

SAVE PAPER - DO NOT PRINT!

## Summer Research in Panama



Grant Goldberg in Panama

**Grant Goldberg** (shown left) conducted summer research in Panama with Dr. Ryan Taylor.

**Matt Del Grosso** describes his summer travels to Iceland and summer research with Dr. Hunter in this month's Featured Student (p 8).

**Dr. Ellen Lawler** is our Featured Faculty this month. Dr. Lawler's research interests have focused on the natural history of the birds on Delmarva. More recently she has focused on transcribing letters of Henry Callister, a colonial resident of the Eastern Shore. To learn more about her research go to p 10.

### ANNOUNCEMENTS AND AWARDS

**Sandy Ramses**, the Program Management Specialist for the Department of Biological Sciences, was awarded the Board of Regents Staff Award, for "exceptional contribution to the institution and/or unit to which the person belongs."

On May 7<sup>th</sup> 2011, 24 new students were inducted into Tri Beta, a national Biological Honor Society. Congratulations to Sara Alicia Angell, Carlene Marie Avalone, Brianna Rochell Beauchamp, Dawn Marie Bisson, Sarah Elizabeth Blondeaux, Lauren Elizabeth Cissell, Allison Elizabeth Collins, Thomas Joseph Crum, Matthew Steven Del Grosso, Jacqueline Brooke DiFalco, Catherine Lee Fitzgerald, Anne Christine Gilbert, Grant Joseph Goldberg, Miriam Rebecca Jackson, Sean Ryan James, Stephen Michael Kelly, Brian Scott Kramer, Victoria Desiree Kutch, Jacob Jerald Liechty, Nicole Marie McGrath, Kelsey Michelle Mitchell, Kelsey Marie Norris, David Anthony Ortiz, Allison Nicole Ose, Aurielle Eileen Rowe, Emily Catherine Schuchardt, Whitney Brooke Smith, Jason Stephen Vinciguerra, Howard William Ward III, Carolyn Ann Weis, Caren E. Wiley, Mary Kathryn Willard, Aisha Ullah, Leah Ashley Zinnert.

**Dawn Bisson**, a senior French and Biology major, was one of only 4 students nationwide to receive the 2010 Joseph Yedlicka scholarship, which fully funded her studies in Avignon, France during the summer of 2010. The National French Honor Society awards the scholarship annually to the four of the most promising French students in the nation who have not yet studied in a French-speaking country. An article in which Dawn details her experiences while studying in Avignon was selected for publication in the Fall 2010 Pi Delta Phi newsletter.

**The Fall 2011 Biology and Chemistry Seminar Series:**

[http://faculty.salisbury.edu/~kxhunter/biology\\_seminars.html](http://faculty.salisbury.edu/~kxhunter/biology_seminars.html)

**ANNOUNCEMENTS AND AWARDS cont.**

**Dr. Ryan C. Taylor** and his collaborators Michael J. Ryan (University of Texas at Austin) and Rachel A. Page (Smithsonian Tropical Research Institute, Republic of Panama) have received an NSF Award in the amount of \$1,125,000.00 to conduct research on “Multimodal communication, mate choice and predation risk”. For a brief description of their research see the summary below.

Humans receive and analyze information from our environment through multiple senses (i.e. sensory channels). When we interact socially, for example, we not only listen to someone’s words but we also read their body language to interpret their meaning. The process, however, by which multiple streams of information interact to influence social decisions remains poorly understood in any animal, human or otherwise. In this series of studies we will use the túngara frog as a model system to determine how acoustic and visual cues influence decision-making related to mate-choice. Like most frogs, male túngara frogs advertise for mates with loud and conspicuous mating calls. Females compare calls among males and use this information to choose a mate. The female’s decision is also influenced by the presence of a visual cue, the male’s large and conspicuous vocal sac. In addition to choosing among multiple courting males, females must also assess potential mates in the face of predation risk from a specialized predator, the fringe-lipped bat. Thus during courtship, frogs must simultaneously find a mate and avoid being eaten by bats. Using robotic frogs, we have previously shown that females prefer a calling male with a large inflating-deflating vocal sac to a male producing the same call but without a dynamic vocal sac. In this new series of studies, we will address several fundamental questions about how acoustic and visual cues interact to influence female decision making: What is the relative value of acoustic and visual cues? Does the addition of visual cues influence a female’s memory of calls? Do visual cues aid in recognizing individual males in large choruses? Does the addition of a visual cue influence the time it takes for females to make decisions? Do visual cues increase predation risk for frogs and are the bats also integrating visual cues with auditory cues to increase their foraging success? All of these studies will provide insights into how animals integrate information in the environment around them through different sensory channels. These studies will also provide a deeper understanding of the conditions under which female mate choice drives the evolution of diverse male courtship signals. In the process of this work, we will be training approximate 25 students, many of them women and minorities, in the use of robotic technologies to study animal behavior.



