SANDRA KEHOE-FORUTAN has always had a fascination with cemeteries, whether geographical or genealogical. During a sabbatical in the spring of 2012, Kehoe-Forutan, professor of environmental, geographical and geological sciences at Bloomsburg University, undertook research to identify, locate, and document cemeteries and burial sites of the Gullah and other cultures on St. Helena Island and surrounding islands along the coast of South Carolina.

Kehoe-Forutan first became interested in cemeteries in the Torres Strait Islands of Australia while conducting doctorate research. While studying development pressures in the “low country” of South Carolina, she found parallels between Gullah burial customs and those of the Torres Strait Islanders. The sabbatical allowed her to look closer at these Gullah burial customs on St. Helena Island.

St. Helena Island, formerly home to 55 plantations, is one of several barrier islands along the coast of South Carolina. Slaves working on the plantations were buried in many cemeteries on the island as early as 1785. Plantation owners set aside marginal, less valuable land where slaves could bury their dead. Often the slaves preferred it that way so they could be buried near the ocean and their homeland in Africa.

Descendants of these slaves are known today as Gullah. The Gullah culture encompasses a system of beliefs, art, foods and language maintained by descendants of West Africans who settled along coastal areas from North Carolina to Florida. After the Civil War, the Gullah on St. Helena Island were among the first Africans to be freed from slavery. Their native language is still spoken today, but many of the customs passed down in the oral tradition have

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CURIOUS SHEPARD

MICHAEL SHEPARD, professor of environmental, geological, and geographical sciences, discussed how binary asteroids were discovered and how asteroids frequently travel in pairs or in triples in an article featured in Sky and Telescope magazine’s December 2012 issue. The article, Why do Asteroids come in Pairs? outlines three ways in which binary asteroids form.

Shepard said studying asteroids helps scientists prepare strategies against an impact with Earth. Because asteroids are essentially rubble that is stuck together, they behave like sandbags when faced with force. With that in mind, the Hollywood-acclaimed method of firing nuclear warheads at or near an asteroid may not be as effective as one might expect, he adds.

Asteroid 2012 DA14 is a prime example of the importance of understanding what goes on outside our atmosphere. On Feb. 15, the asteroid flew dangerously close to Earth, its nearest point being 17,200 miles away, a distance closer than the moon. Another meteorite, Chelyabinsk, made headlines when it blew up in Russia on the same day.

Shepard’s interest in the universe grew from his childhood in the era of the Apollo space program. He earned his doctoral degree from Washington University and has taught at BU since 1995. Dedicated to making complex scientific topics understandable to the general public, he wrote a regular column for the Press Enterprise, The Curious Professor.

“The world is becoming increasingly complex,” says Shepard. “It relies on [understanding] scientific concepts.”

To Shepard, that understanding starts in the classroom.
Geological Society Meeting

Jennifer Whisner, Steven Whisner and Cynthia Venn from geography and geosciences attended the Northeastern Geological Society of America (NE GSA) in Bretton Woods, N.H., in March. These students accompanied the faculty members: Kendi Waltemyer, Derek Weicht, Franklin Rodemer, Robert Kresch, Sarah Kitting, Michele Plastow, Lynnette Eichenlaub, Matthew Pisanchyn, Al Broody, Alex Clinefelter.


Titles for NEGSA 2013

- Waltemyer K.L., Venn C., Whisner S., Christopher H., Christopher P. A Study of Alexander Caverns (Mifflin County, PA): Water Chemistry and Structural Geology
- Kresch R., Venn C., Hallen C. Searching for Sources of Trace Metals in the Susquehanna River near Byers Island, Shamokin Dam (Northumberland County) PA
- Kitting S., Kresch R., Brandt C., Alarcon F., Venn C., Hallen C. Water Chemistry of a Portion of Bear Creek Watershed, including Crystal Lake, Catfish Bog, and Wild Rice Lake, near Hughesville (Lycoming and Sullivan Counties), PA
- Rodemer F.E., Hallen C.P., Venn C. Influence of the Oneida #3 Acid Mine Drainage and Passive Limestone Treatment System on Little Tomhicken Creek near Oneida (Luzerne County), PA
- Pfister S., Venn C., Hallen C.P. Geochemical Baseline Study of Ten Stream Sites in the Briar Creek Watershed (Columbia County, PA) in Relation to Land Use and Geology of the Surrounding Area
- Plastow M., Pisanchyn M., Pfister S., Venn C., Hallen C.P. A Geochemical Analysis of an Acid Mine Drainage Treatment System near Ranshaw (Northumberland County), PA

