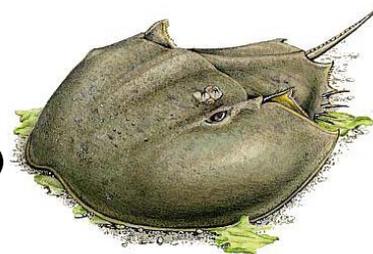


# LIMULUS



## NEWSLETTER

Department of Biological Sciences, Wagner College, Staten Island, NY

Volume 2007, Issue Fall-02

November, 2007

### LETTER FROM THE EDITOR

#### THE LIMULUS IS GROWING

Since a couple of weeks the animal community in one of the department's seawater tanks has a new member that may be of some meaning for our newsletter: A little horseshoe crab. After doing its duty as a demonstration in a biodiversity class, the *LIMULUS polyphemus* was "set free" into its new home. At first it appeared to not like the new environment too much though. Through the unlimited academic wisdom of some members of the biology faculty it was determined that the ground of the tank was too rocky. Meanwhile a sandy area has been established in the tank and the horseshoe crab takes advantage of the new condition by digging into the ground and becoming a master of disguise.



Let us hope that the horseshoe crab in the tank grows as well as our LIMULUS. In this second issue the newsletter significantly grew from 3 to 6 pages. I admit that I cheated a bit by maintaining all the initial material, but, finally, this is the actual growth. Anyway, I just added the new contributions that are marked like this paragraph, making the reading of the news a little more convenient. This procedure also facilitates the production of the first special issue which is planned to appear in January. On the other hand, we definitely need to increase the number of new contributions in order to generate and maintain stand-alone monthly issues. I hope the news in this issue will stimulate everybody in this regard and generate your ideas for articles or short announcements.

A Biology Club has been founded and Tri Beta makes its powerful appearance in the newsletter. The section that announces publications and presentations has substantially grown, and there are some new contributions under EXPERIENCES. I especially recommend to read the contribution that explores the "prehistoric" meaning of hippo poop. I inserted a cartoon from my own collection, but I hope that my own contributions will become more and more seldom from issue to issue. There were no "LETTERS TO THE EDITOR". Also the "BIOLOGY STUDENT NEWS" and some other sections still remain empty.

Last time I forgot to indicate the deadline for contributions to the next newsletter and I don't want to make this mistake again. For obvious reasons the deadline for the December issue is earlier. Please, send your contribution until December 17<sup>th</sup> to [horst.onken@wagner.edu](mailto:horst.onken@wagner.edu).

I wish everybody good luck for the finals and a great winter break. It may appear a little early, but time passes fast. So, let me also include my

MERRY CHRISTMAS and A HAPPY NEW YEAR.

Dr. Horst Onken

The Editor

### LETTER FROM THE CHAIR

*This section will be used for a note from Dr. Palestis, the Chair of the Department of Biological Sciences, for the special issue in January.*

### LETTERS TO THE EDITOR

*This section may be used to publish selected messages sent to the editor by readers. These notes may be responses or comments to articles in former issues, but could also relate to news or events.*

*YOUR CONTRIBUTION COULD BE HERE!*

### BIOLOGY STUDENT NEWS

*A section for news about students of our department.*

*YOUR CONTRIBUTION COULD BE HERE!*

### BIOLOGY STAFF AND FACULTY NEWS

*A section for news about staff and faculty members of our department.*





## WELCOME PROFESSOR BEECHER



Since the beginning of the Fall semester 2007 the Department of Biological Sciences has a new Adjunct Assistant Professor. Professor Sierra D. Beecher earned her Bachelor of Science in Biology in 2004 and her Master of Science in Environmental Science and Regional Planning in 2006 at Washington State University in Pullman, WA.

In this semester, Professor Beecher teaches Human Biology (BI 120) for non-science majors and Forms and Functions of Life (BI 217). In the spring semester 2008, Professor Beecher will teach classes that relate more closely to her interests in environmental sciences.

Welcome to the Department of Biological Sciences at Wagner College!

*Contributed by Dr. Onken*

**YOUR CONTRIBUTION ABOUT A FACULTY MEMBER  
COULD BE HERE!**

## CURRICULUM NEWS

*News about the curricula of the different programs of the department will be posted here.*



At the last department meeting, the faculty of the Department of Biological Sciences has decided to update some of the course descriptions in the Undergraduate & Graduate Bulletin. Respective proposals were made to the Academic Policy Committee (APC). As soon as respective decisions are made the course descriptions will be updated in the Bulletin and on the website of the department.