*Left two panels, robotic túngara frog. Right panel, live túngara frog.  
From: Taylor et al. 2011. Journal Experimental Biology 214:815–820*

## ANNOUNCEMENTS AND AWARDS cont.

### Relay For Life

The SU Biology Department participated in Relay for Life of SU on April 29, 2011. Students from Biology 210, and other devoted Biology students participated in the Relay. We raised over \$1600 by selling Biodegradable Coffee Mugs and plants during the Earth Day Celebration. If you would like a mug, we still have a few available for \$7.00. Please see Sandy Ramses in the Biology office.



### Student Research Conference

Each spring semester, Salisbury University holds an annual Student Research Conference. This is a great opportunity for our students to present their research and celebrate their accomplishments. In addition to traditional presentation panels and poster sessions, the conference may feature “projects” as diverse as music and theatrical performances, fine arts and graphic art displays, workshops and poetry readings. Our next research conference will be held on April 27, 2012. For more information and deadlines for submission go to: <http://www.salisbury.edu/susrc/>.

## UPCOMING EVENTS

### Family Weekend: October 7-9

Families of current SU students are invited to explore and enjoy all that SU has to offer. For details visit: <http://www.salisbury.edu/parents>

### Fall Colors Paddle: October 8, 3-5pm

Pocomoke River State Park - 3461 Worcester Highway - Snow Hill, Maryland  
\$20 per canoe or tandem kayak, \$15 per single kayak.

Enjoy an afternoon paddle full of fall colors on the serene waters of the Pocomoke. Meet at the Boat Rental Area by the riverfront. Contact Information: 410-632-2566 ext 115

### Ward Museum Activities

- **Annual Chesapeake Wildfowl Expo:** October 7-8, 2011

The fall air and beautiful grounds of the museum set the stage for two days of excitement. The event pays tribute to the old decoy and encourages the carving of new ones. Admission is free!

**Eastern Shore Pig Roast and Chicken Barbecue.** Tickets can be purchased at the museum’s gift shop. For more information, call the museum at 410-742-4988, ext. 120. Saturday there is barbecue chicken for sale starting at 11 a.m.

**Exciting Marketplace.** Over forty vendors participate in the buying, selling and trading of an eclectic mix of fine antique decoys, folk art, and collectible water fowling and hunting items.



[www.wardmuseum.org](http://www.wardmuseum.org)

- **Back from the Brink: Stories of Wildfowl Conservation**

September 30, 2011-January 12, 2012

On the Eastern Shore of Maryland and throughout the United States, several species of birds have neared extinction as gunning practices and habitat loss have taken a toll on wildfowl populations. Over the last century, the efforts of lawmakers, birdwatchers, environmentalists, hunters, and everyday citizens have helped to bring some species back from the brink. This exhibit shares stories of successful conservation efforts, attempts that came too late, and what the future might hold for currently threatened species and habitats.

Rachel Carson is one of the most famous authors and environmentalists that have changed the way we think about pesticides today. In *Silent Spring* (1962) she challenged the practices of agricultural scientists and the government, and called for a change in the way humankind viewed the natural world.



Photo source: www.nndb.com

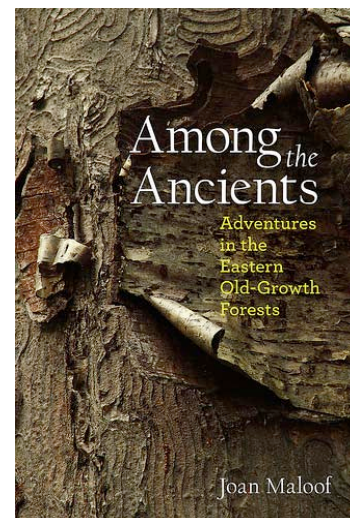
- **Drop-In Art Saturdays:** September 17, 10:00 am – 12:00 pm  
Join museum educators on the 3rd Saturday of each month for projects related to art, nature and culture that the whole family can enjoy! Drop-In Art projects incorporate paint, clay, and all sorts of fun materials. Drop-In Art projects are free and open for children of all ages. Regular admission charges apply for entrance into museum galleries.
- **Professional Development Opportunities**  
Connecting Kids Through Birds, September 29, 4:30 - 7:30 p.m.  
To learn more about this opportunity please visit our website.  
<http://www.wardmuseum.org>

### **Eastern Shore Forests: Past, Present, and Future**

**With Joan Maloof:** November 7

*Henson Science Hall 103, 7 p.m.*

What did the forests of the Eastern Shore look like 500 years ago? What are the native forest types that occur on the Eastern Shore? Forest champion Maloof presents a brief synopsis of how the Eastern Shore forests have been classified and shares the results of her work on The Nature Conservancy's Nassawango Preserve. Maloof is the author of *Teaching the Trees: Lessons from the Forest* and *Among the Ancients*, and she is currently working to develop an Old-Growth Forest Network. Sponsored by SU's Environmental Students Association and the Wicomico Environmental Trust.



