

5-1-2010

Biology Newsletter: May 2010

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 2, Issue 3

May, 2010

The State of the Department

Another academic year has flown by. If you have been reading the Biology departmental newsletters, which you all should be, you have been privy to all of the departmental changes as well as faculty and student accomplishments over this past year. The end of the year is when many of the honors and awards are bestowed on deserving students. This year was a great year for awards received by our majors. As you read on, you will learn that students from the Department of Biology were recipients of the most prestigious college and SUNY-wide awards. The most prestigious awards include The SUNY Chancellor's Award for Student Excellence (only approx. 220 students of the more than 23,000 SUNY-wide students are

recipients, two recipients from Biology), The President's Citation Award (only 1 recipient of this college-wide award), The School of Science and Mathematics Award (only 1 recipient). Other awards include Sigma Xi Award in Undergraduate Research, Honors Program Scholar Award, and several departmental awards. A common theme for the success of these students is that they all had independent research experience. The college has made a strong commitment to increase the research opportunities available for its students with the creation last year of the **Undergraduate Summer Research Internship**. The **Summer 2010** opportunity will be the second summer that this program has been offered. An even stronger commitment to student

research opportunities was made for this second summer by increasing the number of research positions available with each including housing and a competitive stipend. In addition, the Department of Biology has also secured funds to establish the **Paul and Agnes Bower Fellowship** that will support a deserving Biology major's summer research. To those students who will be graduating, the faculty wishes you the very best in your future endeavors. For those of you returning, try to have a relaxing summer and the faculty looks forward to seeing you in the Fall.



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Special Notes:

Congratulations to our graduating seniors! Have a wonderful summer and we'll look forward to a successful 2010-2011 academic year!

Paul and Agnes Bower Biology Research Scholarship Recipient for Summer 2010

The Bower Research Scholarship is intended to support and enhance the opportunity for undergraduate students to participate in valuable learning experiences beyond the classroom. The Scholarship is available to a student engaged in collaborative research with a faculty mentor during the summer and who continues that research into the academic year. The goal of the program is to foster undergraduate research experiences on campus, and to assist students who otherwise could not participate in summer research. The scholarship supports an undergraduate student majoring in Biology to participate in

research, scholarly and creative activities with a faculty mentor. Students who receive the scholarship are expected to carry out research for 40 hr/wk for 8 weeks of the summer and continue the research during the following academic year. Credit through independent study or research experience is available during the academic year. This year's recipient is a junior, **Martin Bontrager**, with previous research experience in industry. He has been carrying out research under the mentorship of Dr. Sia for the past semester. During his studies at Brockport, Mr. Bontrager has maintained a perfect 4.0 GPA. Mar-

tin will be identifying Rad52p protein isoforms via site-directed mutagenesis. The family of Rad52p proteins participates in repairing damage to chromosomal DNA in the nucleus. Mitochondria, the "powerhouse" of the cell, also contain DNA and have a repair mechanism to fix DNA damage. It is not known whether the Rad52p proteins are involved in mitochondrial DNA repair. Mr. Bontrager will be attempting to determine whether the protein Rad52p is involved in mitochondrial DNA repair.



Biology Students Receive Prestigious 2010 Awards

Patrick Donohue is no typical Brockport student. At first it may seem he's your standard hardworking science major, just a quick glimpse at his resume tells you this kid means business. He sports nearly perfect 4.0 GPA and is involved in countless activities, including two honor societies, tutoring, lab teaching assistant, independent research, and an abundance of scholarships and awards. The most recent award, and arguably the most noteworthy, was his Chancellor's Award. This award is given to only five other students at Brockport and recognizes students who demonstrate the utmost academic excellence, leadership, and community service. Patrick's impressive rather lengthy resume, support his hardworking focused persona. Patrick is truly worthy of this prestigious award. Pat-

rick is notorious for his kindness and helpfulness. Being a tutor is one thing, but making yourself accessible and helping when you're not "on the clock" is truly admirable. He genuinely places success of others highly amongst his own priorities. Honestly, with grades and achievements aside, Patrick's humility sets him apart from all the rest. He recognizes that he is in a very competitive major and was surprised that he was selected from a pool of many qualified peers. When asked about what lead to his success, he believes hard work goes hand-in-hand with attitude.

