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Biology Newsletter: February 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

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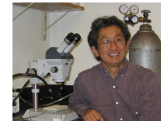
The State of the Department

To all of our returning students, welcome back for the Spring semester. To all of you coming to Brockport for the first time, welcome. Dr. Sia is all smiles as he takes his sabbatical at the U of Rochester, busily doing research. I will be taking over his duties as Chair until Fall 2011. Some of you may have noticed the absence of Dr. Tom Bonner from the halls of Lennon. He is officially retired, and is planning his next trout-fishing expedition. You may see him occasionally in Lennon, since he is still doing a few experiments. We wish him all the best in his retirement. Joining us this semester is Dr. Gregory Tomblin from the U of Rochester, where he is a senior research fellow. Dr. Tomblin is teaching Recombinant DNA. Welcome to the Department, Greg. There will be a number of events coming up this semester that I would like all

of you to be looking for. First, Dr. Halstead and the National Survey of Student Engagement (NSSE) will be contacting some of you to partake in the NSSE survey. The survey is conducted on-line and will only take about 20 minute, but will provide us with important information to help the university improve your college experience. If you are asked to do so, please take the survey. Like last semester, the Department will be hosting speakers in its seminar series. The seminars will be held on Wednesday afternoons 3:30-4:30 pm. Keep an eye out for the announcements. Sometime in March, Sergeant Jason DiGangi will be giving a presentation on the various scholarship programs funded by the U.S. Armed Forces for health-related graduate education. The cost of post-graduate

health education is very high, so their programs may be a viable option for some of you. Again, keep an eye out for the announcement. This year's Scholars Day is April 6. Many of you will be presenting, and I encourage all of you to attend. It is a great opportunity to see some of the research activities in the Department. I will be sending out an announcement for membership in the Biology Honorary Society, BETA BETA BETA. If you are interested, contact me. Here's wishing you all the best this semester. Hope to see you at our departmental activities. If you have any questions or issues that you would like to discuss with me, please don't hesitate in contacting me.

Stuart
Tsubota
Professor
and Acting Chair



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Special Notes:

Save the date! Brockport's 28th Annual Scholar's Day is April 6th! Several of our undergraduate and graduate students will be showcasing their research so please mark your calendars!

In Recognition of Dr. Tom Bonner

As many of you know, Dr. Tom Bonner is on leave this semester in preparation for his upcoming formal retirement. Dr. Bonner began teaching at SUNY Brockport in 1971, and over the years has taught numerous courses including Genetics, Electron Microscopy, Invertebrate Zoology, Parasitology, Human Biology and Introductory Biology among others. He says his greatest satisfaction is "... contributing to the growth and development, both academic, personal and social, of his students". He has **taught over 8,000 students** during his time at Brockport, and has valued his opportunity to interact with all of them. During his time at Brockport he had a research program principally concerned with how extracellular proteins, such as those secreted by organisms as diverse hookworms and zebra mussels, become organized outside the cell. His works were published in both National and International journals. He received the first NIH grant awarded to a member of the Brockport faculty.

After spending 1979-1980 at Leeds University as a Visiting Professor, he returned to Brockport and became Dean of General Education, including Delta College. He remained in that position for 12 years, returning to the Department in 1994. Since then, Dr. Bonner has been teaching principally Biology 1 and Human Biology. He has also been the Coordinator of the Med Tech Program. Even though Dr. Bonner is on leave from teaching, he continues to carry out active research with Drs. Cook and Lending and their students. He is returning to one of his first loves, being a student, and is currently enrolled in two courses at the RIT Osher Institute and is also taking a photography course at GCC.

—Dr. C. Lending



Jackie Walker to Attend Cornell Veterinary School



Since she could remember, the only career Jackie has ever wanted was to become a veterinarian. With the support of her family, a very dedicated work ethic, and many volunteer hours, Jackie a Biology major with a Chemistry minor, is seeing her dream come true.

The process to being accepted at such a prestigious vet school is not an easy one. Applicants must have over 400 hours experience with a vet. For the past three years Jackie has worked as a vet tech assistant and was able to accumulate over an astonishing 1,600 hours! She is a firm believer that her experience hours are what made her application shine and really put her out there. She recommends that anyone who is thinking of applying to vet school, especially Cornell, gets more than the required 400 hours.

Veterinary schools want to see at least three types of experience so it's important to get started quickly. Along with having experience, the applicant must take the Graduate Record Examination (GRE). For Cornell, scores above the 70th percentile in both the verbal and math portions of the GRE are suggested. Naturally, GPA is also very important and Jackie was able to maintain a 3.8 GPA, which is the average GPA of those accepted at Cornell. The quality of your academic program and the undergraduate school you attend is always looked at when you apply to Cornell. Up to five letters of recommendation may also be submitted with an application. Applicants

for the Cornell Vet School apply the fall of their senior year and find out if they are accepted in January.