**UPCOMING EVENTS cont.**



**Coal, Coffee, and Cooperation: Saving a Vanishing Songbird**

**With Katie Fallon:** November 8

*Holloway Hall, Great Hall, 7 p.m.*

Explore the relationship between the cerulean warbler, a tiny migratory songbird, and the threats to its survival by global warming, deforestation and mountaintop removal coal mining. With a fusion of scientific vigor and sense of wonder, author Fallon highlights the links between a morning cup of coffee, ecologically devastating mining practices and how the fate of a creature weighing less than an ounce is vitally linked to our own.

Photo by Richard Mallory Allnutt.

**Constellation Exploration:** November 26, 7pm

Pocomoke River State Park - 3461 Worcester Highway - Snow Hill, Maryland

\$3 per person or \$10 for a family of four.

Explore the stars over the Pocomoke and gaze at the heavens. Fun for the entire family! Take a journey with games, stories, and good old sky gazing with the naturalist to discover the night skies. Call to make your reservations today! Contact Information: 410-632-2566 ext 115

**OPPORTUNITIES**

**Society for Integrative and Comparative Biology: Grants-in-Aid of Research**

E-mail: [SICB@BurkInc.com](mailto:SICB@BurkInc.com); Web Site: <http://www.sicb.org/drupal/>

The sponsor provides supplemental awards of up to \$1,000 to graduate students in support of their research in the fields of integrative and comparative biology. Deadline: 10/14/2011

**Society for Integrative and Comparative Biology: Fellowship for Graduate Student Travel**

E-mail: [SICB@BurkInc.com](mailto:SICB@BurkInc.com); Web Site: <http://www.sicb.org/drupal/>

The sponsor provides funds of up to \$2,000 for travel and other expenses for students to work at distant research laboratories, museums, or field sites. Deadline: 10/14/2011

**Hertz (Fannie and John) Foundation: Graduate Fellowship Awards**

E-mail: [askhertz@hertzfoundation.org](mailto:askhertz@hertzfoundation.org)

Website: <http://www.hertzfoundation.org/dx/fellowships/application.aspx>

SYNOPSIS: The sponsor provides fellowships for graduate work leading to award of the Ph.D. degree in applications of the applied physical, biological and engineering sciences. Deadline: 10/31/2011

**Sponsor: Churchill (Winston) Foundation: Churchill Scholarships**

E-mail: [info@winstonchurchillfoundation.org](mailto:info@winstonchurchillfoundation.org)

Web Site: <http://winstonchurchillfoundation.org>

The sponsor provides scholarships to American citizens of exceptional ability and outstanding achievement to pursue graduate studies in engineering, mathematics, or the sciences at Cambridge. Scholarships range from \$44,000 to \$50,000. Deadline: 11/08/2011

## OPPORTUNITIES cont.

### **National Science Foundation: East Asia and Pacific Summer Institutes for US Graduate Students**

E-mail: [eapsi@asee.org](mailto:eapsi@asee.org); Web Site: <http://www.grants.gov/search/search.do?oppId=56514&mode=VIEW>

The primary goals of EAPSI are to introduce students to East Asia and Pacific science and engineering in the context of a research setting, and to help students initiate scientific relationships that will better enable future collaboration with foreign counterparts. Deadline: 11/09/2011

### **Directorate for Biological Sciences/NSF**

#### **Doctoral Dissertation Improvement Grants in the Directorate for Biological Sciences (DDIG)**

E-mail: [ddig-deb@nsf.gov](mailto:ddig-deb@nsf.gov); Website: <http://www.nsf.gov/pubs/2011/nsf11569/nsf11569.htm>

The sponsor awards Doctoral Dissertation Improvement Grants in selected areas of the biological sciences. These grants provide partial support of doctoral dissertation research to improve the overall quality of research. Allowed are costs for doctoral candidates to participate in scientific meetings, to conduct research in specialized facilities or field settings, and to expand an existing body of dissertation research. Deadline: 11/10/2011

### **American Society for Pharmacology and Experimental Therapeutics**

#### **Graduate Student Best Abstract Award**

E-mail: [paperawards@aspet.org](mailto:paperawards@aspet.org); Web Site: <http://aspet.org/awards/>