When asked about his success and his achievements at Brockport Patrick explains, "I have spent the past four years working very hard to make myself successful and dreaming of going to med-school. I would like

future students to know that education is a process that you must participate actively in and continue throughout your life."



Patrick serves as an impressive example to current and future students. He has epitomized hard work and success throughout his four years at Brockport. He is a gentleman and a scholar and will be truly missed.

By: L Krembs and R LaFountain

Natalie Pilakouta an environmental science and biology double major from Nicosia, Cyprus, was chosen for two prestigious College awards this year: the School of Science and Mathematics Award and the Chancellor's Award for Student Excellence. I had the chance to interview Natalie and below he shares with us their conversation:

What brought you to Brockport: *Initially, my advisor at Fulbright suggested that I apply to Brockport and after being awarded a full scholarship by the college, it was an easy decision for me!*

How you decided on your major: *During high school, I was always fascinated by my science*

courses. After taking advanced courses in biology, I became certain that was the field I was most interested in.

Why a dual major: *Towards the end of my sophomore year, I realized that in order to become successful in the field I wanted to pursue during my graduate studies, ecology and evolutionary biology, I needed to gain a variety of lab and field experiences and have knowledge in topics in both biological sciences and environmental science.*

What do you like best about biology: *Unlike other sciences, biology allows me to study and work with living organisms, which I find very fascinating!*

Positive experiences here at Brockport that may stand out

in your mind: *Serving as a tutor for the Student Learning Center and as a teaching assistant at the Department of Chemistry were very rewarding experiences that confirmed my love for teaching and reinforced my aspiration to become a professor.*

Where to now: *Next fall, I will begin my doctoral studies in ecology and evolutionary biology at Yale University.*

-By: M Weisenburg



BIO Receives Funding for New Confocal Microscope

A new laser scanning confocal microscope from Zeiss has been purchased and will be up and running by July 1! This was all made possible with an NIH grant to Dr. Adam Rich, support from the College at Brockport, and from Dr. Hing's funding. Students and their faculty mentors will use the microscope to obtain high-resolution fluorescent images to determine the location of cells within tissues, proteins within sub cellular domains, or the precise location of mRNA within intact tissues. Confocal microscopes utilize powerful lasers to penetrate biological samples with light, and ultra-

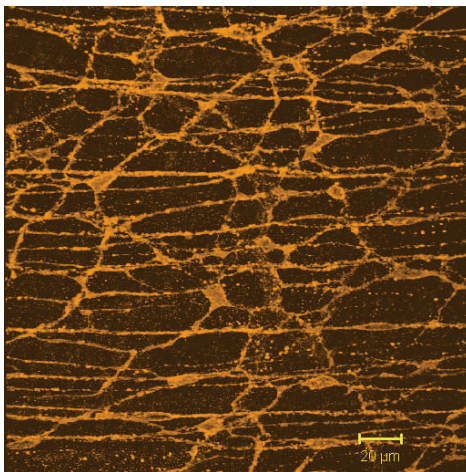


Image was captured using the Zeiss LSM 700. It is the zebrafish GI tract, intact tissue from an adult. These cells are hard to see with your eyes through the microscope but the Laser Scanning Microscope can de-blur the image, removing out-of-plane fluorescence, resulting in this beautiful image. It is really 24 separate images that have been put 'back-together'.

sensitive digital cameras collect in-focus light while out-of-focus light is blocked. In short, the technique effectively removes blurriness from collected images allowing sub-cellular structures to be clearly visualized. Acquisition of the Zeiss 700 laser scanning confocal microscope with ZEN software modernizes our imaging capability, extending and stimulating our research capability. Students will have an opportunity to train with modern cutting edge equipment which will facilitate their ability to compete for jobs and for entry to graduate schools.

