

Exploration & Discovery

NEWS AND INFORMATION FROM THE DIVISION OF RESEARCH AND GRADUATE STUDIES VOLUME 5, ISSUE 5

Pirates Captured by the Feds - the Intergovernmental Personnel Act (IPA)

ECU faculty members are routinely "captured" into the Intergovernmental Personnel Act (IPA) Mobility Program, which enables temporary assignment to a federal agency. ECU IPA's serve to illustrate the respect and reputation of ECU's growing research enterprise.

As ECU's Lisa Clough notes, it can be quite rewarding to be "captured by the feds." "It's exciting when your job is to think across disciplinary boundaries," she says. Additionally, most IPAers continue relationships with agencies following their return to ECU, in part due to ongoing linkages/alignments to their research.

Dr. Lisa Clough (Dept. of Biology) will return from a two-year assignment with the **National Science Foundation** this summer. At NSF, she serves as program director for its Antarctic Integrated System Science program and is on the working group for NSF's Climate Change Education Partnership and Partnerships for International Research and Education. She is also one of the NSF science representatives at the McMurdo Station in Antarctica.

Dr. Jeff Johnson (Dept. of Sociology and Institute for Coastal Science and Policy) is currently on assignment with the **U.S. Army**, developing modeling systems regarding human adaptation/response to perturbations including mass migra-

tion, revolutions, and war. Johnson's work exposes him to high-risk environments, but he believes it is essential to creating systems for tactical decision-making, increasing the predictability of adversarial intent, and aiding rapid socio-cultural assessment in conflict zones and in humanitarian efforts.



Dr. Jamie Kruse (Dept. of Economics) recently completed an assignment as chief economist with the **National Oceanic and Atmospheric Administration**. She represented NOAA on the White House Office of Science and Technology Policy Subcommittee for Social, Behavioral and Economic Science and the Subcommittee on Ocean Science and Technology Policy. She also co-chaired the Interagency Working Group on Ocean Social Science and served on the

National Incident Command Economic Solutions Team assessing the socio-economic impacts of the BP oil spill and Hurricane Katrina.

Dr. Lesley Lutes (Dept. of Psychology) is on assignment with the **Veterans Administration**, addressing why veterans are more likely to be overweight than the typical American. Lutes received a \$1.5 million grant from the VA to conduct clinical trials on her "small changes" weight management plan with trials in progress in Ann Arbor, MI and Cleveland, OH. Lutes hopes to include a VA site near Greenville, NC in the next round' enabling expanded ECU research.

Dr. Tim Runyan (Institute for Coastal Science and Policy) recently returned from assignment as manager of **NOAA's Maritime Heritage Program**. Among his projects was supporting Voyage to Discovery, a multimedia educational initiative highlighting African-American contributions to U.S. maritime heritage while fostering increased participation in marine careers and ocean conservation. Runyan also served as scientific advisor on a \$3 million project investigating shipwrecks on hard bottom canyon environments that was sponsored by the Department of Interior, Bureau of Ocean Energy Management, Regulation and Enforcement.

Renamed Ecology Lab & Scholarship Honors ECU Researcher's Legacy

For **Dr. Robert R. Christian** (Dept. of Biology), the March 18 ceremony for the naming of the Brinson-Christian Ecology Laboratory within ECU's Howell Science Complex was a bittersweet event. The renaming was in honor of Christian's contributions to the field, but also that of another recently retired colleague, **Dr. Mark Brinson**, who passed away unexpectedly on January 3 at the age of 67.

"We lost a thoughtful, hardworking and creative wetland ecologist who not only advanced wetland science but also provided important linkages between science and environmental management," says Christian.

Brinson's influence had wide scope. Joining ECU in 1973, he taught numerous courses and workshops on wetlands and ecosystem ecology nationally and internationally. He co-authored and edited many publications on wetlands and also served as a consultant to the U.S. Environ-

mental Protection Agency, the U.S. Fish and Wildlife Service, and the Smithsonian Institute. He also served as president and board member for the Society of Wetland Scientists. In addition, Brinson received a National Wetlands Award for Science Research and a Fulbright Foreign Scholarship Award at the University of Buenos Aires, used to aid in the development of wetlands management within Argentina.

Dr. Brinson is being memorialized through a scholarship for ECU biology students that has been established in his name. Contributions can be made to: "ECU Foundation, Inc., Biology Scholarship Fund/In memory of Mark Brinson" and sent to Tammy Garris, ECU Director of Gift Records, Greenville Centre, 2200 S. Charles Blvd., Greenville, NC 27858.



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SPOTLIGHT ON ECU GRADUATE STUDENTS

Tonia Zyburt

Promoting Recreation for Everyone

As a fan of indoor and outdoor recreation, ECU graduate student Tonia Zyburt applies the same love of activity to her research.