An award is given to a graduate student for the best abstract piece on experimental biology submitted to the sponsor's Experimental Biology meeting. Applicants must be a member of ASPET to access the award forms, and are advised to plan ahead and apply for membership before the deadline. Applications should be made to the Division to which research applies. Deadline: 11/15/2011

### **Rowland Institute at Harvard: Rowland Junior Fellows Program**

E-mail: [rjf@rowland.harvard.edu](mailto:rjf@rowland.harvard.edu); Web Site: <http://www.rowland.harvard.edu/rjf/program/index.php>

Program URL: <http://www.rowland.harvard.edu/rjf/index.php>

This program provides young scientists the opportunity to perform independent experimental research for five years with full institutional support and access to the sponsor's outstanding technical and scientific resources. The application deadline is November 30th each year for an appointment starting September of the following year. Deadline: 11/30/2011

### **Environmental Protection Agency: Greater Research Opportunities (GRO) Fellowships for Undergraduate Environmental Study (NCER)**

E-mail: [boddie.georgette@epa.gov](mailto:boddie.georgette@epa.gov);

Web Site: [http://www.epa.gov/ncer/rfa/2012/2012\\_gro\\_undergrad.html](http://www.epa.gov/ncer/rfa/2012/2012_gro_undergrad.html)

The sponsor offers fellowships to support quality environmental education for undergraduate students, thereby encouraging them to pursue careers in environmentally related fields and to continue their education beyond the baccalaureate level. Fellowships cover stipend, tuition, and expenses for a two year period. A summer internship is also required. Deadline: 12/12/2011

### **Microscopy Society of America: Undergraduate Research Scholarship Program**

E-mail: [albrecht@ansci.wisc.edu](mailto:albrecht@ansci.wisc.edu); Web Site: <http://www.microscopy.org/awards/scholarships.cfm>

Support is provided for scholarships with the intent to foster the educational and research potential of full-time undergraduate students interested in pursuing microscopy as a career or major research tool. Applications for research involving any area of microscopy are suitable. Deadline: 12/31/2011

**OPPORTUNITIES cont.**

Invasive species • Biodiversity • Eutrophication • Sociology • Habitat conservation • Economics

Economics • Anthropology • Nutrient dynamics • Non-point source pollution • Restoration • Mechanisms for sustaining resources



Economics • Anthropology • Nutrient dynamics • Non-point source pollution • Restoration • Mechanisms for sustaining resources



**National Estuarine Research Reserve System  
Graduate Research Fellowship**  
Natural and Social Scientists!





**[www.nerrs.noaa.gov/fellowship](http://www.nerrs.noaa.gov/fellowship)**

- Conduct your master's or doctoral research with the National Estuarine Research Reserve System – NERRS! Gain hands on experience today for a better coast tomorrow.
- Choose a research site(s) from 28 Reserves around the country
- \$20,000/year award for up to three years

- Up to 9 fellowships available. Minority students are encouraged to apply
- Deadline for applications is November 1, 2011. Apply via [www.grants.gov](http://www.grants.gov)
- You must be enrolled in an accredited U.S. College or University

Invasive species • Biodiversity • Eutrophication • Sociology • Habitat conservation • Economics

**Featured Student Matt Del Grosso is a Senior Biology Major at SU.**

In the past, if I was asked how my summer went, I would describe it as being one part work, and three parts sitting at home re-living the golden days of cinema with ridiculous low-budget horror movies. I am proud to say that I finally can respond with something new. This summer consisted of one part winning glory upon the frigid shores of Iceland, two parts knee deep in agarose gels and PCRs...and one part re-living the golden days of cinema with ridiculous low-budget horror movies. Suffice to say, this past summer has been the pinnacle of my existence to date.

Summer really started for me in the land of volcanoes and Vikings. It is nigh impossible to put into words what I have taken from the trip, but it was awesome. We were nestled in an ancient glacial valley called Holar University (Iceland) for much of the trip, but set out on numerous excursions to explore the land and become acquainted with the flora, fauna, and the people that inhabited this still raging magma plume upon which we walked. Iceland was the perfect blend of science, scenery and shenanigans. From electro fishing in frigid waters and howling winds to the summit of the 4,000-foot mountains overlooking the quaint Holar University below, there was never a dull moment.