Jackie is the first student in over 22 years who has been accepted to the Cornell Vet School from the College at Brockport. This year 1,000 people applied to the Cornell Vet School and 92 students were accepted. Roughly 85% of the students accepted are Ph.D. or M.S. students, leaving Jackie in the 15% of students who will enter Cornell with only a B.S. degree.

In order to set her academic experience apart from other applicants, Jackie became involved in the Honors program and has done research with both Dr. Sia (summer '10) and Dr. Tsubota. For extra-curricular activities, Jackie is involved in the Pre-Professional Club on campus as the Vice President, she is co-secretary of the Chemistry Club, and is a member of the Honors Club. Jackie is also a teaching assistant (TA) for General Chemistry I and Organic Chemistry II. Making her accomplishments all the more impressive, Jackie has been able to maintain a work schedule of 15 hours a week outside of school work and activities.

In order to prepare it's students, the College at Brockport has a Pre-Professional committee that supplies mock interviews, writes letters of recommendation, and provides a support network for students who are pre-medicine, pre-veterinary, and pre-dentistry. This committee has helped to prepare Jackie, but was worried that her decision to go to MCC the first two years of her college career might hurt to changes of getting accepted. This has made Jackie even happier with her place at Cornell and she stated with a smile, "I did it my way and it worked."

At home, Jackie has two dogs, three cats and a lizard. She believes that having so many pets has helped her realize her love of animals and passion in veterinary medicine. When asked if she was a cat person or dog person, Jackie claims that she is a cat person but loves all animals. She is a large proponent of the idea that "if you be-

lieve you can do it, you can" and that you shouldn't "ever let people tell you you can't."

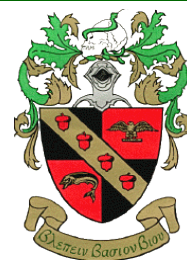
Jackie's future goals include working with small animals and opening her own practice. She also hopes to have an adoption clinic and save all the disadvantaged animals. Ideally, Jackie would like to combine travel with work so she can help more animals.

Things that Jackie believe contributed to her success include lots of support from home, specifically from her Mom, and having many people read her personal statement.

If she had to do it over again, Jackie would want to start things sooner and submit her application earlier. Overall, Jackie is very happy that she was accepted to Cornell and sees the opportunity as "overwhelming, but exciting."

- Interview by Damiene Denner ('12)

Brockport's Omega Upsilon Chapter of the Beta Beta Beta Biological Honor Society Is Seeking New Inductees



Academic requirements:

- At least 3 semesters of biology coursework;
- a cumulative GPA of 3.0;
- a Biology GPA of ≥ 3.25 ; and
- be an active member, or plan to be an active member of the biology club

Interested individuals should contact Dr. Stuart Tsubota at stsubota@brockport.edu.

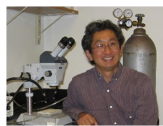
Department Achievements

Faculty Updates

- **Dr. Laurie Cook** has a fantastic team of seven students working with her this semester. They have been busy presenting our work at a variety of local and national forums. She welcomes **Christine Sharlow** and **Andrew Goodspeed** to the lab this Spring. Dr. Cook's lab has been busy collaborating with Dr's Bonner and Lending on some electron microscopy studies, and they purchased a new fluorescence plate reader in December.



- **Dr. Stuart Tsubota** reports that his two grad students, **Hannah Cushman** and **Lisa Dishaw**, are working busily in the lab. Additionally, this semester three undergraduates have joined his team: **Dominic Motyl**, **Melanie Roth**, and **Jackie Walker**. They will all be presenting at Scholars Day.



- **Dr. Adam Rich** and his team are working, slowly and surely, on several projects focused on the regulation of gastrointestinal motility in humans. **Jenn Strouse** is having trouble focusing on her project since she will be leaving this spring for Michigan and Vet. School! Her thesis work is nearly complete and is focused on the temporal expression patterns for several genes that might influence ICC development. Everyone else is in the thick of it, analyzing data and deciding what experiments are next. Projects will be described at Scholars Day. In addition to Jenn leaving, **Kevin Tylock** and **Brett Warren** are eager to graduate this Spring and leave for graduate school in the fall. Finally, another long-time lab member **Lauren Saeva** graduated in December and she is getting married in March. It is very nice to see everyone moving on to big-



ger and better things!

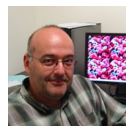
- **Dr. Huey Hing** would like to welcome **Jay-Christian Helt**, a new graduate student to his laboratory. Additionally, he'd like to announce that **Rebekah Edgell** was invited to present at NCUR in April.