Departmental Honors and Awards Announced

- **Stephanie Branigan was selected as the recipient of the Elmer J. Cloutier Scholarship** for a junior or senior with potential for success in grad school or professional school. She holds a 3.78 GPA and is a double major in Biology and Spanish with a minor in Chemistry. She will be attending medical school this coming fall.
- **Ranae Ranzenbach** is this year's

recipient of the Charles S. Thomas Memorial Scholarship for the student with the highest average in BIO111.

- This year, **Michele Sanford was selected as the recipient of the Francis Claffey Award**, which is awarded to a senior demonstrating academic excellence. Kayla holds a 3.89 overall GPA.
- **Sigma Xi Research Awards for Undergraduate Research** went to

Stephanie Branigan, Patrick Donohue, Mike Nguyen, Natalie Pilakouta, Laura Shum, Kelly Shooping, Laura Sudol and Girija Vijayaghavan

- This year's **Departmental Scholar is Girija Vijayagravan**.

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

Please join us on Saturday, May 15th in the Lobby of Lennon Hall from 10:30 to 11:30 am for a Brunch Courtesy of the Department of Biology in Honor of our Graduates!

Summer 2010 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 has been high this year.

6/1/10-7/3/10

BIO 111 Principles of Biology

BIO 201 General Biology I

BIO 321 Anatomy and Physiology I

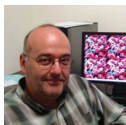
7/6/10-8/7/10

BIO 322 Anatomy and Physiology II

Department Achievements

Faculty Updates

- **Dr. Michel Pelletier** was awarded a scholarly incentive grant in the amount of \$500 which will help cover part of an undergraduate research student salary this summer.



Jenna Wiemer, received an undergraduate summer research internship to continue working in his lab through summer characterizing phospholipid biogenesis in *Trypanosoma brucei*. Additionally, **Hannah Lipshutz and Joanna Almeter** will be participating in summer research projects.

- **Dr. Rey Sia** would like to congratulate **Luke Krems** for receiving a summer undergraduate research fellowship to study the role of the TCA cycle enzyme, aconitase, and its role in maintaining mitochondrial genome integrity in his lab. Also, congratulations to **Michael-John Beltjar** for completing his Honors thesis!



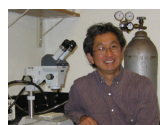
- **Dr. Laurie Cook** would like to congratulate **Katrina Haude** for receiving a summer undergraduate research fellowship to study the role of GRK2 in the regulation of MCH receptor desensitization in her lab. Also, congratulations to **Stephanie Branigan** and **Michele Sanford** for completing their Honors Theses!



- **Dr. Adam Rich** submitted an abstract with his student **Jeff Sattora** to present at the 9th International Conference on Zebrafish Development and Genetics in Madison, WI this coming June. It is titled: *Kit ligand a knockdown inhibits development of coordinated gastrointestinal motility patterns in Zebrafish larvae*. Congratulations to **Jessica Ouder Kirk** for completing her Honors thesis.



- **Dr. Stuart Tsubota** recently attended the Upstate New York Biomedical Engineering Career Conference 2010 at the University of Rochester. He will also be presenting at the National Conference of State Legislatures - Bringing Science and Business Together: SUNY's Professional Science Masters Degree at the State Capitol, Albany, NY, May 17th. On a lighter note, Dr. Tsubota also performed with BIODANCE in a Benefit for Haiti on February 28th in Rochester.



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The College at Brockport Department of Biology Page

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Student Successes

- **Charles Grizzanti, Jeff Mack-samie, Jessica McNitt and Mike Springer** were accepted into Rochester General Hospital's Medical Technology Program.
- **Kevin Ray (B.S.)** will be attending the Chicago College of Osteopathic Medicine at Midwestern University in the fall.
- **Jessica Ouder Kirk** will begin working on her Ph.D. in Neuroscience at SUNY Upstate Medical Center in Syracuse, NY this fall.
- **Jeff Sattora** will begin a Physician's Assistant Program at LeMoyne College in Syracuse, NY.
- **Stacy Hess (B.S., M.S.)** has accepted a position at Novartis in Boston, MA working in a zebrafish group.
- **Natalie Pilakouta** will begin a PhD program in Ecology and Evolutionary Biology at Yale University.
- **Michael Nguyen and Michele Sanford** were accepted into the Pharmacy Program at St. John Fisher College.
- **Anthony Sacca** will begin working on his Masters degree at University at Buffalo.
- **Stephanie Branigan** will be beginning a M.D. program at SUNY Upstate Medical Center in Syracuse, NY this fall.
- **Sergio Dilone** will begin the Master of Medical Science Physician Assistant program at Salus University.
- **Kathleen A. Landers-Appell (B.S.)** will begin her Master of Arts in Education with Secondary Education certification at The University of Michigan at Ann Arbor this summer.
- **Amanda Murray** will begin working towards her Diagnostic Medical Sonographer degree in RIT's Ultrasound degree program.
- **Valerie Parnell (B.S.)** began a lab tech position at the University of Rochester earlier in this spring semester.