Matt with other SU Biology students in Holar



Mountains overlooking Holar University

When I returned triumphant from a glorious Nordic expedition, I began the work that would represent the bulk of my summer, the research! I worked in Dr. Hunter's lab (who, by the way, is an awesome mentor) on establishing a profile of genetic variation between two populations of spring peepers, one Maryland and one Louisiana (thanks to Dr. Taylor). We used a technique known as Inter Simple Sequence Repeat (ISSR) that works by amplifying regions in the DNA that are variable between individuals, but are less variable the more closely related two individuals are. This is more or less the same basic principle that forensic DNA fingerprinting is based on, only instead of assigning blame we will be attempting to determine genetic diversity.



Spring Peeper (naturesound.com)

My goal for the summer was to generate data in the form of gels to analyze over the fall semester and I sincerely doubt I could have had a better time working towards anything else. By the end of the summer I had accomplished my goal, accumulating 780 PCRs with gels to match, and yet to me it hardly seemed like work. After all, there's something wonderful to be said about a job that allows you to make your own hours and gives you the opportunity to work on something that you care about, all while blasting ridiculous music through the lab and jamming out to it while gels were running.

Working in the lab was an incredible experience for me, not only for as an awesome summer job but as a learning experience as well. As of now, my journal is at least slightly legible, I can do a PCR and run a gel in my sleep (which I've found myself going through the motions more than once in a groggy state), and gained some always-important experience. More than anything however, I learned what doing science is like. Murphy is always looking over your shoulder eager to lay down his law, but you can't be discouraged when things go to hell; Murphy can be thwarted if you have the determination to just keep working in spite of looming doubt. However, the most important lesson learned for me is science is fun! Nowhere else can you devote your life to unraveling the inner-workings of the universe and have an amazing time doing it. After this epic summer, there is no doubt in my mind what I am doing after college; I'm going into science, and I can't wait to do it for the rest of my life.



Matt jamming out in Dr. Hunters Lab

**See our Featured Faculty Dr. Ellen Lawler on the next page.**

**FEATURED FACULTY**

**DR. ELLEN LAWLER**

**Courses taught at SU:** Biological Drawing and Illustration (BIOL 260), Biology of the Vertebrates (BIOL 320), Pathophysiology (BIOL 334), Ornithology (BIOL 405), Research (BIOL 415) and Readings in Biology (BIOL 420).



Photo taken at Sandia Crest, New Mexico.

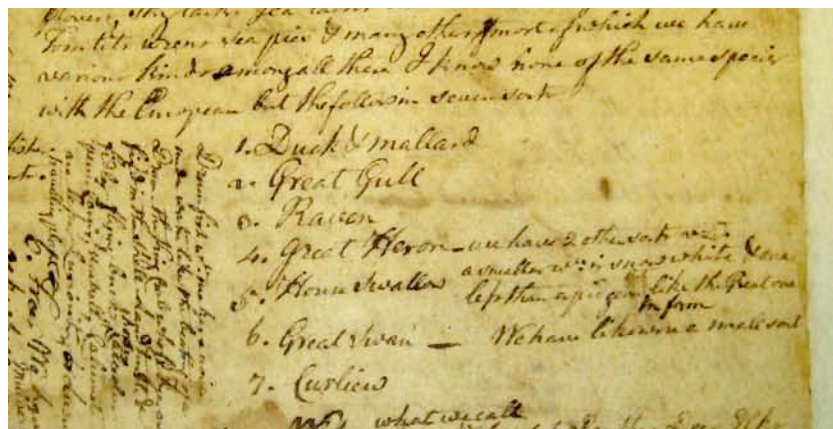


Red-tailed Hawk, photo taken in August in Dorchester County.

**Research Interests:** I have long had an interest in local natural history, particularly the diversity and distribution of birds on Delmarva and am involved in a number of citizen science projects that monitor local bird populations. I'm a regular participant in National Audubon's Christmas Bird Count and the Maryland Ornithological Society's Spring Migration Count and each June, I conduct a Breeding Bird Survey for the US Geological Service. During the Maryland Breeding Bird Atlas project, I was responsible for surveying four blocks in the western part of Wicomico County. (The atlas results were recently published and should soon be available at Blackwell Library).