*Contributed by Dr. Onken*

## BIOLOGY CLUB NEWS



A Biology Club has been founded in November. The officers of the Club are Sejmir Izeiroski (President), Cassandra Bray (Vice President), Melissa Alvarez (Secretary), Lauren Levy (Treasurer), and Shannon O'Neill (SGA representative). Accreditation with the Student Government Association of Wagner College is planned for the spring semester. If you are interested in a membership or in further details about the new club, please contact Sejmir Izeiroski ([sejmir.izeirovski@wagner.edu](mailto:sejmir.izeirovski@wagner.edu)) or Melissa Alvarez ([melissa.alvarez@wagner.edu](mailto:melissa.alvarez@wagner.edu)).

*Contributed by Dr. Onken*

## TRI BETA NEWS



Beta Beta Beta Biological Honor Society has had a busy semester. Here are some of the awesome activities we have done.

On November 9<sup>th</sup>, 2007, Mrs. Falabella's third grade students from St. Christopher's School on Staten Island came to Wag-



ner College to participate in Connect Science. Connect Science is Beta Beta Beta Biological Honor Society's annual community program where college students perform science experiments with younger children to show them how exciting science

can be. This year, we had a very successful event and here are some of the cool experiments the members did.

Making colorful gak was done by Allie Mercil and Chris Cappelli. Paper chromatography with Kool-Aid was done by Lauren Maltese. An experiment with magnetic fields and optical illusions was done by Yulia Seldina and Kim Karper. An exploding volcano was made by Dina Hussam and Kayla Wong. A buoyancy experiment was done by Lauren Carasso and then by Chris Cappelli. Becky Ginnattasio and Christina Lamb taught the students how to use a microscope and gave a tour of the building, including the zebrafish room in the basement. It was a blast!

During this semester, Tri Beta participated in four other service projects. Some of our members participated in the annual Tunnel to Towers Run from Brooklyn to Manhattan to commemorate the anniversary of September 11<sup>th</sup>. Also, many of our members including Tanya Modica, Yulia Seldina, Dina Hussam, Justina Yuen, Ryan Rogers, Lauren Maltese, and Christina Lamb walked in the annual Making Strides Against Breast Cancer at Clove Lakes Park.

On campus, Tri Beta teamed up with the Chemistry Honor Society to create a "mad science laboratory" for the Haunted Hallways trick-or-treat extravaganza. As a group, we led the young children from Staten Island through a maze of skeletons, hearts, brains, and real eyeballs. The kids loved it, but some of the parents looked a little sick! ☺

Most recently, Tri-Beta participated in the annual ODK turkey drive. This year the challenge was to collect canned goods and create a structure representing your organization. In true Biology fashion, Tri Beta created a DNA double helix that was undergoing replication. The event collected over 200 cans for The Seamen's Society for Children and Families.

It has been a wonderful semester, and all of the members of Beta Beta Beta have been truly magnificent! We can't wait to continue our work next semester.

*Contributed by Christina Lamb*





## OPPORTUNITIES

This section of the newsletter is open to faculty or staff to announce opportunities for students in their research. Internships may be recommended here. Volunteers may be found through postings in this section.

### RESEARCH WITH MOSQUITOES AND CRABS



Dr. Onken offers research opportunities for students in the frame of a project in which he collaborates with scientists from Washington

State University, the University of Idaho, and the University of Alberta (Edmonton, CA). The project is funded by the National Institute of Health and studies the physiology of the midgut of larval yellow fever mosquitoes (*Aedes aegypti*). Mosquitoes are vectors of a number of parasites, transmit devastating diseases like malaria, yellow fever and dengue, and are a major threat to the health of billions of people on our planet. The principle investigators of this project address larval mosquitoes, because it appears more straight forward to fight these vectors as long as they are confined in an aquatic habitat.



In collaboration with colleagues from the US (Mt. Desert Island Biological Laboratories, Maine), Brazil (University of São Paulo in Ribeirão Preto, University of Paraná in Curitiba) and

Canada (University of Manitoba in Winnipeg) Dr. Onken pursues research with Crustacea related to the osmoregulatory capacities and mechanisms of crabs. Together with Dr. Alaudin (Chemistry) and Professor Beecher (Biology), an ecophysiological study is in an early stage of planning.

Dr. Onken can offer research opportunities for 2-3 students. If interested contact Dr. Onken in his office (Megerle Science Hall Room 411), lab (Megerle Science Hall Room 406) or via e-mail ([horst.onken@wagner.edu](mailto:horst.onken@wagner.edu)) or phone 420-4211.

