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Biology Newsletter: October 2011

The College at Brockport

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

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

Volume 3, Issue 1

October, 2011

The State of the Department

I would like to begin by welcoming our new Biology majors who will be joining the department this Fall semester. In addition, I would also like to welcome back the returning Biology majors. I hope the summer break was relaxing and has rejuvenated everyone to start a new academic year. I'm feeling excited to be back after my nine month sabbatical at the University of Rochester. I want to thank Dr. Stuart Tsubota for doing a great job serving as the Departmental Chairperson while I was away.

I also want to take this opportunity to announce two initiatives that will greatly benefit Biology majors. The first is a new curriculum change starting this semester, involving the launch of the new Biology Honors Program, coordinated by Dr. Laurie Cook. Students who complete this program will have the added distinction of graduating with departmental honors. The honors experience will also provide a rewarding research experience. The second initiative involves the process of hiring a new faculty member with a

background in Physiology. This new faculty member is expected to help increase the number of physiology courses offered to Biology majors. Additionally, this faculty member will be able to increase the number of research opportunities to the majors.

On a more somber note, I would like to honor the memory of Dean Stuart Appelle who passed away suddenly just prior to the start of this school year. Dean Appelle was a strong supporter of this department. He will be missed by the members of the School of Science and Mathematics. The new Dean of the School of Science and Mathematics is Dr. Jose Maliekal, formerly the Associate Dean. I would like to formally welcome him and wish him well in his new position.

In closing, I would like to wish everyone a productive and successful academic year.

Rey Sia, Ph.D.
Chair



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Special Notes: Stay tuned for Departmental Seminars by Candidates for a new Faculty Position in Biology in late Fall early Spring!

New Biology Honors Program Aims to Enrich the Brockport Experience for Exceptional Students

The Biology Faculty are pleased to announce a new Departmental Honors Program that aims to enrich the Brockport experience for exceptional students. The Honors Program in Biology is designed to give students hands-on experience with the latest cellular and molecular technologies including fluorescence microscopy, microplate assays, tissue culture, and recombinant DNA technology through a multi-semester independent research experience. Research projects will be presented at local, regional and national scientific meetings with the

mentor and collaborating lab members. This team-focused approach to science produces a sense of com-



munity among students and provides a framework for future collaborative efforts. The program culminates in a senior year Honors Thesis based on the student's research project. This semester's Honors students include **Laura Pankowski, Colin King, Mackenzie Meyer, Jaclyn Beckinghausen and Stacy Wicks** shown here with Dr. Laurie Cook, Biology Honors Coordinator. For more information, please contact Dr. Cook at lcook@brockport.edu or stop by her office located at 217 Lennon Hall.

We Welcome Kathleen Reagan to the Department!



The Department would like to extend a warm welcome to our newest member, Kathleen Reagan, who was hired this year as an Adjunct Instructor. She will be teaching BIO 321-322, Anatomy & Physiology I and II. Kathleen is unique among our faculty in that besides having an M.S. in Zoology from the University of Oklahoma, she also has an M.F.A. in Dance from the College at Brockport. In addition Kathleen is a certified Pilates instructor. Kathleen's Master's thesis examined the effects of dams and redirecting streams and rivers on the gene flow of the freshwater mussel, *Amblema plicata*. She presented this work at the North American Benthological Society Conference. While a graduate student,

Kathleen volunteered for the Oklahoma Conservation Commission where she conducted bio-habitat assessments of Oklahoma streams and rivers. Kathleen's interest in dance brought her to Brockport, where she recently completed her M.F.A in Dance. Her Master's thesis in Dance focused on the connection between the physiological and psychological theories behind the human desire for dance. While completing her thesis, Kathleen was the Brockport Student Chapter President of the National Dance Education Association. Currently, she is developing a dance company - Company K. Reagan - and has a choreographic showing in December in New York City at Waxworks.