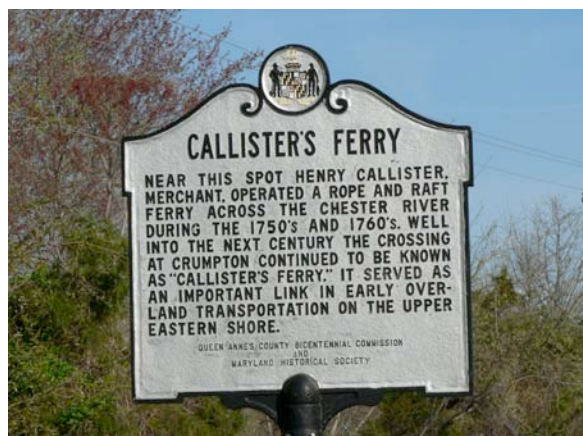
**Current Research:** My current research centers on transcribing and studying the letters of a colonial resident of the Eastern Shore who had a strong interest in natural history. Henry Callister worked for a trading company based in Liverpool, England and immigrated to Maryland in 1742. His preserved letters, both business and personal, have been used as a source of first-hand information about various aspects of life in colonial Maryland (cultural, economic and political), but his writings on nature have previously received little attention. His descriptions of local species, including fishing hawk (osprey), summer duck (wood duck), hummingbird, opossum, flying squirrel and tumbleturd (dung beetle), demonstrate that that he was a keen and enthusiastic observer. In response to questions from a Dr. Chandler (who we are trying to identify), he described a number of local swallow species and their yearly habits. At that time (and well into the 19<sup>th</sup> century), many believed that swallows spent the winter hibernating in the mud under rivers and ponds rather than in southerly locations. Callister supported the migration hypothesis, arguing that other birds were known to migrate and that the anatomy of swallows was better suited for long migratory flights than surviving submerged in the mud. He expressed other ideas that seem obvious to us today, but were unusual for the time. For instance, it was commonly held that only humans had the ability to adapt to changes in their environment. Callister didn't accept this and pointed out examples from other species. He cited differences in burrowing between rabbits in Europe and America and was impressed with how readily chimney swallows (swifts) shifted from nesting in hollow trees to chimneys. He also recognized that wild animals (such as turkeys) were able to breed with

their domestic counterparts and that the offspring exhibited a mix of characteristics from the two parents. He even suggested that in certain situations, some individuals could give rise to new species. As Callister was not a man of wealth, most of his life and letters were concerned with day-to-day business and family life. We are continuing to search through his letters for more references (even brief) to nature and trying to determine sources that may have influenced him. We are also researching other colonial naturalists in Maryland, but there appear to be few compared to other mid-Atlantic colonies. Callister's natural history writings may be among the earliest from Maryland. They certainly demonstrate that he had wide-ranging interests, was well read, and had a keen mind and a good understanding of basic biological concepts.



**Photo Above:** List of birds found in Europe and America in Callister's letter about "Remarkable Curiosities of Maryland".

**Photos Below:** In his later years, Callister maintained a ferry at this site on the Chester River between his business in Kent County and Queen Anne's County.



**Recent Presentation:** E. M. Lawler, S. A. Rubin and B. L. Umland, 2010. Observations on Natural History by Eighteenth-Century Maryland Merchant, Henry Callister. (Poster) American Society for Environmental History, Annual Meeting in Portland, OR.

**Paper in Preparation:** The "Swallow Dissertation" of 18<sup>th</sup> century amateur naturalist, Henry Callister. To be submitted to *Archives of Natural History*.

## MEETINGS/ PRESENTATIONS/ TRAVEL

Sabrina Kunciw presented “Changes in Gene Expression for Lipid Metabolism in Chinook Salmon during Temperature Change” at NCUR, Ithaca, NY, April 2011. This project received an SU NCUR Travel Award.

Several Biology faculty and students attended the 28th Annual Mid-Atlantic Plant Molecular Biology Society Meeting held at the Patuxent Research Refuge in Laurel, MD on August 15-16. Faculty in attendance were: Mark Holland, Kim Hunter, Patti Erickson, and Les Erickson. SU graduate students: Caren Wiley and Kristin Zuravnsky. Undergraduate student: Stephen Kelley.

### **The following presentations were given at the Salisbury University Student Research Conference (SUSRC) - Friday, April 29, 2011.**

**Allison Collins & Jennifer Lasbury** presented “Quantifying the Longevity and Profusion of *Bdellovibrio* Bacteriovorus and *Escherichia coli* within the Model Organism *Caenorhabditis elegans*”  
Faculty Advisor Dr. Elizabeth Emmert

**Harsh Desai** presented “Temperature-Induced Restructuring of Plasma Membrane Phospholipids in Chinook Salmon Cells”  
Faculty Advisor Dr. Eugene Williams

**Nelson Dyer** presented “Species Diversity and Foraging Height of Silphidae (Coleoptera) in the Nassawango Creek Preserve”.  
Faculty Advisor Dr. Dana Price

**Ryan Johnston** presented “Scarabaeoid Beetles (Coleoptera) of Maryland”.  
Faculty Advisor Dr. Dana Price

**Sabrina Kunciw** presented “Temperature-Induced Changes in the Expression of Genes for Membrane Lipid Metabolism in Chinook Salmon Cells”.  
Faculty Advisor Dr. Eugene Williams