- **Dr. Rey Sia** would like to congratulate **Jackie Walker** for her acceptance into Cornell Veterinary School. It's a remarkable achievement! He announces that **Martin Bontrager** and **Jackie Walker** are presenting their research at Scholar's Day 2011. He reports that he is keeping busy doing site-directed mutagenesis on RAD52 start codons, Western Blots to localize an HA tagged Pol4 protein to the mitochondria, and disruptions of genes that may function to stabilize the mitochondrial genome.



- **Dr. Michel Pelletier** has a team of 7 undergraduates: **Jenna Wiemer**, **Nicole Muehleisen**, **Ambler Karpie**, **Amanda Martin**, **Jennifer McQuade**, **Ashley Dungan**, **Hannah Lipshutz** and 2 graduate students this semester: **Alyssa Frainier** and **Dominic Munini**. He will be taking the entire lab to the Molecular Pathogenesis meeting in Buffalo on April 29th.



- **Dr. Craig Lending** presented a poster together with E. Gregory (Rollins College), J. Ellis (Presbyterian College), and A. Orenstein (Centary College) at the National Association of Biology Teachers Annual Conference in Minnesota, Nov 3-6 2010 titled *Is There a National Consensus on the Topics and Skills for Introductory Biology?* Additionally three students join him in developing a case study for evolutionary adaptation between C3 and C4 plants: **Michael Weisenburg**, **Jason Toland**, **Jonathan Furmanek**.



Student Presentations

- **Danielle Feligno**, **Jay Moden**, (both presented) and **Katrina Haude** co-authored a poster at the 50th Annual American Society for Cell Biology Meeting in Philadelphia, PA, December, 2010.

- **Michael Ceresaro**, **Luke Krembs**, **Martin Bontrager**, **Amanda Diamond**, and **Brett Warren** all presented posters at the Rochester Academy of Sciences Fall Annual Paper Session hosted by RIT, November 2010.

- **Jennifer Strouse**, **Danielle Feligno**, **Katrina Haude**, and **Jay Moden** gave oral presentations at the Rochester Academy of Sciences Fall Annual Paper Session hosted by RIT, November 2010.

- Adam Rich, **Jessica Ouder Kirk (alumna)**, **Jennifer Strouse**, & **Scott Gibbons (alumnus)** in collaboration with G. Farrugia at the Mayo Clinic College of Medicine, in Rochester, MN had an abstract accepted to Digestive Diseases Week, Chicago, IL, May 7-11 titled: *Zebrafish ICC are anoctamin-1 positive*.

- **Jay Moden** has been invited to present a poster summarizing work done by **Danielle Feligno**, **Katrina Haude** and himself at Research that Matters: An Exposition of Graduate Research in SUNY and CUNY, March 8th in Albany, NY.

- **Rebekah Edgell**, **Jenna Wiemer**, **Katrina Haude** **Martin Bontrager** and **Luke Krembs** were invited to present their research at the National Council for Undergraduate Research at Ithaca College in April, 2011.

- **Jenna Wiemer** will be presenting at the Kinetoplastid Molecular Cell Biology Meeting, April 8-12, 2011 in Woods Hole, MA.

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!

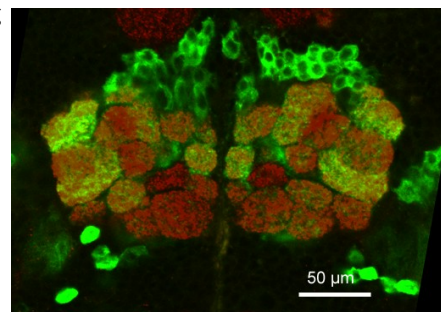
Medical Technology Students Continue to Thrive

Congratulations to **Jenna Wiemer, Matt Nolan and Michael Weisenburg** who will begin their Medical Technology Clinical Internship at Rochester General Hospital starting this Fall. Additionally, congratulations to **Laura Kobielski**, who will be attending the WCA School of Medical Technology in Jamestown, NY. Our current RGH Class: **Jeff Mackasamie, Jessica McNitt,** and **Mike Springer** are doing well and we wish them the best of luck on their Board Certification Exam!



Confocal Microscope Enhances Imaging Capabilities

The new Zeiss laser scanning microscope (LSM) is up and running in Lennon Hall! Confocal microscopy is a technique that enables capture of high-resolution optical images. Using a laser allows specimens to be optically sectioned, and images may be captured that are underneath the surface of the tissue. For example, nerve and pacemaker cells in the zebrafish gastrointestinal tract are sandwiched between layers of smooth muscle cells. Powerful laser light penetrates the layers, and images of nerve and pacemaker cells can be captured. Similarly, structures in the drosophila brain and connections between olfactory neurons and ganglia that are deep in the brain can be observed. Even the spatial resolution of cellular organelles in single cells grown in culture can dramatically improved when compared to fluorescence microscopy. This is a common technique in research laboratories at all major universities and we are pleased to be able to use the technique for research projects at Brockport, and to teach students how to use the microscope and how to interpret the resulting images.