Biology Alumni Update



Jeff Sattora is in a surgery rotation at Oneida healthcare. Jeff graduated SUNY Brockport in May 2010 with a BS in Biological Sciences and a minor in Chemistry. Jeff is enrolled in a Physician's Assistant program at Lemoyne College in Syracuse and received a prestigious fellowship award to help pay for his studies there. He came to Brockport as a transfer student and did undergraduate research in organic chemistry with Steve Godleski, and in biology with Adam Rich and Michel Pelletier. It is rewarding to see Brockport students succeeding!

Announcements

Midsemester Break is October 17th & 18th this year—Classes are suspended

November 4th is the deadline to Withdraw from classes without the Chair's permission

Final Exams scheduled for the week of December 12th

Deadline for applications to the 3+2 B.S./M.S. combined degree program is October 31st

Pre-Professional Club Activities

The Pre-Professional Health Club is an amazing opportunity for any student who wishes to continue on into any sort of medical field. The club is especially catered toward students wishing to go to veterinary school, medical school, or dental school. Each semester the club organizes trips to desired schools of choice. In past visits, the Pre-Professional club has traveled to Cornell, SUNY Syracuse Upstate Medical, and others. We also invite speakers to come to Brockport from various medical schools to discuss the admissions process and related opportunities. Although the club is geared towards helping students to learn more about the process of getting into professional schools, we also participate in many other fun activities. For instance, we have an annual softball game against the Chemistry Club! In addition, the students in the club also hold a yearly fundraiser to help international organizations, such as Doctors Without Borders or other local organizations through Polar Plunge. All of the activities that the Pre-Professional Club participates in are both fun and rewarding and by joining the club, students will have an opportunity to not only enhance their knowledge of the medical school process, but also meet amazing people who are sharing a common life goal. We meet every Thursday at 5:15 pm in the McVicar Smartroom. Please consider joining us!

2011-2012 President—Luke Krembs

Department Achievements

Faculty Updates



Dr. Michel Pelletier spent the summer teaching BIO323-Microbiology and working on research projects with 3 undergraduate students: **John Kroeckel**, **Nicole Muehleisen**, and **Amber**

Karpie. This Fall semester he is teaching BIO323-Microbiology, as well as GEP100-Academic Planning Seminar. He would like to welcome 2 new graduate students, **Nicole Muehleisen** and **Christine Sharlow**, who will join the 2 "senior" graduate students **Alyssa Frainier** and **Dominic Munini** who both successfully completed their oral examination this past summer. Congratulations!

A total of 7 undergraduate students are performing research in his lab for Fall 2011: **Lauren Genovese**, **Amber Karpie**, **Caitlyne Kocik**, **John Kroeckel**, **Kimberly Mahon**, **Nicole Muehleisen**, and **Nathan Scharf**. In addition to mentoring students, Dr. Pelletier is writing two manuscripts: The first one will describe the characterization of TbLpn and its role in phospholipid biosynthesis in *Trypanosoma brucei*. The second manuscript deals with the characterization of the marine microbial flora on San Salvador Island in the Bahamas. This stems from a collaboration with Dr. James Haynes from Environmental Sciences.



Dr. Laurie Cook spent a productive summer in the lab with **Robert Carroll**, **Andrew Goodspeed**, and **Lauren Field!**

Lauren successfully completed her Oral Qualification exam in

June and will be finalizing her M.S. thesis experiments this fall semester. **Andrew** was accepted into our new 3+2 B.S./M.S. degree program. Congratulations to both of them! Dr. Cook is currently working on two manuscripts: The first describes the effects of MCH on 3T3-L1 cell growth and adhesion (work done by **Michael Ceresaro** who is now in an Osteopathic Medicine Program) and the second is a collaboration between Dr. Cook and students **Jay Moden**, **Katrina Haude**, **Lauren Field**, and **Robert Carroll** focusing on the effects of arrestin and GRK overexpression on MCH receptor internalization and desensitization. Some important aspects of this work were obtained directly from a fluores-

cence plate reader purchased with an NIH ARRA Supplement awarded to Dr. Cook last fall. Her lab submitted an abstract for the latter project to present their findings at the ASCB meeting in Denver, CO in December 2011. Dr. Cook is also facilitating an independent research project on the effects of Simple Green on mammalian tissue culture cells by **Austin Olek**, **Andrew Goodspeed**, **Matt Morasco** and **Casey Donovan** stemming from a project initiated in her BIO301 Cell Biology Lab. We welcome **Bryan Pratt** to the lab as a M.S. student! Also, Dr. Cook has submitted her application for continuing appointment and tenure this fall. Good luck!