**Victoria Kutch** presented “Renewable Fuel from Sweet Sorghum Juice”.  
Faculty Advisor Dr. Elizabeth Emmert

**Sara Mayes, Grant Goldberg, Samantha Hawkins & Stephanie Bogle** presented “Analysis of the Nordihydroguaiaretic Acid in *Larrea tridentata* by way of Citizen Science”.  
Faculty Advisor Dr. Kimberly Hunter

**Kelsey Mitchell & Samantha Aylor** presented “Sexual Selection in Spring Peepers (*Pseudacris crucifer*)”.  
Faculty Advisor Ryan Taylor

**Nathan Peroutka-Bigus** presented “The Effects that Antioxidants have on the Accumulation of Oxidized Proteins Over the Lifespan of *Caenorhabditis elegans*”.  
Faculty Advisor Dr. Patti Erickson

**MEETINGS/ PRESENTATIONS/ TRAVEL cont.**

**Elizabeth Rentz** presented “Species Diversity and Succession of Dung Beetles to Pony Dung on Assateague Island”.

Faculty Advisor Dr. Dana Price

**Kimberly Russell & Jason Boos** presented “Wicomico County Creekwatchers Water Quality Monitoring Program”.

Faculty Advisor Dr. Judith Stribling

**Matthew Russo** presented “Role of HDAC-6 in *C. elegans* Response to Oxidative Stress”.

Faculty Advisor Dr. Patti Erickson

**Jason Smith** presented “Scarabaeoidea of Old Growth and Second Growth Upland Hardwood Forests”.

Faculty Advisor Dr. Dana Price

**Aisha Ullah** presented “Use of *Bdellovibrio bacteriovorus* to Control Bacterial Infections in the Model Host *Galleria mellonella*”.

Faculty Advisor Dr. Elizabeth Emmert

**Caren Wiley, Ericka Veliz, Carlene Avalone, Tiffinee Engrum & Matthew Del Grosso** presented “Molecular Biodiversity of Plants and Animals: Conservation, Sexual Selection, and Speciation”.

Faculty Advisor Dr. Kimberly Hunter

**On August 10, 2011, eight SU Biology students presented their summer research findings during the Guerrieri Undergraduate Summer Research Symposium. Pictures are shown on the next page.**

**Stephanie Bogle** presented “Phonotaxis in the Tungara Frog (*Physalaemus pustulosus*): The Role of Auditory Grouping in Sexual Selection”.

**Matt Del Grosso** presented “Genetic Variability among Spring Peeper Populations”.

**Nelson Dyer** presented “Species Diversity and Foraging Height of Silphidae (Coleoptera) in the Nassawango Creek Preserve”.

**Grant Goldberg** presented “Sexual Selection and Multimodal Signaling in Tungara Frogs”.

**Stephen Kelly** presented “Change in Species Composition of Dung Beetles across Seven Forests of Eastern Maryland”.

**Hanna McFadden** presented “A Method for Field-Testing the Genetic Diversity of Populations of Icelandic Arctic Char (*Salvelinus alpinus*)”.

**Elizabeth Rentz** presented “Species Diversity and Succession of Dung Beetles to Pony Dung on Assateague Island.”

**Kristen Zuravnsky** presented “Norihydroguaiaretic Acid In *Larrea tridentata*”.

**Guerrieri Undergraduate Summer Research Symposium**

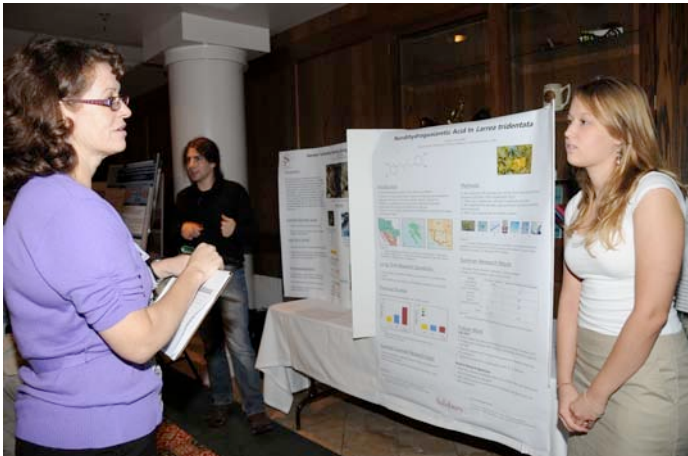
All photos below were taken and provided by Kathy Pusey, Visual Images Coordinator at SU.



