

# T H E N I C H E

V3 #1

DEPAUL UNIVERSITY | DEPARTMENT OF BIOLOGICAL SCIENCES

## FROM THE DESK OF THE CHAIR



This is a special issue of The Niche that includes profiles of our students and faculty who have received awards over the past year. In spring 2013, Vinh Vu was recognized as our “Senior of the Year” for the Department of Biological Sciences. Vinh conducts research in the laboratory of Windsor Aguirre, Ph.D. The voting for the “Senior of the Year” award was very close this year—so close that we decided to recognize Ramiah Jacks and Lillian Perez as “Senior of the Year” honorees.

Several of our graduate and undergraduate students received funding awards this past year. Two graduate students (Elsa Anderson and Ciaran Shaughnessy) received external funding, and three graduate students (Ellen Savaglio, Ciaran Shaughnessy and Seth Contreras) received CSH Graduate Research Fund Awards. Two undergraduates (Erica Binelli and Webster Vital) also received external funding. This type of funding is very competitive, and the students receiving these awards should be very proud of their accomplishments.

We also have had several faculty members receive awards. Elizabeth LeClair, Ph.D., was awarded “Supervisor of the Year.” This is a university-wide award, and this is the first time a member of our department has received it. Stan Cohn, Ph.D., received the “Excellence in Teaching” award from CSH. Only one recipient of this award is selected annually. Any of our readers who have had a course with Dr. Cohn will know that he was very deserving of this award. We have also had a promotion this past year. Dorothy Kozlowski, Ph.D., was promoted to full professor.

Two administrators joined DePaul in July 2013. Donald Pope-Davis, Ph.D., was appointed provost. Pope-Davis came to DePaul from University of Notre Dame where he served as vice president and associate provost. Gerald Koocher, Ph.D., was appointed dean of CSH after serving as professor of psychology and associate provost at Simmons College in Boston. Profiles of Provost Pope-Davis and Dean Koocher can be found on DePaul’s website. We look forward to working with both of them.

There is no doubt that this will be another busy and exciting year. Thank you for taking the time to read the latest version of The Niche. ■

**John Dean**

Professor and Chair of Biological Sciences

## SENIOR OF THE YEAR AND HONOREES

### VINH VU



Vinh Vu, his grandparents, Dr. Dean and Dr. Aguirre

Vinh Vu has worked on a number of different projects in the research laboratory of Windsor Aguirre, Ph.D. Vinh started as a volunteer conducting research in the Aguirre lab, and, as a result of this initial work, he was included as a co-author on a paper published as a short contribution in the *Journal of Parasitology*. Vinh then began work on a project in the Aguirre lab that involved the isolation of microsatellite

loci from an important predatory freshwater fish from Ecuador. For the most part, Vinh worked independently on this project and due to his efforts, Dr. Aguirre's lab was able to prepare and submit a paper that is currently in press in the *Journal of Conservation Genetics Resources* with Vinh as first author. Vinh is currently serving as Dr. Aguirre's lab manager and has contributed to a number of other projects in the lab that will likely lead to additional publications.

Academically, Vinh has developed into a very strong student in the classroom and is able to effectively balance the demands of conducting research, staying on top of his school work and serving as the primary caregiver for his two grandparents (Vinh and his family are immigrants from Vietnam). Following his graduation from DePaul, Vinh plans to attend graduate school in order to continue his education. ■

## SENIOR APPRECIATION AWARD

In addition to the Outstanding Senior Award, the department presented three senior students with the departmental Senior Appreciation Award for their hard work and efforts on behalf of the department and the students. The three winners of this award are Ramiah Jacks, Lillian Perez and Vinh Vu. Ramiah was president of the Biotechnology Club, a CIRRUS Scholar and a Rosalind Franklin



From left to right: Ramiah Jacks, Lillian Perez and Vinh Vu

summer intern, as well as a true leader among the class of 2013 Biology students. Lillian was a McNair Scholar, Margaret O'Malley Scholarship recipient and Arnold Mitchem Fellow, and has served as leader of the Neurobiology Club, as well as being a past president of the local SACNAS chapter. Vinh has been an active researcher in evolutionary biology with Dr. Aguirre and is already a co-author on manuscripts from the lab. Congratulations to Ramiah, Lillian and Vinh on receiving this award and sincere thanks for all their work on behalf of the department. ■

# SENIORS WHO PRESENTED AT SENIOR RECEPTION

The Biology Department was proud to celebrate our graduating class of senior students with a reception and poster presentation in June of 2013. Below are the senior biology majors who presented posters at our Senior Reception; their mentors are listed in italics.