Student Presentations

- **Laura Shum, Kevin Tylock, Lauren Laeva and Girija Vijayaraghavan** presented their summer research projects at the National Council for Undergraduate Research Annual Meeting in Montana, April, 2010.
- **Hannah Cushman and Nick Rizzo (M.S.)** presented a poster at the 51st Annual Drosophila Research Conference in Wash, DC in April entitled, "Deletion and bioinformatic analyses of the promoter region of the enhancer of rudimentary gene reveal that zeste is a transcriptional activator of e(r).

Come and Join the Pre-professional Health Club!



If you're a student planning on going on to a career as a doctor, dentist, veterinarian, pharmacist, physician assistant, or any other professional health science career, you might want to check out Brockport's Pre-Professional Health club!

The club provides a support structure for students interested in pursuing a future career in medicine, as well as helping them to become informed of what must be done to accomplish their goals and aspirations. Our organization builds community among pre-professional health undergraduates through informational presentations and seminars, field trips, volunteer work, and fundraising.

Over the past few semesters, we have had a number of presentations and seminars, among them:

- Sonya Burdina from the St. Kitts University of Medical and Health Sciences admissions department talked about tips for the admissions process.
- Dr. Patricia Bomba who discussed health proxies, their relation to the medical field, and the impor-

tance of young people obtaining them.

- Dr. Richard O'Brocta, St. John Fisher Assistant Dean for Student Affairs, Wegmans School of Pharmacy.
- Maggie Crosswhite, admissions recruiter from Lake Erie College of Osteopathic Medicine.
- An informational panel presentation for pre-professional undergrads, consisting of four Brockport undergraduates who were currently in the application process.
- An informational panel presentation consisting of two dentists, a pharmacist, a physician assistant, and a veterinarian.

We also recently took a tour of the University of Rochester Medical School, and have plans to tour other medical schools in the future!

The pre-professional club also provides opportunities to get involved in fundraising and volunteer work (which can be an important part of the application process), including:

- House building/repair with Habitat for Humanity in the city of Rochester.
- Sorting party for RUMS (Recycle of Unused Medical Supplies) through INTERVOL.
- We raised funds for the Heifer Foundation to raise awareness for the less fortunate in underdeveloped countries, by hosting a simple soup lunch.
- We raise money for our club charity, Doctors without Borders.

- We participated in the 2010 Brockport Polar Plunge, which raises money for the Special Olympics.

Occasionally, we also do fun stuff. Recently we had a softball match against the chemistry club. We also have end-of-semester parties!

So how does one join the Pre-professional club? The best way is to just stop by one of our meetings! We meet every Thursday at 5 PM in the Biology student lounge, on the second floor of Lennon Hall. You can also join in our Angel Group (click "Find a Group" under the Community Groups section and search "professional"), or email or President, Drew Tschetter (dtschl@brockport.edu), for more information or to get on the mailing list. Also, check out our new page on the BSG website under Academic Club Council for news and updates!

-By: J Moore

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



Sergio Dilone Jr.
Rebekah Edgell
Katrina Haude
Rich LaFountain
Michael T. Nguyen
Natalie Pilakouta
Jackie Walker

Consider Giving the Gift of a Research Experience

In the last few years it has become increasingly difficult 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 young 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. Please consider helping to support our students' research opportunities by contacting Dr. Tom Bonner (tbonner@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>