Dr. Stuart Tsubota taught the Department's first totally online course this summer through the SLN. The course, BIO 285 Biology of Aging, was taken by 23 students. Congratulations

to **Lisa Dishaw** who passed her Oral Qualifying Exam this summer. She is joined in the lab this Fall by **Eliza Ketchum** and **Jamie Galligan**.

They are all working on a mutagenic analysis of the 5' regulatory sequences of the *enhancer of rudimentary* gene. This summer with funds from an Academic Incentive Award, Stuart worked with a high school student, Courtney Taylor, and her Biology teacher, Mr. Steve Lock, on a population genetics' project on orchids. They collected the plant tissue and began the extraction of chloroplast DNA. They are continuing the DNA extractions and will be conducting the DNA fingerprinting this fall and winter. **Dr. Tsubota** also had a manuscript accepted for publication: Interactions between *enhancer of rudimentary* and *Notch* and *deltex* reveal a regulatory function of *enhancer of rudimentary* in the Notch signaling pathway in *Drosophila melanogaster*. *FLY*, Volume 5, Issue 4 October/November/December 2011 co-authored by Alecia C. Vogel, Anthony C. Phillips, Suzanne M. Ibach, Nicholas K. Weber, **Melissa A. Kostrzebski** and Susan A. Spencer. **Melissa** was a graduate student in the lab. Dr. Tsubota also performed with BIODANCE at the Clothesline Festival at the Memorial Art Gallery on Sept. 10 and at the Neighborhood of The Arts Fest 2011 Sept. 24/25th.

Department Achievements

Faculty Updates—Continued



Dr. Rey Sia was on sabbatical last semester at the U of R. During that time he co-authored 2 papers and 1 NSF grant. The 1st manuscript is titled “*Nuclear Nonhomologous End Joining Proteins Impact Spontaneous Mitochondrial Direct-Repeat Mediated Deletions and Double-Strand Break Repair*”; it was submitted to the journal *Genetics*.

Co-authors include two former Brockport students: **Laura Schiraldi**, an UG researcher who is currently finishing her med school training and **Garry Coles** a M.S. graduate in his 2nd year of a PhD program at URM. The 2nd manuscript is titled “*Clu1p Regulates Mitochondrial Morphology and Mitochondrial DNA Stability*” which was submitted to the journal *Current Genetics*. Co-authors on this manuscript include two former and one current Brockport students: **Christine Hochmuth** a M.S. graduate who is finishing her PhD at the U of R and will begin her post-doctoral work soon; **Jacqueline Walker** a former UG researcher currently beginning her 1st year at Cornell University’s College of Veterinary Medicine; and **Luke Krembs**, a senior UG researcher in the lab. He has presented earlier versions of this work at the Fall 2010 Rochester Academy of Sciences Paper Presentation and the 2011 NCUR Meeting. The title of the submitted grant proposal to the NSF is “*Mechanisms of Mitochondrial Deletion and Double Strand Break Repair*”. Dr. Sia currently has 5 UGs and 1 Grad student working with him this fall semester. **Luke Krembs** is a returning student. **Melissa Colon, Bridget Cooney, Laura Pankowski, and Kyle Walker** are all new students. Three of these students are in the Honors Program and one of these three is also in the Biology Honors Program. **Elizabeth Snyder**, a very experienced first year MS student has joined his lab. All of the undergrads will be presenting at the Rochester Academy of Sciences Fall paper presentation at MCC. He is looking forward to a productive semester with these students.



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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 re-

search. 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 op-

portunities. 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>

-The Biology Faculty



Welcome to Some of Our New M.S. Students!



