

PLEASE DO NOT PRINT THIS.

The Biology and Environment (Biology 502) Graduate Students took a trip to the Smithsonian's National Museum of Natural History to tour the Entomology, Mammalogy, and Invertebrate Zoology wings. See more photos from their trip on pages 10–11.

**Shown right: Andrew McGowan** (M.S. student in Applied Biology) holding a preserved scorpion. Photo by Krispen Laird.



## ANNOUNCEMENTS

**Lyle Cook**, Junior Dual Degree major (Biological Sciences/ Environmental Science) was accepted into the summer REU program at Shannon Point Marine Center in Anacortes, WA. He also received word that he was selected out of 200 applicants for the summer undergraduate internship position at Oregon Health & Science University's Center for Coastal Margin Observation & Prediction in Portland. He has accepted the position at Shannon Point.

**Megan Bock** has been awarded a Sea Grant REU internship at Horn Point Laboratory for summer 2014. She will be working with Dr. Mike Roman on a project involving zooplankton and dissolved oxygen levels in the Chesapeake Bay.

### TriBeta Inductees

Maria Abraham, Rubab Ahmad, Tolani Akindele, Kelsey Allen, Ann Ascot, Brittany Barnhart, Krystal Donaldson, Kelsey Gabert, Chase Gardner, Stephanos Gozali, Taylor Groginski, Sara Hammer, Christopher Haviland, Nicole Hodiak, Julia Howser, Ashley Jones, Rachel Keuls, Kathleen Kila, Ashley Kobisk, Andrea Korell, Kyle Kowalczyk, Corrine Link, Marie Lockard, Samantha Lucas, Shelby Mackey, Megan Millen, Caitlin Minton, Erin Osipowich, Joseph Perucci, Zachary Rathbun, Emma Rice, Brittney Rogers, Dana Short, Patrick Simons, Adam Smith, Saidat Sola-Rufai, Selene Sparks, Alexander Stuffer, Margaret Thomas, Mariah Thomas, Laura Thornburg, Beverly Ann Tripari Villaplana, Elizabeth Webster, Kyle Westbrook, Tara Wyman, and Heather Yerecic

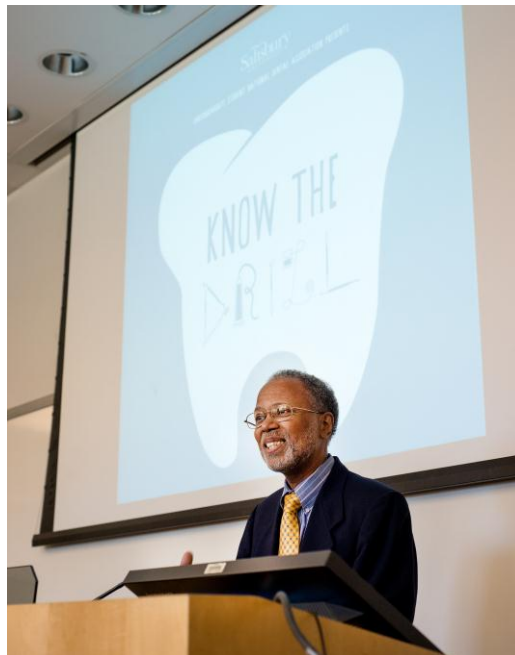


### **Salisbury University Student Research Conference**

The Salisbury University Student Research Conference (SUSRC) committee announces the SUSRC on Friday, April 25, 2014. Presentations are organized into themed sessions, ranging from molecular biology to music composition, from education to economics. The conference culminates in a poster reception where the Outstanding Research Mentor Award is presented to a faculty member for excellence in guiding student research. The conference is free and the public is invited. For more information visit <http://www.salisbury.edu/susrc>

## Know the Drill

The *Know the Drill* Event presented by the Undergraduate Student National Dental Association (USNDA) Chapter at SU, took place on Saturday, February 22, 2014 in Henson Hall. SU and UMES pre-dental students attended the event. The guest speaker for the event was a local dentist, **Dr. Elton Maddox Jr. (shown right)**, the first African-American to graduate from the University of Maryland School of Dentistry (UMSOD). The program included a presentation by UMSOD recruiter Dr. Andrea Morgan, lunch with current UMSOD students and an informal Q&A session with the dental students. Photo by Grant L. Gursky.