## **Allison Grecco**

*Dr. LaMontagne*

Variation in cone production of white spruce near its southern range limit.

## **Melissa Horther**

*Dr. Sparkes*

Egg shape diversity in acanthocephalans: effects of habitat type

## **Fiona Lane**

*Dr. Gilliland*

Heterologous Segregations are established prior to chromosome congression in female meiosis I in *Drosophila melanogaster*

## **Freddie Marquez & Mat Francis**

*Dr. Silliker*

RNA editing in *Didymium iridis*

## **Alexander Meglei**

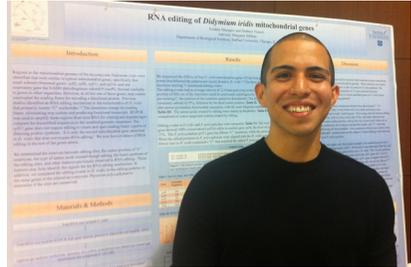
*Dr. Shimada*

Fossil marine vertebrates from the middle Graneros Shale (Upper Cretaceous: middle Cenomanian) in southeastern Nebraska

## **Derek J. Moore, Kristina. M. Hermann**

*Drs. Bystriansky & LaMontagne*

The effects of path proximity, crab sex, and predator size on fiddler crab (*Uca pugnax*) responses to a S.C.A.R.E attack



Freddie Marquez at Senior Reception

## **Brian O'Byrne, Robert Marr**

*Dr. Norstrom*

Can Neprilysin 2-alpha or -beta Act as an Alpha Secretase?

## **Ryan Wenkus**

*Drs. Bystriansky & LaMontagne*

Biofilm Formation and Diversity in the Intertidal and Subtidal Zones of the ACE Basin, SC.

## **Amanda Wolske, Tom Kordes,**

**Eric Rice, and Sanna Kenney**

*Dr. Cohn*

Repression and Habituation of Light-stimulated Motility in Diatoms

**Dimitar B. Zlatev & Michael C. Lordon** (presenting) **Allison E. Grecco,**

**Heather A. Rider, Andrew C. Steffen,**

**Ramsey G. Millison, Erica A. Binelli**

*Drs. Bystriansky & LaMontagne*

Moon Snail Prey Preference: Does

Bivalve Size Matter? (Presented by

Dimitar Zlatev and Michael Lordon) □

## SUPERVISOR OF THE YEAR AWARD

### BETH LECLAIR



LECLAIR

Elizabeth LeClair, Ph.D., associate professor of biology, was named as the 2013 DePaul Supervisor of the Year!

LeClair was nominated by Research Assistant Susan Rhee. LeClair is not only a professor and principal investigator of the Biology Lab, but also a mentor to all student employees within the lab. Along with providing her students with academic wisdom, LeClair encourages them to immerse themselves with activities outside the lab, including volunteer opportunities.

Rhee says, “I have never had a superior as enthusiastic about the development of their employees’ work and futures as Dr. LeClair.” She arranges regular meetings with a developmental biology lab at Children’s Memorial Research Center and monthly dinners for her students. LeClair is devoted to her students’ growth, indicated by weekly hour-long meetings to touch base with each member of her lab. “Her love for science is contagious and everyone in the lab feels that and is motivated to worked hard,” said Rhee. “Her dedication and time management as a professor is what every member of the lab strives to imitate and she truly sets an example every day. She is an amazing mentor that makes the work of her lab and for DePaul her main priority, and truly goes above and beyond with her work for the community.”