Bryan Pratt — I am happy to be in the MS program in biology at Brockport. Starting out as a chemistry major biology was never really in my field of view (biology joke). However after taking biochemistry my junior year I knew I had to change programs. I switched to biochemistry at the end of the fall 2010 semester and graduated in the spring of 2011. I am currently working in Dr. Cook's lab. Since this is my first real dose of lab experience I am still learning my way around, starting with cell culture and western blots in an attempt to be able to pick up and eventually move forward the research currently being conducted in the lab. When I finish my two year masters degree I may pursue my pH D (chemistry joke) ... or maybe not. I am really very excited to see what the next two years will bring. The challenges, success, and skills that I will undoubtedly face will surely shape me for the rest of my life. Brockport has been my home for the last four years, and I am happy that it will continue to be my home for the next two.



Steven Lane — Currently, I work in Dr. Rich's lab studying interstitial cells of Cajal (ICCs) in a zebrafish model to help create models for human gastrointestinal (GI) disorders. I have decided to come back to school for my Masters to help hone my skills in the laboratory and prepare me for the future in another lab or pharmacy school. I graduated from SUNY Geneseo (B.S. Biochemistry) and worked in a neuroscience lab at the University of Rochester studying post-stroke synaptic plasticity and neurovascular remodeling, as well as several pathways of ALS pathogenesis (i.e. SOD-1 inactivation). I enjoy playing soccer, gaelic football and I hope to begin brewing my own beer in the next few months.



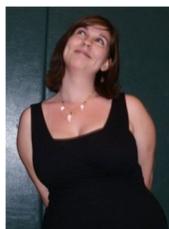
Elizabeth Snyder — I received an Associate in Science in Biotechnology from Finger Lakes Community College in 2009. After, I transferred to Rochester Institute of Technology where I received a Bachelor of Science in Biomedical Sciences, with a concentration in Genetics and Literary and Cultural Studies, in 2011. I have spent the past three years doing research in population genetics on Red-Tail Hawks in Upstate New York. I have also done field research with a Harvard University graduate student studying a species of lizards in the West Indies, on the island of Montserrat. Once I am done with my Master's degree, I hope to get a PhD in Microbiology/Immunology or Human Genetics and become a college professor. When I'm not studying biology, I like to play the guitar and read.



Jay-Christian Helt — I matriculated to Brockport in spring to Dr. Huey Hing's lab to investigate a protein called wnt5 from *Drosophila melanogaster*. The Wnt5 protein of *Drosophila* was previously identified as an axon guidance molecule. We and others have previously shown that the protein directs the axonal projection of ventral midline neurons and olfactory neurons. Recently we discovered when the wnt5 gene is deleted this leads to abnormal olfactory bulb development. Conversely when wnt5 is over expressed, an ectopic glomerulus begins to develop. We have shown that this is due to abnormal targeting of Projection Neuron dendrites. However, how the Wnt5 protein guides the navigation of the Projection Neuron dendrites is presently unknown. The Goal of my project is to identify the wnt5-expressing cells in the developing antennal lobe. We propose to do this by inserting a construct from the yeast, called Gal4, into the wnt5 locus. After successful insertion, I plan to characterize wnt5 expression within the antennal lobe.



Andrew Goodspeed—I am excited to be joining the Brockport Biology Graduate program. I will be receiving my bachelor's degree in the spring. I was thrilled to be accepted into the 3+2 program and would recommend other students to do so as well. After getting my masters I hope to go into drug development. I will be working in Dr. Cook's great lab as I did this last spring and summer. I cannot wait to continue my work because it is very interesting and rewarding.



Nicole Muehleisen
I am excited to be able to continue my educational career at the College at Brockport. After attending FLCC for my A.S. degree in Biotechnology I came to Brockport to work on my B.S. During my time I here I was given the opportunity to do undergraduate research with Dr. Pelletier in his lab. I enjoyed the work I was doing so much that after graduation I decided to apply to the Graduate program here to further my education and continue with the research I'd been working on. I'm hoping that after this I will be able to find a job doing research, though I might dabble a bit in teaching as well.

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!