USNDA would like to thank the Student National Dental Association (SNDA) Chapter at UMSOD and the Health Profession Advising Program (HPAP) for helping to make the event a success.



**Left to right:** Arian Hamidi, Samuel Maiman, Charniece Whitaker, Syeda Jaffery, Krystal Donaldson, Dr. Elton Maddox Jr., Dr. Andrea Morgan, Dr. Mark Frana, Dana Short, Devon Honrychs, Lindsey Roberts and Brad Langley. Photo by Grant L. Gursky.



## OPPORTUNITIES

### Study Abroad Class in Costa Rica

Looking for a great way to spend Winter Term - 2015?

Consider registering for a Study Abroad Class in Costa Rica!

This course is designed to help both non-biology majors and majors appreciate the biodiversity of the tropics using Costa Rica as an example. We will visit national parks, and research, agricultural and cultural facilities. Students will develop or sharpen their skills of scientific observation through guided activities and time on their own to observe.

The course will also include large measures of language, culture, art, history, and a general appreciation for Costa Rica and her people. Included in the program: boat excursion in Tortuguero, admission to Tortuguero National Park, Chocolate Tour in Sarapiquí, guided tour at La Selva

Biological Station, kayaking on Lake Arenal, suspension bridge walk, zip-line tour, admission to Monteverde Reserve and the Butterfly Garden and admission to several west coast national parks on the Pacific Ocean. The course is limited to 20 students. Priority will be given to applications received by May 1, 2014. For information contact the instructors: Mary Roman Gunther: [mrgunther@salisbury.edu](mailto:mrgunther@salisbury.edu)  
Dr. Eric Liebgold: [eliebgold@salisbury.edu](mailto:eliebgold@salisbury.edu)



### 2014 Summer Field Assistants Positions: Blue Catfish Tagging Study.

VIMS, College of William & Mary. Gloucester Point, Virginia

**Position Description:** Field assistants are needed in Gloucester Point, Virginia. Successful applicants will assist in field operations from July-September 2014 (or through late August if an undergraduate student). This is the third year of a mark-recapture study to establish a population size estimate of blue catfish, an invasive freshwater fish able to move into estuarine habitats. In previous years, tagged fish were released in the upper James River estuary of southeastern Virginia. This summer, successful applicants will work as part of a 5-6 person team and will assist with recovery of tagged fish from the commercial harvest. This will include handling fish, data recording, and equipment operation and maintenance. Field work can involve 8-12 hour days in all weather conditions with extensive time outdoors and numerous hours in transit to and from field sites via VIMS vehicle. Employment is contingent upon successful results from a background check that is performed by the College prior to the start of employment. No housing or transportation (except between VIMS and field sites) will be provided by the project. Field assistants will be hired as temporary employees and paid on an hourly wage basis (\$11.00-\$12.00/hour); wages will be based on experience.

**Required Qualifications:** 1. Biological sciences background with bachelor's degree completed or in progress and an interest or focus on fishes or fisheries preferred; 2. Must be physically able to move field equipment and supplies (up to ~50 lbs.); 3. Experience with small machinery repair and maintenance; 4. Must have a valid driver's license, an acceptable driving record, and be willing to share driving responsibilities.

**Desired Qualifications:** 1. Experience with boating and trailering in general and a proven ability to be comfortable in the field and on the water in all weather conditions; 2. Ability to resist motion sickness during extensive hours in a truck/boat; 3. Experience identifying fishes or other general taxonomic experience. Please send a cover letter, resume, and contact information for three references to Alicia Norris ([alijnorr@vims.edu](mailto:alijnorr@vims.edu)) by May 5, 2014.