Research

- Broody A., Kitting S.E., Whisner J.K. Analysis of selected metals in groundwater and soil on Byers Island near Sunbury, Northumberland County, PA.
- Whisner J.K. Stream channel monitoring, course-embedded field work, and service learning - a fortuitous confluence along lower Fishing Creek, Columbia County, PA.

Whisner S., Venn and Hal len

Geography and geosciences faculty Steven Whisner, Cynthia Venn and Christopher Hallen were coauthors of a talk at NEGSA:

- A Multidisciplinary Approach to Teaching Through Residential Water Well Sampling: combining structural geology, aqueous geochemistry and hydrogeology into a cohesive exercise in Northeastern, PA.

Cynthia Venn

Cynthia Venn, associate professor of geography and geological sciences, presented a poster coauthored by Christopher P. Hallen, professor of chemistry, “A Model for Incorporating Embedded Research and Service Learning into an Undergraduate Course in Aqueous Geochemistry,” at the Association for the Sciences of Limnology and Oceanography in New Orleans, La.

Jennifer Whisner

Jennifer Whisner, assistant professor in the environmental, geographical and geological sciences, attended the Western Pennsylvania Conservancy Shale Gas Impacts Assessment and Monitoring Workshop in January at Lycoming College, Williamsport, where attendees discussed better and more collaborative ways to monitor and assess development impacts on species and their habitats and how the data can be applied to conservation planning and management. Whisner also gave a talk on Wetlands and Flooding to three classes at Columbia Montour Vo-Tech in January.

Brett McLaurin

Brett McLaurin, associate professor in the environmental, geographical and geological sciences, attended the National Science Foundation’s EarthCube Cyberinfrastructure Workshop for the Sedimentary Geology Community in Salt Lake City, Utah, in March to help generate ideas to facilitate data-sharing, establish standards and provide a framework for collaborative efforts.

Michael Shepard

Michael Shepard, professor in the environmental, geographical and geological sciences, was coauthor on a professional paper, “Spectrogoniometry and modeling of Martian and lunar analog samples and Apollo soils” in the March 2013 issue of Icarus, the International Journal of Solar System Studies.
Pennsylvania Academy of Science Conference

Biological and Allied Health Sciences (BAHS) faculty and students presented research during the Pennsylvania Academy of Science Conference at Cedar Crest College in Allentown. Students and faculty presented the following:

- Pierce D.H., Hess A.R. Eph receptor and ephrin ligand expression in human keratinocytes, melanocytes and melanoma cell lines.
- Lowenberger L.K., Gray B.L., Corbin C.E. Morphology, Bite-Force, and Bill Closing Velocity in North American Birds.
- Thompson C., Ressler H., Surmacz C., Hranitz J.M. Protease Inhibitors Reduce Degradation of the Cellular Stress Marker HSP70 in Lumbiricus variegates.

BAHS Publications

- Rier S.: Degenstein Foundation ($10,000). Foundation for Pennsylvania Watersheds ($15,000)
- Polhill J., Venditti, J. Presidential Strategic Planning Grant. Summer STEM Enrichment Program
- Henry K. Identification of a putative histone acetyl transferase (HAT) in Candida glabrata and its role in multidrug resistance gene regulation
- Venditti J. Alpha-L-fucosidase as a Predictor of Fertility

Research and Scholarship Day

SEVERAL BIOLOGICAL and Allied Health Sciences (BAHS) students shared the results of their research projects at the College of Science and Technology Research and Scholarship Day at the end of the fall 2012 semester. Several talks were delivered by Laurel Downs, Corey Bower, Jonathan Moore, Gabriel Barrile, and Jordan Klinger, students from faculty John M. Hranitz and Thomas Klinger’s research group that examines the genetics, morphology, development and natural history of the toads on barrier islands of the Eastern Shore of Virginia.