A candidate for an M.S. in Recreational Therapy Administration, Zyburt studies how participation in adapted adventure/outdoor activities such as skiing, sail boating, mountain biking, fishing, kayaking, ATVs and hunting can benefit individuals who have spinal cord injuries (SCI). She believes participation in adventure programs can increase mobility, physical independence, and social/community integration for persons with SCI.

Zyburt's research examines how recreation can lead to positive outcomes and if the amount of recreation an individual with SCI participates in the first year following discharge is predictive of overall community integration outcomes. She enjoys working with the SCI population, whose capabilities she describes as "incredible," and because new technology and adapted equipment are constantly emerging. Zyburt is encouraged by the increasing adapted recreational opportunities and hopes for greater awareness of the programs because "no one should miss out on the opportunity to experience adventure regardless of ability."



Albee Therese S. Ongsucu

Pointing Children Toward Success

Addressing the mental health needs of middle school students in a rural school setting in eastern North Carolina puts Health Psychology PhD candidate Albee Ongsucu in the center of a whirlwind.

Ongsucu examines the effects of tutoring, counseling and consultation on the attitudes, behaviors and academic performance of these students. She hopes to find solutions to the problems of academic failure, anger, anxiety and other issues that impede their learning. Ongsucu works to help these children, who may have been taught inappropriate peer and classroom behavior, to improve and find better ways of dealing with problems.

Combating the inappropriate practices of parents and teachers is challenging, but Ongsucu feels rewarded when those adults observe differences in the child's behavior and alter their behaviors to reinforce the child. She feels that helping children manage mental health issues is one key to their academic success.

Says Ongsucu, "I'm helping the middle school students I work with to realize that they have so many opportunities for the future, and that the world is a lot bigger than North Carolina."



MEET THE RGS STAFF



Rick Smiley

assists investigators as they prepare and submit proposals to funding agencies, e.g., governmental, philanthropic and commercial. Rick believes that "because this is what I do every day, I have

become familiar with the details of the proposal submission process at multiple agencies. Reconciling ECU's policies, the sponsor's policies, various levels of operational complexity and the actual goals of the proposed project is daunting for folks who only occasionally work with these issues. I would love to say that my job is to make things simple, but that's often not really possible. I tell people that "if dealing with grants seems very complicated, its only because seeking external funding is a very complicated process"

Christina Kennedy

is a financial analyst with the Office of Grants and Contracts. She indicates that the best way to describe her job is "a mission to follow individual grant awards. I assist with the management and monitoring of the award to ensure compliance with sponsor guidelines." A native of NC born in Wilmington, Christina has a BS in accounting and six years at ECU as a controller for the East Carolina Alumni Association, ECU Foundation and ECU Real Estate Foundation.



REGIONAL ECONOMIC OUTREACH IN THE EASTERN NC REGION

Small Business & Technology Development Center: What's in it for the Economy?



The Small Business & Technology Development Center (SBTDC) is a business advisory service of The University of North Carolina system. Since 1984, the SBTDC has helped over 100,000 North Carolina businesses operate more effectively and efficiently. The SBTDC at East Carolina University is housed in the Office of Engagement, Innovation, and Economic Development and is one of 16 offices across the state. SBTDC services focus on management counseling and training, addressing issues that include market research, improving financial performance, accessing capital and markets, and improving management and employee performance.

SBTDC also provides targeted, research-based educational products that are focused on change management, strategic performance, and leadership development for management teams, employees and board members. The SBTDC offers specialized market development services that are specifically designed to aid growing companies in expanding their markets and increasing competitiveness. These areas include government procurement, international business development, boating industry, technology development/commercialization and market research services. The ECU regional center serves twelve counties that include Beaufort, Carteret, Craven, Edgecombe, Greene, Jones, Lenoir, Martin, Pamlico, Pitt, Wayne and Wilson. Most SBTDC services are free of charge, and all SBTDC services are confidential.

The SBTDC at ECU works with colleges on campus in providing assistance to small and mid-sized companies in the region. One example is the SBTDC and ECU response to the UNC directive to more fully engage business students in the economic recovery of NC companies. In response, the SBTDC has placed more than 25 ECU MBA/MSA student interns. Under the guidance of SBTDC staff, these students provide assistance to SBTDC clients while obtaining course credit toward their degrees. In 2010, the SBTDC provided 4,500 hours of assistance to nearly 400 companies in the region, which aided them in creating and retaining more than 700 jobs.