**FEATURED FACULTY**

**DR. CHRIS BRIAND**



**Courses taught at SU:**

Introduction to Plant Biology (BIOL 212), Economic Botany (BIOL 250), Plant Morphology (BIOL 324), Plant Anatomy (BIOL 325), Research in Biology (BIOL 415/416)

**Research Interests:**

I am very interested in the historical impact of humans on their environment. My research often involves slogging through historical records (or across farm fields), of which there now is a wealth online. Thus, I jokingly refer to myself as an armchair ecologist. I do, however, occasionally get up to get a latté from Cool Beans and collect soil samples from cemeteries. Since coming to SU from the Université du Québec à Montréal, I have developed a research program in Historical Ecology, with colleagues and students both in Biology (Dr. Geleta) and Geography (Drs. Folkoff and Zaprowski), investigating the impact of European settlement on the Delmarva Peninsula. Over the past 350 years, human activities have caused considerable soil erosion and degradation due to deforestation, intensive agriculture, and poor if any soil conservation practices. Small, undisturbed family cemeteries on the Lower Eastern Shore of Maryland provide us with valuable markers for assessing these changes. Continued cultivation around the cemeteries has left many of them as isolated remnant knolls, elevated above the surrounding fields. Soil physical and chemical properties indicated that the cemeteries were left largely undisturbed by humans. The farm fields surrounding the cemeteries, however, exhibited ca. 0.5 m of surface soil depletion, lower levels of organic matter, soil carbon, total nitrogen, but higher levels of cations such as Ca and K, the result of liming and fertilization. These results are consistent with our hypothesis that land clearance and farming practices have considerably eroded and altered the chemistry and structure of soils on the Lower Eastern Shore of Maryland. We have added Dr. Emmert to our team and with her students she is investigating how soil microbial activity varies over time between cemeteries and farm fields. Preliminary results look very promising!

**Recent Publication:**

Geleta SB, Briand CH, Folkoff ME, and Zaprowski BJ. 2014. Cemeteries as indicators of post-settlement anthropogenic soil degradation on the Atlantic Coastal Plain. Human Ecology (accepted).





**About me:**

I grew up in Halifax, Nova Scotia, Canada. My Pop was a Stevedore and my Mom stayed at home and took care of my brother and me. My older brother Bill, aka “Willy Hop”, is a landscaper and musician, singing and playing guitar and harp in several blues bands. My Pop loves to garden and my Mom collects cacti and other indoor plants. You can see a theme developing here. Neither of my parents went to University let alone high school, but they encouraged me to get a good education. I kind of went overboard and graduated from the University of Guelph (about 40 miles from Toronto) with a PhD in Botany and then spent several years in Montréal working as a Postdoc before coming to Salisbury. My wife, Cheryl Ann, has more university degrees than I do and is currently working as an English as a Second Language teacher in the public school system. We don’t have kids, but we do have three wonderful cats! In our dotage we will probably be known as the crazy cat people! Outside of work, I love to listen to music and dream of more expensive audio components.

I am also the editor for the Salisbury University Arboretum webpage:

<http://www.salisbury.edu/arboretum/>

## TRAVEL AND PRESENTATIONS

### Atlantic Estuarine Research Society

On Thursday, March 27, the Atlantic Estuarine Research Society (AERS) held its Spring Meeting at the Carousel Oceanfront Hotel in Ocean City, MD. AERS is an organization comprising students, scientists, managers, and educators from the states of DE, MD, NC, NJ, PA, and VA and Washington, DC. The meeting provided an opportunity for stakeholders and members to discuss estuarine and coastal environmental issues and policies. Three students and two faculty from the SU Department of Biological Sciences attended the meeting; the students presented the following talks and posters.