Members of the research group conducted their studies in the summers of 2011 and 2012 at the Marine Science Consortium, Wallops, Island, Va. The group also presented their work at the annual meeting of the Society for Integrative and Comparative Biology in San Francisco.
VENDITTI AND SURMACZ

THE FOLLOWING by Jennifer Venditti and Cindy Surmacz was published in The American Biology Teacher:


Venditti, along with her research group, also had two presentations accepted by the American Society for Andrology for their 38th annual meeting in San Antonio, Texas in April. Neil Sullivan presented a poster on "Functional Distribution of Human Semen Alpha-L-Fucosidase as a predictor of fertility." Charmiane Henderson, Elisa Busada, and Neil Sullivan are co-authors on the accepted abstract "Investigating the Cytotoxic effects of novel compounds as potential spermicides."

JESSICA WILLIS

JESSICA WILLIS, who earned a bachelor's degree in biology, pre-medical sciences, this spring was awarded a grant of $560 from the Beta Beta Beta Research Foundation for her research into the relationship of the presynaptic proteins rab3a and synapsin while at rest and during synaptic activity at the mouse diaphragm neuromuscular junction. She is conducting the research with William Coleman, assistant professor of biological and allied health sciences.

Willis is testing the hypothesis that if rab3a and synapsin interact during synaptic activity, these two proteins will show an increase in colocalization in the presynaptic terminal during treatment with a depolarizing high potassium solution. She has gained experience with fresh tissue dissection and immunohistochemistry techniques as part of her study. Willis used her grant to purchase new primary antibodies.

NURSING

Presentations


- Ficca M., Chikotas N. An Interprofessional Education Initiative Utilizing Standardized Patients with Advanced Practice Nursing Students. Presented at the 2013 American Association of Colleges of Nursing Master’s Education Conference held in conjunction with the Quality and Safety Educator in Nursing (QSEN) Faculty Development Workshop. Orlando, Fla.

Publications


BABS Presentations

- Oakes S.M., Hranitz J. A bioinformatics study of microsatellite loci in the Mya arenaria genome

- Klinger J.M., Hranitz J. Evaluation of Cane Toad Microsatellite Primers for Cross-species Amplification of Microsatellite Loci in Fowler’s Toad

- Downs L., Hranitz J. The Effect of Island Dwarfism on Sexual Dimorphism and Female Reproduction in Island versus Mainland Populations of Anaxyrus fowleri, a Species that Exhibits Island Dwarfism

- Bower C.D., Hranitz J. Comparative Approach to the Evolution of Body Size in Island and Mainland Environments

- Barrile G., Hranitz J. A Common Garden Experiment Comparing the Larval Growth and Development of Anaxyrus fowleri from island and mainland populations

- Moore J., Hranitz J. Distribution of Anurans in Freshwater Habitats on a Assateague Island

- Baade S., Rier S. Polyphosphate Storage in Stream Periphyton

Publications


Joan Miller

Joan Miller, associate professor of nursing, collaborated with a colleague, Virag Rab, from the University of Pécs in Hungary, to study globalization and the mind’s need for success in a rapidly changing society. Students enrolled in the course represented a variety of disciplines and interacted in real time using Blackboard Collaborate. Faculty from both institutions measured the effectiveness of participation in an intercultural course in terms of achieving greater global awareness and competency. Outcomes of this joint project were reported at the Global Awareness Society Conference in May.
COMPUTER SCIENCE

Programming Team wins PACISE Contest

A TEAM OF COMPUTER SCIENCE STUDENTS from Bloomsburg University took first place in this year’s Pennsylvania Association of Computer Science and Information Science Educators (PACISE) College Programming Contest. The Association for Computer Machinery (ACM) student chapter members Nicole Burfeind, John George and Ryan Oravec completed six problems to win the three-hour competition.

The annual PACISE Programming Contest and Conference brings together students from the 14 Pennsylvania State System of Higher Education schools every spring. This year 22 teams from 11 schools competed at East Stroudsburg University. Also participating from Bloomsburg was a team consisting of Shane Levengood, Dan Eubank and David Sutherland, and team alternates Melissa Wall and Mike Young. Robert Montante, associate professor of computer science is the ACM adviser.

