewarding and important it is. We plan on encouraging more demonstrations like this one next year at Brockport and plan to make this happen, as well a trip to Golisano’s children hospital to interact with kids with cancer as we have done in the past. The club is ready for the summer break and fall semester to come!

Casey Attenberger
President of Biology Honors
catte1@u.brockport.edu

Student Successes and Alumni Updates

2017 Graduates:

- **Rebecca Braun** - Pharmacy Intern at Medication Mgmt Program, Ohio State
- **Brett Henderson** - Physician’s Assistant Program at Le Moyne College
- **Gabrielle Murphey** - Optometry School at Salus University
- **Melissa Stoj** - Dental School at University at Buffalo
- **Max DeNora** - Pharmacy School at West Virginia University
- **Amanda Dragonette** - The College at Brockport Nursing School
- **Nathaniel Leisenring** - Physician’s Assistant Rochester General Hospital
- **Evan Spencer** - Dental School at U Buffalo
- **Michelle Tartaglia** - Physician's Assistant Program at Indiana University
- **Ashley White** - PhD Program in Biomedical Sciences at U Buffalo
- **Lindsay Zink** - Eshelman School of Pharmacy at UNC Chapel Hill