Contributed by Dr. Onken

**THE OPPORTUNITIES YOU OFFER COULD BE HERE!**

## EXPERIENCES

### CLEAN-UP OF BLAZING STAR BURIAL GROUND



The Blazing Star Burial Ground is located on Arthur Kill Road in Rossville with a view on the ship graveyard that has attracted many photographers to document this "natural art" of an industrialized society. The weather was threatening an initiative of the Department of Biological Sciences to clean the burial ground. Heavy rain and gusty winds



made the first trial on October 27 impossible. However, on November 3 loads of candy wrappers and fast food utensils, hundreds of plastic and glass bottles, some car tires and seats and an air conditioner were

found on or close to the old burial ground and were prepared for the pick up by the NYC Department of Parks and Recreation.

Cleaning a historic burial ground sounds more like an activity of a history department. The neighborhood to the ship graveyard may favor the connection to an art department. However, why do biologists get involved? Indeed, the predominant interest of Wagner's Department of Biological Sciences is not related to the cemetery but to the shore line of Arthur Kill behind it. A path from the tree-embedded burial ground leads down a slope to approximately seven acres of grassland that, entrenched between two reed grass belts, borders the mudflats of Arthur Kill. This area has the potential to develop into a site where Wagner students could study flora and fauna of an interesting coastal biotope and how an industrialized society influences it. Ecological and ecophysiological courses could use the area for field trips, and students could develop research projects for their senior thesis, observing and studying this site between Arthur Kill Road and the mudflats.

Of course, profit does never come without cost, but the chances to benefit increase with the efforts invested. A beginning has been made and it is planned to soon extend the activities to the grassland itself. We may be able to one day convince the NYC Department of Parks and Recreation to support us and to develop an area that is today considered as dangerous into a nature preserve for the people of Staten Island. May the presence of the burial ground and of the ship graveyard stimulate other departments to join our efforts. For the time being our thanks go to the team of the first clean-up.



Contributed by Dr. Onken

### FORMS AND FUNCTIONS ON THE ROAD



Professor Beecher's Forms and Functions class has been working very hard this semester. Even so, we did manage to have a little fun. During the time that we were studying plant forms and functions, we visited the Staten Island Botanical Gardens, where we enjoyed experiencing the diversity of plant forms and considering how these forms are related to their functions. We also took a trip to the Staten Island Zoo during our discussions of comparative forms and functions of animals. We each chose an animal to study in-



depth, and we are sharing what we learned about these creatures' ranges, habitats, adaptations, conservation statuses, and diet with each other through papers. Please learn more about the places we visited by clicking on the links below. Also included is a link to the Staten Island Greenbelt, which is an interconnected system of undeveloped land on Staten Island that contains many parks and hiking trails. Enjoy!

- <http://www.sibg.org/>
- <http://www.statenislandzoo.org/>
- <http://www.sigreenbelt.org/>

Contributed by Professor Beecher

### LITTLE KNOWN FACTS ABOUT HIPPO POOP



Two summers back, I was very fortunate to receive an invitation to visit my niece who is a high school Physics teacher in Zambia, Africa. We were simply delighted and got ready for the trip and made sure we took the shots and got our malarial pills and did all the right readings. We landed in Lusaka, the capital city of Zambia and took a helicopter ride to Chingola where my niece teaches. She had planned a safari for us in the South Luango National Parks in Zambia. Our cottage was right within the Safari Park and we lived for four days in THE WARTHOG LODGE, Built on Stilts and overlooking the river where the Hippos roam. Safari trips are usually done in the early morning hours or late in the day and we were lucky in that we saw all the big fives (Hippos, elephants, lions, leopards and the buffalos) in additions to a whole variety of other animals. Hippos were everywhere,



mostlly soaking themselves in the river with Nile cabbages growing all over them. They come out with their kids, make those snorting noises and relieve themselves all over. And when they do the mighty hippo's shit goes flying everywhere like a giant spray coming out of vol-

canic eruptions. The tiny excuse for a tail positioned directly above the hippo's rump acts as a wind shield wiper. It spins faster and faster like the tip of a dradle and there you have it "a spray of feces" Intrigued by this strange sight I asked my safari guide for an explanation and here we have it.