2011 ECU AWARDS FOR ACHIEVEMENT IN RESEARCH & CREATIVE ACTIVITY

During Research & Creative Achievement Week, April 4-8, the 2011 recipients of ECU's Lifetime and Five-Year Achievement Award for Excellence in Research and Creative Activity will be recognized for their work. Awardees were selected by the Vice Chancellor for Research and Graduate Studies upon recommendation by the Faculty Senate Academic Awards sub-Committee subsequent to nomination by their peers. Each recipient will receive a cash award and conduct a special public seminar during Research & Creative Achievement Week. The recipient of the lifetime achievement award is recognized for accomplishments across the entire span of their professional career, and recipients of the five year award are recognized for their achievements during five years of continuous service at ECU.

William Joel Meggs, MD, PhD, FACMT, FACEP

Exploring the Boundaries between Medicine and Science

Over the past three decades, **Dr. William Joel Meggs** (Dept. of Emergency Medicine, BSOM), 2011 recipient of the Lifetime Achievement Award for Excellence in Research and Creative Activity, has made contributions to medicine and science that have shown innovation and creativity in amazingly diverse areas. His work ranges from new hypotheses on the nature of organization in biology to practical considerations such as the best way to preserve life from potentially fatal snakebites.

Meggs has demonstrated that in the absence of specific antivenin for imported snakes, the antivenin available for local snakes (or antivenom, as it is more commonly known) could be used in certain circumstances. Meggs's work in this area is critical given the increasing number of exotic snakes being kept as pets in this country, and more victims of exotic snakebites coming into the ER as a result. Additionally, while first aid measures used in the field before a snakebite victim can get to a hospital for administration of antivenin have remained controversial, Meggs has proven that using pressure immobilization bandages significantly delays the toxic effects in the case of coral snake venom. Meggs's discovery is now included in the Red Cross first aid handbook.



Meggs has also studied the effects of chronic low-dose exposures to common insecticides in rats and found that the exposed rats developed obesity. Meggs's work in this area also demonstrated that the reported peak in the obesity epidemic occurred approximately four to five years after the most commonly used insecticide of this class in human habitats was

phased out. Meggs's observation has been confirmed by other investigators and support the hypothesis that environmental chemicals may play a significant role in obesity. His work also initiated the new field of obesogens, the study of environmental chemicals that disrupt the regulatory system for appetite and fat storage, suggesting new avenues for obesity research and potential new techniques to attack the ongoing obesity epidemic.

Similarly, Meggs has been a pioneer in research on other chemical sensitivities in humans, especially the irritants that affect those with asthma and other inflammatory diseases.

At present, Meggs's major research focus is on studying the disease affecting many organ systems of over 25% of the veterans who served in the 1991 Gulf War. Meggs has received a \$1.1 million dollar grant from the Dept. of Defense to study causes and treatments of what is now known as "Gulf War Illness."

Jason E. Bond, PhD

Studying Spider Species to Protect the Earth

We know to save the trees, save the whales, but...save the spiders?

Being a champion for these oft-feared arachnids is an ongoing mission for **Dr. Jason Bond** (Dept. of Biology), 2011 recipient of ECU's 5-Year Achievement Award for Excellence in Research and Creative Activity. Such advocacy is the by-product of Bond's taxonomic research describing and classifying new species of spiders and millipedes. Most famously, Bond named a spider he discovered after Stephen Colbert, resulting in Bond's appearance on that TV talk show.

"It's disturbing that we focus on conserving only the charismatic, the furry, cute, or colorful," says Bond. "However, it's often the smaller things, like spiders, that play incredibly important roles in many ecosystems."

Just how much? Bond says that spiders on average consume 100-250 kilograms of insect mass per hectare per day. When spiders disappear, watch for repercussions. "We are already playing out some of these scenarios with the loss of honey bees through colony collapse disorder," Bond says.



Next for Bond is studying the specimens of 30 distinct species of spiders preserved from a section of California prior to its over-development since the 1970s. Some of these species are now extinct, further proof of Bond's ongoing conservation concerns. For more on Bond's research, visit: http://core.ecu.edu/biol/bondja/Bond_Lab_Website/

Chris Riley-Tillman, PhD

Turning Teachers' Smiley Faces into Assessment Metrics



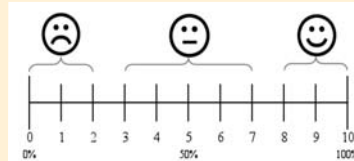
Sometimes a great idea is staring you right in the face. For **Dr. Chris Riley-Tillman** (Dept. of Psychology), a 2011 recipient of ECU's 5-Year Achievement Award for Excellence in Research and Creative Activity, that epiphany came about a decade ago when he and colleagues observed that teachers putting smiling, frowning or neutral faces next to names on attendance lists to mark behavior. Riley-Tillman and team drew on this concept to create Direct Behavior Ratings, which keeps those emoticons but

aligns them with a ten-point numerical scale (see illustration).