Shown is a photomicrograph of a pair of *Drosophila* antennal lobes that Dr. Hing captured with our Laser Scanning Confocal Microscope at 400X magnification. It shows AL intrinsic neurons (also called projection neurons) in green innervating specific subregions of the antennal lobe neuropil, shown in red. His lab is interested in understanding how the pattern of innervation is produced developmentally.

Get your Graduate Degree in Biology at Brockport!

What are your plans after you graduate? Have you considered the Master's of Science at Brockport, or elsewhere? A MS degree will help you to grow, to learn, and ultimately it will make you more competitive for the job market or application to professional school. See our website, and talk to your professors, NOW, if you are interested! There are several Biology MS programs at Brockport. All of these will better prepare you for lab work, teaching you current, marketable techniques. More importantly, time spent in the Master's program, and time spent in the research environment, will help to develop critical reasoning and problem solving skills. Recent graduates have entered Physician's Assistant programs, obtained jobs in local industry and at the University of Rochester. Don't procrastinate!



The College at
BROCKPORT
STATE UNIVERSITY OF NEW YORK

Student Successes

- **Sharlene Bakewicz** ('09) recently started a job at Strong Hospital in the specimen management lab.
- **Sherri Profeta (Baconcini)** ('10) is working at ACM Medical Laboratory in their Chemistry Department doing ELISA essays.
- **Jackie Walker** accepted an offer to Cornell Vet School.
- **Jennifer Strouse** accepted an offer to attend Vet School at the Michigan State University in East Lansing.
- **Nolan Flores** (Alumnus) is teaching AP Biology at Wayne County High School.
- **Nick Pecora** ('08) accepted a position at Johnson/Johnson Ortho-Clinical Diagnostics doing quality control on blood analyzers.

Spring Semester Announcements

- Graduating seniors: Graduation Data Cards are no longer used...go online to Registration and Records by Midterm of your final semester to apply for graduation!
- Brockport's 27th Annual Scholar's Day is April 7th, 2009. Mark your calendars!
- Applications for Biology's Graduate Program in are accepted on a rolling basis. Applying early ensures best consideration for paid Teaching Assistantships.
- Faculty research labs are actively recruiting for undergraduates interested in independent research (BIO 424) experiences and graduate students working towards a M.S. degree. If you are interested, contact each faculty member directly for information.

SUPPORT THE NEXT GENERATION OF BIOLOGY STUDENTS, PLEASE.

Dear Alumni,

Over the years, ***The Philosophy and Mission of the Department of Biology has remained unchanged:***

The mission of the Department of Biology is to provide quality educational experiences for our students that are integrated with and appropriate to a comprehensive College of Arts and Sciences. Our academic activities are designed to provide students with an awareness of the impact and relevance of biologically related topics in society, to provide theoretical and practical knowledge of biological phenomena, and to provide the skills necessary for employment and post-graduate studies.

The Biology Department is strongly committed to faculty and student research at both the undergraduate and M.S levels. *The graduate program provides advanced education and skill development and also strengthens our undergraduate academic environment.*

In the last few years it has become increasingly difficult to accomplish that part of the mission which strives to provide authentic research experiences for students. If you live in New York State, or I guess any other, you recognize the economic disaster that has befallen us and State funds for SUNY in general, and Brockport in particular, have been cut drastically. Fortunately, our Biology faculty, as a group, have been more successful than any group of faculty in the past in securing grants from NIH and NSF to support research experiences for our students. All the grants include funds, to a greater or lesser degree, to purchase supplies, reagents, and provide small summer stipends for our students to do research, not only during the standard academic year, but also in the summer. In any given year there are between 70-80 students registered for research courses. With about 280 majors in Biology it is clear that every interested student is able to carry out meaningful, authentic scientific research. But those grants are not nearly sufficient to support the entire research program for students.

Many alumni, together with current and former Brockport Biology faculty, recognize the role education at Brockport plays in propelling them and their students into successful careers. Together, we can help to make a difference by donating funds to our Department so we can continue delivering on our commitment to a quality education for our students.

If you would be interested in helping current and future Biology majors, we encourage you to follow their lead.

Sincerely,

The Biology Faculty

(Stuart Tsubota, Craig Lending, Adam Rich, Rey Sia, Laurie Cook, Huey Hing, and Michel Pelletier)

For more information on Giving, please contact:

Dr. Stuart Tsubota
Acting Chair, Department of Biology
stsubota@brockport.edu