During the days of creation, when God was busy making all the creatures and placing them in the right places on earth, the Hippo with its tender and soft skin got misplaced in the harsh tropical climate along with the pachyderms and the Rhinos. The harsh heat of the tropics burned the Hippo's skin and so they went back to God to get moved out of Africa to a better

place, a nice cold country But alas God refused to do this The Hippos pleaded for the next best option – to get placed in the waters with all the water creatures. God was not willing to do this since he was concerned that the mighty Hippo will make a meal of all his water animals. "They are all smaller and are not capable of defending against you. So I cannot grant you this wish": was God's answer to the plea of the Hippo. Hippo promised that he will remain a vegetarian and never eat any of God's creatures if he gets his wish. : How do I know that you will keep you promise?" asked the Almighty and the Hippo replied that he will get on land and spray out his shit so that it can be checked easily to make sure that he is keeping his promise. And to this date the Hippo has kept the Promise

Contributed by Dr. Moorthi

*YOUR EXPERIENCES COULD BE POSTED HERE!*

### PUBLICATIONS

Freire, C.A., **Onken, H.** and McNamara, J.C. (2007, *in press*). A structure–function analysis of ion transport in crustacean gills and excretory organs. *Comparative. Biochemistry and Physiology. A*, doi:10.1016/j.cbpa.2007.05.008.

Gerwing, J., McConnell, D., **Stearns, D.**, and S Adair. 2007. Critical thinking for civic thinking in science. *Academic Exchange Quarterly* 11(3):160-165

**Onken, H.**, Moffett, S. B. and Moffett, D. F. (2007, *in press*). Alkalinization in the isolated and perfused anterior midgut of the larval mosquito, *Aedes aegypti*. *Journal of Insect Science, in press.*

*YOUR PUBLICATION COULD BE POSTED HERE!*

### PROFESSIONAL MEETINGS

#### CONTRIBUTIONS

**Palestis, B. G.** (2007). Use of artificial eelgrass mats by saltmarsh-nesting common terns. Waterbird Society. Barcelona, October 30-November 3.



Dr. Palestis presented his work also at a local event for the Greater New York/New Jersey Harbor Colonial Waterbirds Working Group, Staten Island, November 27-28. The poster can be visited outside room 309 in the Megerle Science Building

**Lamb, C.;** Baldeviano, G. C.; Čiháková, D. ; Noel R. Rose, N. R. (2007). Gene expression of inflammatory cytokine IL-17 during the course of Experimental Autoimmune Myocarditis (EAM).

This work reflects Christina Lamb's summer collaboration with Johns Hopkins University, Baltimore, MD.





**Pistilli, A.,** Roxbury, C., Zambidis, E. and Kimmel, S. (2007). MicroRNAs regulate normal and malignant hematopoiesis. 40<sup>th</sup> Fall Conference of the Metropolitan Association of College and University Biologists (MACUB), St. John's University, New York City, New York, October 20, 2007.

This work reflects Andrew Pistilli's summer collaboration with John Hopkins University, Baltimore, MD.

**Stearns, D.** (2007). Science in general education: an environmental/human health learning community and the critical-thinking-for-civic-thinking model. Invited presentation. The Mellon Project. *Science in General Education*. September 26, 2007, Hunter College, Manhattan, New York.

#### SUBMISSIONS

**Mosher, R. and Stearns, D.** (2008). Direct Measures for Assessing the General Education Program at Wagner College. Association of American Colleges and Universities. Integrative Designs for General Education and Assessment. Network for Academic Renewal Conference, Boston (MA), February 21-23.

**Onken, H., Cataldo, C.S., Coppolo, J.A., Lamb, CM., LoRe, E.G., Post, A.K., Zangara, N.E.** An Animal Physiology lab project that promotes undergraduate student interest and responsibility. Federation of American Societies for Experimental Biology, Experimental Biology meeting, April 2008.

**Onken, H., Patel, M., Javoroncov, M., Moffett, S.B., Moffett, D.F.** Apical Na<sup>+</sup>/K<sup>+</sup>-ATPase and strong alkalization in the anterior stomach of larval yellow fever mosquitoes (*Aedes aegypti*). Federation of American Societies for Experimental Biology, Experimental Biology meeting, April 2008.

**Onken, H.,** Parks, S., Goss, G., Moffett, D.F.; Extremely alkaline intracellular pH in the anterior stomach of larval yellow fever mosquitoes (*Aedes aegypti*). Federation of American Societies for Experimental Biology, Experimental Biology meeting, April 2008.

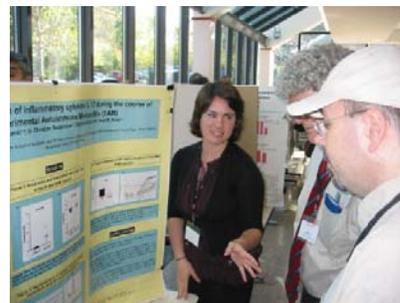
#### REVIEWS

##### STUDENTS AND FACULTY AT MACUB

 The 40<sup>th</sup> fall conference of the Metropolitan Association of College and University Biologists was held at St. John's University in Queens on Saturday, October 20. A busload of faculty members and students were driven to Queens by our awesome department secretary, Stephanie Rollizo. After settling in with the traditional breakfast, the president of MACUB, Professor Gary Sarinsky from Kingsborough Community College, welcomed everybody to celebrate the fourth decade of the Society and its meetings. The first keynote speaker, Paul Fisher from the Columbia-Presbyterian Medical Center, presented his contribution entitled "Differentiation Therapy of Cancer: From Bench to Bedside." After



these truly exciting news about the advances of cancer therapy, the meeting continued with a poster session. Two students from the Department of Biological Sciences at Wagner College, Christina Lamb and Andrew Pistilli, presented the results of their summer collaborations at John's Hopkins University.