Dr. Anita Brown, Chair of the Chemistry Department and Hanna McFadden



Dr. Karen Olmstead, Dean of the Henson School of Science and Technology and Nelson Dyer



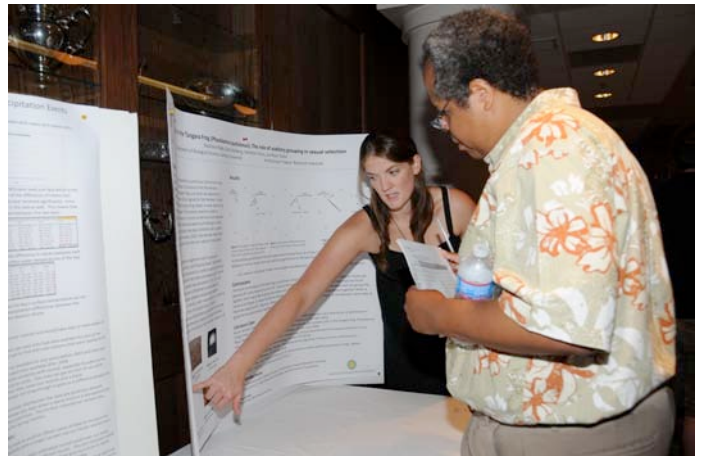
Dr. Kimberly Hunter and Kristen Zurvansky



Matt Del Grosso



Left to Right: Dr. Dana Price, Elizabeth Rentz, Nelson Dyer, and Stephen Kelly



Stephanie Bogle and Dr. Miguel Mitchell (Chemistry)

## ALUMNI

### Activities after Graduation:

Kim Alonge - Interdisciplinary Graduate Programs in the Biomedical Sciences of West Virginia University Schools of Medicine and Pharmacy

Carlene Avalone is a Field Technician with Mass Audubon's Coastal Waterbird Program, Chatham, MA.

Samantha Aylor is pursuing a Masters degree at the University of Florida.

Kimberly Bowen - Pharmacy Graduate Program - Maryland

Lauren Brenneman is working for Envirotech Environmental Consulting Inc. in Delaware.

Josh Brewer (2002) has been accepted into West Virginia Osteopathic Medical School.

Lauren Carey (2007) graduated from the Virginia Maryland Regional College of Veterinary Medicine, at VA Tech. She will be a vet at the Savannah Animal Hospital in Lewes, DE.

Beth Clifton accepted a position as a research scientist at Dupont Biotechnology.

Connor Cox - Physical Therapy PhD program at UMES and received the Eastern Shore Big Brother of the Year award.

Thomas Crum - Selected for an interview for pharmacy school at U.M.E.S., waiting to hear results. If doesn't attend pharmacy school then will be applying to a physician's assistant program.

Donald D'Aquila - UMES and St. Georges Pharmacy Graduate Program

Harsh Desai - Accepted into University of MD Medical School.

Caitlin Donahue (2009) - University of MD Dental Hygiene Program.

Lindsey Haney - Texas Tech Paul L. Foster School of Medicine Class of 2015

Zach Haupt - Medicine Graduate Program – Maryland

Allison Ross Kollinger - Physicians Assistant at Duke University.

Colleen Maier (2008) - Philadelphia College of Osteopathic Medicine; waitlisted Creighton University.

Michelle Meininger worked for the Nature Conservancy of Maryland during summer 2011.

Edward Mikula - Physicians Assistant at Towson University.

Meredith Murray - Masters of Professional Science Program at the University of Miami.

**ALUMNI cont.**

Meghan Neal - Virginia-Maryland Regional College of Veterinary Medicine.

Kelsey Norris accepted an internship position with Lonza in Salisbury, MD.

Allison Ose - University of Maryland, College Park MS Program for Biology and Chemistry Secondary Education.

Kayla Pennerman - Graduate school - Virginia Tech.

Nathan Peroutka-Bigus accepted a research position with Dr. Jeffery Pederson, who works with the USDA-Agricultural Research Service/University of Nebraska on sorghum genetics.

Keith Polizois - Dentistry (University of Florida, Indiana Univ., UMDNJ and Nova Southwestern).

Sabrina Kunciw (2011) University of Maryland School of Medicine; US Army Health Professions Scholarship.

Georgianna Porter (2011) is working at the National Institutes of Health with the Department of Environmental Protection.

Ryan Protzko (2010) is working as a research technician at Johns Hopkins University.

Spencer Smith - Philadelphia College of Osteopathic Medicine (D.O.).

Emily Taylor - University of Delaware.

Kelly Washington - Dentistry Maryland.

Mary Willard was accepted into the MEES Graduate program at University of Maryland.

Laura Winn - Notre Dame of Maryland School of Pharmacy.

Michael Wroten - University of Maryland School of Medicine.

**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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