INSTRUCTIONAL TECHNOLOGY

Karl Kapp Awarded NSF Grant

Lead the Way, was awarded a $250,000 grant over three years from the National Science Foundation (NSF) Advanced Technology Education (ATE) program.

Kapp, professor of instructional technology, is co-principle investigator on the project. He and the investigation team will examine and compare the costs and learning outcomes of using on-site, hands-on testing equipment versus an online simulation, with the goal of improving outcomes and reducing costs. Undergraduate engineering technology students and pre-engineering high school students in the Project Lead the Way network of 4,215 schools nationwide will use the results of this project.

The project objectives are to create and distribute an open source with a virtual, flexible online testing lab simulation. Kapp and the investigation team believe the virtual simulator has potential to provide major improvements in teaching and learning. Their opinion is based on research showing simulation games can not only engage but motivate students, improving learning rates and knowledge retention. The project is expected to also create close industry ties through integrated learning opportunities for students.

This is Kapp’s second time as co-principle investigator for an NSF grant project. He is currently serving his last year of a five-year grant funded by the NSF Discovery Research K-12 program. The project, Simulations and Modeling in Technology Education, explored blending computer gaming and physical modeling using tools and materials. This project is a collaboration with Hofstra University.
PHYSICS

Four inducted into Physics Honor Society

MICHAEL ASHTON, Robert Gionfriddo, Kelly Barko and Mark Campbell, physics and electronics engineering students, were inducted into the physics honor society, Sigma Pi Sigma, on May 8.

To be eligible, undergraduate candidates must be in the upper one-third of their class. Candidates must have completed at least three full-time semesters and at least three courses in physics eligible towards the physics major. Undergraduates who are not majoring in physics also will be considered for membership if they demonstrate an interest in physics and meet the minimum standards.

NADA JEVtic

Nada Jevtic, assistant professor of physics and engineering technology, and Peter Stine, chair of physics and engineering technology, co-authored a paper, “Stochastic Brightness Variations in the Central Star of Planetary Nebula NGC 6826,” accepted for publication by the Astrophysical Journal. The paper deals with a novel application of nonlinear time series analysis to Kepler Space Telescope light curve data. NGC 6826 is commonly known as the “Blinking Nebula.”

The Astrophysical Journal is one of the most eminent journals for astronomy and astrophysics.

EXERCISE SCIENCE

Keaton Bennett

Student Keaton Bennett presented a poster, “Failure to Attain Preset Isokinetic Target Velocities in Trained Athletes,” at the Susquehanna Valley Undergraduate Research Symposium, held at the Geisinger Medical Center, Danville, last August. Bennett worked with Swapan Mookerjee, professor of exercise science, in developing this project and presentation.

Swapan Mookerjee

Swapan Mookerjee, professor of exercise science, conducted a seminar in Exercise and Sport Physiology at the German Sport University, Cologne, Germany, in May 2012. Mookerjee also gave an invited lecture, “Investigating Muscle-Brain Hemodynamics and Oxygenation Trends during Exercise with Near-Infrared Spectroscopy,” at the American College of Sports Medicine Mid-Atlantic Region meeting in November 2012 in Harrisburg. Mookerjee presented results of collaborative research projects conducted with Yagesh Bhambhani, University of Alberta, Edmonton, Canada. These projects were partially funded by Research and Disciplinary Awards from Bloomsburg University.

AUDIOLOGY

National Stuttering Association

GRADUATE STUDENTS John “Chip” Benedict and Danielle Blackburn, attended the annual National Stuttering Association (NSA) conference in St. Petersburg, Fla. The students’ experiences at the conference were published in the NSA newsletter Letting Go.

Kimberly Cardimona

The following was presented by Kimberly Cardimona in April:

• Identifying Effective Mathematical Problem Solving Strategies for ELLS Through Social Interaction. Presented in Liverpool, United Kingdom, for the International Association of Teachers of English as a Foreign Language conference.

• Knowledge Poverty in ELL Teacher Education Assessment. Presented at the American Educational Research Association Conference.

For news about research, presentations and publications, see bloomu.edu/research_scholars.