<https://studentemployment.depaul.edu/recognition/SUPOTY/SupPastWinners.aspx> □

## EXCELLENCE IN TEACHING AWARD

### STAN COHN

Stanley Cohn, Ph.D., was this year’s recipient of the Excellence in Teaching award on behalf of the College of Science and Health. Dr. Cohn has taught numerous courses within the department, recently including General Biology, Cell Biology and capstone courses, as well as teaching courses that instruct MSSE students in Cell



COHN

Biology. His teaching interests focus on the use of multiple styles and techniques in his courses that encourage the participation and engagement of the students. He has worked to develop in-class student reenactments of cell division, enzyme breakdown, and rates of reaction. The accompanying photo shows Dr. Cohn with McGowan’s own Ms. Brenda Yates, a recipient of this year’s Spirit of DePaul Award. □

## ILLINOIS SPACE GRANT SCHOLARSHIP RECIPIENTS AND GRADUATE STUDENT AWARDS



BINELLI

Erica Binelli, a double major in biological sciences and psychology, received the Illinois Space Grant Scholarship in 2013. In addition to the receipt of the Illinois Space Grant Scholarship, Erica was awarded a grant from the National Institute of Health to conduct and promote diversity in health-related research. She also is a member of a research lab studying zebrafish at DePaul, and has participated as a Chicago Quarter mentor for Discover Chicago and as a supplemental instructor leader in General Biology I.

Webster Vital, a double major in biological sciences and psychology, also received the Illinois Space Grant Scholarship in 2013. Webster has engaged in many activities as a DePaul student, including serving as a teaching assistant for the Museum of Science and Industry Science Club, a peer advisor in the Department of Psychology, a volunteer at Illinois Advocate Hospital and, most recently, a summer research internship at Rosalind Franklin University of Medicine and Science. ■



VITAL

## BIOLOGY GRADUATE STUDENT AWARDS 2012-2013

### EXTERNAL AWARDS

#### Elsa Anderson

**Title of Proposed Study:** Red-headed Woodpecker nest-tree and habitat characteristics to evaluate nest competition and nest-site success in Cook County.

**Award Amount:** \$1,000

**Awarding Organization:** Illinois Ornithological Society Grants Program

#### Ciaran Shaughnessy

**Title of Award:** Journal of Experimental Biology Travelling Fellowship

**Title of Proposed Study:** Effects of aquatic hypercarbia on salinity acclimation in the white sturgeon (*Acipenser transmontanus*)

**Award Amount:** \$1,500 British Pounds (~\$2,300 USD)

**Awarding Organization:** The Journal of Experimental Biology and The Company of Biologists Limited

### INTERNAL AWARDS, CSH GRADUATE RESEARCH FUND

#### Ellen Savaglio

GAP43 Protein Modulates Amyloid Precursor Protein Processing Fate, \$500.

#### Claran A. Shaughnessy

Osmoregulation in Wolf Eel (*Anarrhichthys Ocellatus*) During Acclimation to Dilute Seawater, \$469.

#### Seth Contreras

Evolution of Body Shapes and Vertebral Phenotypes in Gasterosteoid Fishes, \$300.

■

## ALUMNI PROFILE

### TRENTON DAILEY-CHWALIBOG

The road to medical school is often as varied and multifaceted as the interests of our students, and such a path is exemplified by one of our recent biology graduates, Trenton Dailey-Chwalibog. At DePaul, Trenton was an honors student double majoring in French translation and biology with a concentration in neurosciences. He also was the program director for Global Brigades Dental and the president of both the Honors Student Government and French Club. Trenton spent his last year at DePaul working as an interpreter with a Togolese refugee at the DePaul University College of Law Asylum and Immigration Clinic.



DAILEY-CHWALIBOG

It was the combination of these various experiences at DePaul that spurred his interest in health inequities in French-speaking African countries. After DePaul, Trenton moved to Paris to pursue an international master's in public health (MPH) with Columbia University in partnership with L'École des Hautes Études en Santé Publique (EHESP). During his two years of studying there, he majored in epidemiology with a minor in humanitarian health. He left Paris in January to move to Cameroon where he spent six months researching with the French Red Cross on severe acute malnutrition (SAM) in children under 5. This project served as the basis of his master's thesis, which was defended in Paris in June and validated with honors.