### Contributed Talk

**Alexander Stuffer.** Stress and growth rates of Arctic charr at different growth temperatures as assessed by changes in the activities of metabolic enzymes.

### Contributed Posters

**Amanda Biederman.** Acute temperature change and LDH activity in the Atlantic killifish, *Fundulus heteroclitus*.

**Andrea Korell.** Seasonal changes in the activity of lactate dehydrogenase in a estuarine fish, *Fundulus heteroclitus*.

**Faculty Attendees:** Judith Stribling and Eugene Williams.



### CapSci14

On Saturday, March 29, the Washington Academy of Sciences and its Affiliated Scientific Societies held Capitol Science 2014, the sixth in a continuing series of biennial all-Affiliate conferences. These Conferences serve as platforms for scientific presentations, seminars, tutorials, and talks presented by members of the Affiliated Societies. CapSci14 was held at Marymount University's Ballston Campus. Eighteen members of Salisbury University's Student Chapter of WAS were present along with 4 SU faculty.



**Keynote Speaker. E. Eugene Williams.** The fish of Iceland and climate change.

### Contributed Talks

**Meagan Jezek.** RNA interference knockdown of the *wdr-20* gene in *Caenorhabditis elegans*.

**Alexander Stuffer.** Stress and growth rates of Arctic charr at different growth temperatures as assessed by changes in the activities of metabolic enzymes.

**Michael Robben.** Effect of *mrck-1* suppression by RNA interference on cellular oxidation defense responses in *Caenorhabditis elegans*.

**Zach Rathbun.** Vascular dysfunction in muscular dystrophy I.

### Contributed Posters

**Heather Yerecic.** Identification and characterization of WDR48 mutants in *Arabidopsis thaliana*.

**Rachel Flanagan.** Evaluating the effectiveness of converting a lawn mower to operate on solar energy.

**Amanda Biederman.** Acute temperature change and LDH activity in the Atlantic killifish, *Fundulus heteroclitus*.

**Katherine Murphy.** Using sonar to assist the visually impaired.

**Stephen Kelly.** Altering growth rates and nutritional qualities of microalgal feedstock with symbiotic bacteria.

**Andrea Korell.** Seasonal changes in the activity of lactate dehydrogenase in a estuarine fish, *Fundulus heteroclitus*.

**Lylie Hinh.** Vascular Dysfunction in Muscular Dystrophy II.



**CapSci14 (cont.)**

**Faculty attendees.** Philip Anderson, Patti Erickson, Victor Miriel, and Eugene Williams.

**Student attendees.** Amanda Biederman, Sarah Confrancisco, Rachel Flanagan, Abde Geleta, Alex Grogan, Lylie Hinh, Stephen Kelly, Andrea Korell, Meagan Jezek, Samin Manizade, Sean McIntyre, Katherine Murphy, Georgette Ndamukong, Zach Rathbun, Michael Robben, Marcus Schwarz, Alex Stüfer, and Heather Yerecic



**Biology Graduate students visit the National Museum of Natural History (Washington, D.C.)**



**Left to right:** Mallory Hagadorn, Jackie Darrow, Krispen Laird, Kyle Wilhite, Andrew McGowan, Sean McIntrye, Kelsey Mitchell, and Chelsi Rose