"No one had looked at what teachers were already doing," says Riley-Tillman. "We provided teachers with a simple system that values their opinion."

DBR asks teachers to apply the scale to three standard behaviors - Academically Engaged, Respectful, and Disruptive. Many school systems are already using DBR as is or in some modified form as a flexible, easy-to-use tool within the often complicated world of educational assessment.

"Accountability in education is here to stay," says Riley-Tillman. "We are very proud that this new class of assessment is now available." For more on Riley-Tillman's research, visit <http://www.directbehaviorratings.com>



New Coastal Water Resources Center

"The challenges are many, but there are solutions in policy, in conservation and in working together."

That's how Dr. Richard Spruill (Dept. of Geological Sciences) describes the mission ahead for ECU's recently created Coastal Water Resources Center, housed within the Institute for Coastal Science and Policy.

A hydrogeologist who has been studying eastern North Carolina's groundwater system for over a quarter-century, Spruill serves as director of the new center, which formally brings together a multi-disciplinary team of ECU faculty and staff researchers assessing coastal water resource issues.



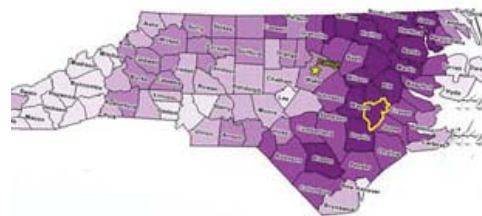
One of the most significant issues under study is the seepage of salt water into the region's groundwater supply. Increased demand for water, largely due to population growth, has led to further tapping into area wells and aquifers, thus breaching saltwater depths. Spruill says salt-removal processes and increased conservation efforts can combat this problem, but all responses require discussion among community and utility company leaders.

Spruill believes one forum to foster this discussion will be the center's inaugural symposium on water resources management, planned for fall 2011. In addition, the center is also part of ECU's initiative to align with the new "Grand Challenges" mandate that federal science agencies prioritize funding into six areas, including natural resources management. The submission of proposals for such external funding will enable the Coastal Water Resources Center to continue to expand its mission and priorities.

Regional Health and Strokes

Why do the inhabitants of NC's Lenoir County have a higher incidence of stroke when compared to other NC counties? That's a question under scrutiny by researchers, including **Dr. Doyle Cummings**, a pharmacist and professor of family medicine, and **Dr. Stephanie Jilcott**, an assistant professor of public health at ECU's Brody School of Medicine. Cummings and Jilcott are part of the team working on a \$10 million, five-year grant from the National Heart, Lung and Blood Institute of the National Institutes of Health. The award was announced in May 2010.

Jilcott describes the NC effort, a collaboration between UNC Chapel Hill, East Carolina University and Lenoir County partners, as a three-pronged approach: a genetics study a medical practice-based hypertension management study, and a community-based lifestyle intervention study, all focused on Lenoir County. The medical practice-based and community-based programs are still in their formative stages, but the ECU team, which also includes former ECU graduate student **Jared McGuirt**, has recently completed several "windshield tours" of the county's many food and physical activity locations. These windshield tours place information on the car windshields of Lenoir County residents to make them aware of an upcoming lifestyle intervention program that will begin fall 2011.



Jilcott is enthusiastic about the Lenoir County partnership, including strong support from the Lenoir County Health Alliance as well as several other community agencies. "It's a going to be a rewarding group effort," she says.

ECU Research Vessel - *The Stanley R. Riggs*



If you spot the Pirate-marked ship (pictured at left) on the waters of the Pamlico Sound or other nearby waterways, it's not on a pleasure or sightseeing cruise.

Instead, this 34' boat is the *R/V Stanley R. Riggs*, the newest member of ECU's research vessel fleet supporting the univer-

sity's ongoing work in marine and coastal studies. The vessel is named in honor of **Dr. Stanley Riggs**, professor emeritus in ECU's Dept. of Geological Sciences. "We needed a new boat of this size to continue our studies along the coastal waterways, to continue competing for federal research dollars," says **Dr. John Rummel**, director of ECU's Institute for Coastal Science and Policy. An older ECU vessel with these dimensions had been sent in for upgrades but suffered damage in the process and couldn't be used by ECU any longer. With support from ECU's Division of Research and Graduate Studies, the Institute worked with a boatbuilder to design a state-of-the-art vessel, addressing specific research needs. The *R/V Riggs* has three separate control stations, including one on deck so that ship navigation systems can be monitored while in the process of doing research work such as collecting samples. "There's really no other boat like this out there," says Rummel.

The *R/V Riggs* was christened in August 2010.

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