After lunch and after another keynote speaker (Sam Rhine addressed "Advances in Pluripotent Stem Cell research") the afternoon was spent with workshops and presentations of

member papers. In this frame Dr. Stearns organized the Workshop "Teaching Critical Thinking / Civic Thinking in Science using an NSF-Funded Model".

*Contributed by Dr. Onken*

*YOUR CONTRIBUTION TO / REVIEW OF A PROFESSIONAL MEETING COULD BE POSTED HERE*

#### ALUMNI

*News from or about alumni of our department could be posted here!*

*YOUR STORY ABOUT OR MESSAGE FROM AN ALUMNI COULD BE READ HERE!*

#### RECOMMENDED

*Recommend a website, a book or a restaurant that you think everybody at our department should have experienced.*

*YOUR RECOMMENDATION COULD BE HERE!*

#### PUZZLES, JOKES, QUOTES, CARTOONS

##### SOME RIDDLES:

I have holes in my top and bottom, my left and right, and in the middle too, but I still hold lots of water. What am I?

What can run but never walks, has a mouth but never talks, has a head but never weeps, has a bed but never sleeps?

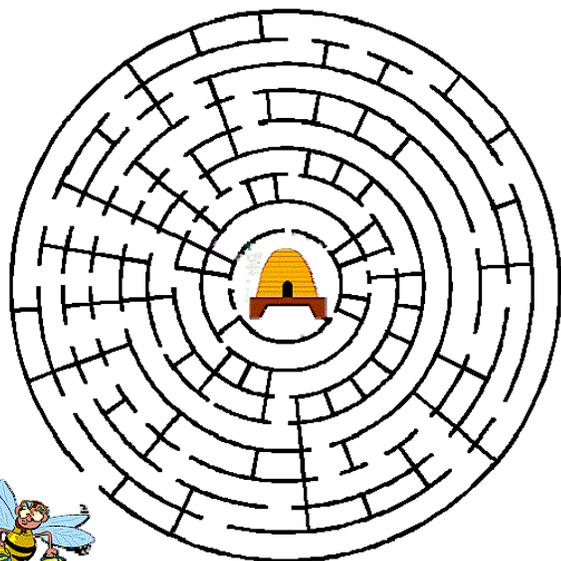
What building has the most stories?

Why is the sun so bright?

Answers in December



MAZE



Help the bee to find its way back to the hive

*YOUR PUZZLE, JOKE, QUOTE ORr CARTOON COULD BE POSTED HERE!*

**CLASSIFIED**

*You want to sell your PC, buy a used printer? Are you looking for company for your Friday night trip to Manhattan or for your weekend trip to the NJ shore? Post it here, if you need help to fix your car or if you are able to fix them.*

*WANT TO POST YOUR AD HERE?*

**MISCELLANEOUS**

*If your contribution does not fit in any of the sections above, you can post it here.*

***DO YOU KNOW A SECTION THAT I MISSED? LET ME KNOW WHICH AND MAKE A CONTRIBUTION!***

CARTOON



THERE ARE ALWAYS OPPORTUNITIES

**GUIDELINES FOR CONTRIBUTORS**

Authors in all sections should keep in mind that not all readers are specialized in their area of interest. Keep your contribution on a level that everybody can understand.

Contributions may vary in length between about 50 and 500 words and must be submitted by e-mail to [horst.onken@wagner.edu](mailto:horst.onken@wagner.edu).

Photographs or other images that accompany an article are very welcome, but must be submitted as separate files (high quality jpg is the preferred file format) attached to the e-mail. Be aware that photographs/images may be minimized in size.

Indicate the section of the newsletter where you want your contribution to appear.

The deadline submission of a contribution is the 20<sup>th</sup> of this month. Contributions received later may or may not be considered.

**The editor reserves his right to edit your contribution or post an immediate response.**

**Editing may involve to publish contributions in other sections as indicated by the author.**

**All contributions will clearly indicate the author's identity.**

**All contributions are reviewed and publication may be refused by the editor.**