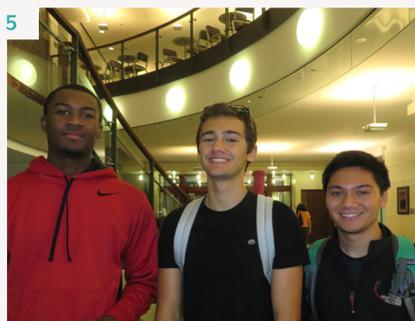
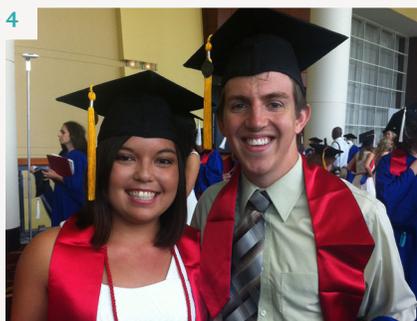
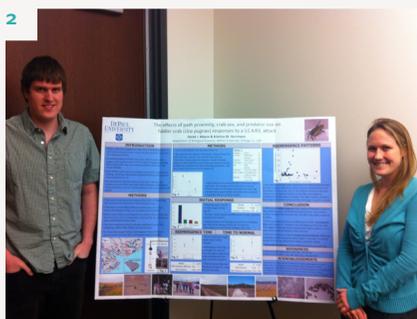
After graduation, Trenton was taken on by the French Red Cross as a nutritional delegate for a mission in the region of Kayes in Mali. He is currently working in the region on a program evaluation for a SAM support project across the Sahelian band.

Once he has completed some of his current projects, Trenton will be returning stateside in a year, at which time he plans on applying and matriculating to medical school for the fall of 2015.

In discussions with Trenton for this article, he wanted the Niche readers to know that he is honored to share his experiences because he thinks it demonstrates *“something unique, a route that is entirely possible for any motivated DePaul biology student, but one that is oftentimes less travelled.”* His experiences at DePaul with Global Brigades and the Asylum Clinic gave him the foundation and motivation to continue on the path that has led him where he is today—with a set of experiences and perspectives that are at once global in nature and personal in practice—and for that he is very thankful. ■



## PHOTO GALLERY



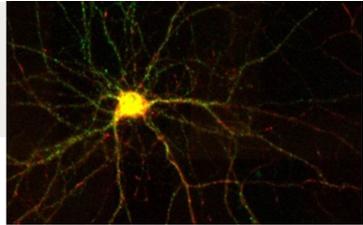
1. **Team BIO**—Annual BIO v. CHE Softball Game. Team BIO won 31-12
2. **BIO 390/490 Field Research Seminar**—Derek Moore and Kristina Herrmann present at the BIO 390/490 Field Research Seminar
3. **Peggy Notebaert Nature Museum's Run for Science 5K**—Exercise Physiology and CIRRUS students ran in the Peggy Notebaert Nature Museum's annual Run for Science 5K

4. **June 2013 Commencement**—Nicole Nong and Mark Bevill at Commencement in June of 2013
5. **Meet and Greet**—Willie Love, Alex Haddad, and Christopher Pardo at Biology Meet & Greet

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## RESEARCH IN ACTION



### PROTEINS CAN BE PROBLEMATIC

The Norstrom lab studies the cell biology of proteins involved in neurodegenerative diseases like Alzheimer's disease. In Alzheimer's disease, brain cells release toxic peptides that can accumulate, disrupt cellular processes and cause cell death. These peptides are released from a larger precursor protein after enzymatic cleavage during its metabolic cycle, so a major goal of the Norstrom lab's research is to understand the metabolism of this protein in order to understand the cellular and molecular events that lead to disease onset. Dr. Norstrom uses proteomics in an attempt to discover novel proteins that may be involved in facilitating or inhibiting the generation of toxic peptides from the precursor proteins. Once a novel protein is found, the lab attempts to determine the molecular nature of the interaction using molecular genetics and cell biological techniques. The image highlights a recent finding that the protein NEEP21 (red in the image) can inhibit formation of toxic peptides through a direct interaction with the precursor protein (green in the image; overlap of the two is yellow) in nerve cells such as the one shown here. A better understanding of this process may help lead the way to new therapeutic targets. 