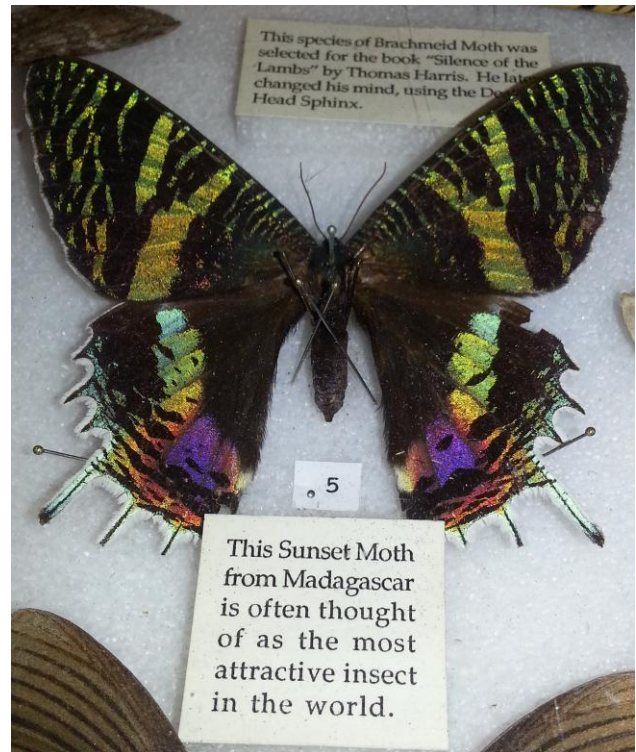


Giant Ground Sloth



Perusing some Entomology Cases





Gorilla skull donated by Diane Fossey (famous primatologist)



## PUBLICATIONS

**Liebgold, EB. 2014.** The influence of social environment: Behavior of unrelated adults affect future juvenile behaviors. *Ethology* 120:388-399.

### Abstract

Juveniles' behaviors are often influenced by the behaviors of conspecifics. Most experimental studies of the influence of conspecific behavior vary the social environment by the presence or absence of conspecifics or investigate the impact of the outcome of social encounters (winner/loser effects) but less frequently expose individuals to variation in behavioral phenotypes present in the social environment. Based on previous work showing that juveniles of the salamander *Plethodon cinereus* are likely to interact frequently with non-parental adults, I hypothesized that territorial adults in the social environment alter the future behaviors of juveniles. I measured the intracohort social behaviors of juvenile salamanders collected from two geographic areas, Michigan (MI) and Virginia (VA), before and after housing with ostensibly territorial (VA) or non-territorial (MI) adults. There were overall effects of adult territoriality and aggression on the behavior of juveniles. However, juveniles from populations in MI were especially susceptible to behavioral modification. Compared with behaviors prior to being housed with adults, MI juveniles increased investigatory and escape behaviors in juvenile–juvenile interactions after being housed with adults that displayed territorial behaviors and decreased investigatory and escape behaviors after being housed with non-territorial adults. This study shows that not only is a specific behavior, territoriality of adult salamanders, a social environment that modifies future juvenile behaviors, but the effects of social environment may differ between populations.

## ALUMNI NEWS

**Christina Grossi**, December 2013 Dual Degree graduate, will be working in a paid summer internship position at the Marine Science Camp of NJ, doing water sampling, seining, kayaking, and teaching lessons on shark conservation, among other things.

**Gabriella (Gabby) David** (class of 2013) is working toward a Masters degree in Therapeutic Herbalism at the Maryland University of Integrative Health (<http://www.muih.edu>).

**Robyn Kratenstein** (class of 2005) graduated with a degree in elementary education and biology. She went on to attend Lake Erie College of Osteopathic Medicine and became a doctor. She is completing her residency in Emergency Medicine at Conemaugh Memorial Hospital Level I Trauma Center in Johnstown PA, and has accepted a position as Attending Emergency Medicine Physician at Conemaugh! “Thanks for the amazing training, which helped me to accomplish my dream of being a doctor, so that I can help, and heal others!”

**Dr. Lee Ward** (class of 1979) recently authored a book, *First Generation College Students* (Jossey-Bass, 2012). Lee is Director of the new 55,000 square foot University Health Center and Assistant Professor of Integrated Science and Technology at James Madison University. He recently completed comparative education research projects at Shandong University in China and Hiroshima University in Japan. This fall

Lee will serve as Faculty Member in Residence at JMU's academic semester in London, where he will teach Complex Systems and How They Fail.

If you have announcements to add or general comments regarding the Newsletter, please email [dlprice@salisbury.edu](mailto:dlprice@salisbury.edu).

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