

FROM THE DEAN'S DESK – November 7, 2014

THE RADFORD UNIVERSITY COLLEGE OF SCIENCE AND TECHNOLOGY NEWSLETTER



An ocelot in the jungle of Peru as featured on the Radford Amazonian Research Expedition website www.radford.edu/rainforest

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BIZARRE BUG STORIES FEATURED IN MUSEUM OF THE EARTH SCIENCES LECTURE SERIES

Dr. Joe Keiper, Executive Director, Virginia Museum of Natural History, was the featured speaker in a November 4th lecture sponsored by the RU Museum of the Earth Sciences and Sigma Gamma Epsilon. The program titled, "How Did That Get in There? A Review of My Most Bizarre Entomological Consultations" featured stories of bugs found in less than desirable interactions with human hosts. Dr. Keiper is frequently contacted when someone has an insect conundrum and he shared those encounters with the assembled crowd.



Dr. Joe Keiper sharing his stories of the Black Widow spider along with other insect encounters with humans

"There are estimated to be 5-50 million species of insects on earth and only about 1.5 million of those are identified and named" stated Dr. Keiper. "We discover something new all the time." To illustrate this point, Dr. Keiper shared the contents of a simple collection of leaves from his backyard and a number of insects and larvae were found both with the naked eye and with the microscope. "Most people are uninformed about the world around them and when they do become aware, they are often very surprised and can jump to conclusions" he added.

The story of a woman who found a Black Widow spider in a package of grapes she purchased at the supermarket was an example of just what unexpected encounters can take

place. "It can be very common to find spiders in produce and while very intimidating in appearance due to their reputation as a poisonous spider, the Black Widow likely won't kill you" said Dr. Keiper. "You might feel a little sick, but it is not likely to be fatal." He added that the reputation of the Black Widow likely comes from the days when indoor plumbing was not available and there were likely many encounters with these spiders from people in compromising positions. "Some of these interactions were quite the freaky scene, I'm sure" stated Dr. Keiper.

One of the points of the lecture was that most times, infestation or bites from insects are not what they seem to be and Dr. Keiper is able to use his experience with the life cycle of these bugs to help determine what actually has happened and many times dispel the concerns raised by the interested party.

The Museum of the Earth Sciences lecture series continues on December 2 at 7pm in the Bonnie Hurlburt Auditorium with Dr. Albert Dickas, Professor Emeritus of Geology, University of Wisconsin-Superior and his program "Geociting in and around Virginia."



IOTA SIGMA PI TO CONDUCT INITIATION

Women in chemistry will be celebrated on November 9 in Cook Hall as a new class of members will be inducted into Iota Sigma Pi at 2pm in Cook Hall 107.

Iota Sigma Pi is a national honor society first established in 1902 that promotes professional development and personal growth of women in chemistry and related fields. They do this through recognition, public outreach, and the formation of supportive networks.

Diane Catley, Forensic Scientist Supervisor at Virginia Department of Forensic Science, will be the featured speaker.

RADFORD UNIVERSITY INFORMATION TECHNOLOGY MAJOR FEATURED IN RU VIDEO

Nicki Stinson is sharing her story in the latest Radford University video.

After completing her associate's degree, Nicki transferred to Radford University because of its great computer science program.

"I wanted to continue my education, and Radford made it easy for the transfer process," said Nicki.



Upon her arrival, Nicki discovered that Radford offers many unique opportunities for her to connect with her industry, such as tech talks with local companies and competitions in data security. RU is host to the region's International Collegiate Programming Contest event and offers membership in Upsilon Pi Epsilon, the international honor society for computing and information disciplines.

Nicki said she already feels equipped to tackle future ambitions as either a young professional in the technology sector or a graduate student.

"Radford has prepared me for this because they've allowed me to have the hands-on experience with my professor in the classroom," she said. "I think I'm very prepared for industry or graduate school, whichever I choose."

To learn more from Nicki, please visit:

<http://www.radford.edu/content/radfordcore/home/news/releases/2014/november/transferring-to-ru--nicki-stinson.html>

RU DEPARTMENT OF GEOSPATIAL SCIENCE AND THE GEOGRAPHY CLUB TO HOST GEOGRAPHY AWARENESS WEEK NOVEMBER 17 – 20

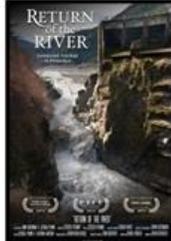
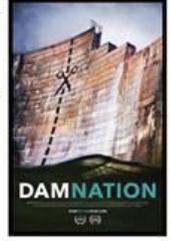
To help spread awareness of the world of geography and areas studied within Geospatial Science, the first Geography Awareness Week will be held at RU during the week of November 17-20. Events range from a book premiere and discussion to relevant movies to GIS day where members of the RU community can participate in creating a crowd sourced campus tree map. For more information, please contact Dr. Andrew Foy at afoy@radford.edu or Dr. Stockton Maxwell at rmaxwell2@radford.edu

*The Department of Geospatial Science
& Geography Club Present*



Geography Awareness Week

Schedule of Events

Monday November 17	Tuesday November 18	Wednesday November 19
<p>“Belarus in Cultural and Geopolitical Context”</p> <p>WHO: Dr. Grigory Ioffe</p> <p>WHAT: Book Premiere and Discussion</p> <p>WHEN: 4:00 pm</p> <p>WHERE: McConnell Library Main Floor (back)</p> 	<p>“The Meaning of Wild”</p> <p>WHAT: Documentary Screening!</p> <p>WHEN: 7:00 pm</p> <p>WHERE: Cook 107</p> 	<p>“GIS Day”</p> <p>WHAT: Crowdsourced Campus Tree Map</p> <p>WHEN: 10:00 am-2 :00 pm</p> <p>WHERE: Bonnie Plaza</p> 
<p>“Return of the River”</p> <p>WHAT: Documentary Screening!</p> <p>WHEN: 7:00 pm</p> <p>WHERE: Cook 107</p> 	<p>... CELEBRATE GEOGRAPHY ...</p>  <p>find us on Facebook</p> 	<p>Thursday November 20</p> <p>“DamNation”</p> <p>WHAT: Documentary Screening!</p> <p>WHEN: 7:00 pm</p> <p>WHERE: Cook 107</p> 

Contact: Dr. Foy at afoy@radford.edu or Dr. Maxwell at rmaxwell2@radford.edu for more information.

CSAT SPOTLIGHT: SETH PEERY

Seth Peery is a 2003 graduate of Radford University and a member of the College of Science and Technology Advisory Council. He majored in Computer Science and Political Science, with minors in Economics and Mathematics. During his time at RU, he was a Presidential Scholar, a Dean's Scholar, an RU Ambassador, a student admissions representative, a teaching assistant in Computer Science, a Quest Assistant, a recipient of the RU Outstanding Student Award, and a Highlander Scholar.



Seth Peery with his Highlander Spirit proudly on display

In the decade since graduation, Seth has sought to build on the strong foundation of subject matter knowledge, academic curiosity, professionalism and character that was constructed during his four years at Radford, and “pay forward” the support, enthusiasm and interest that was shown to him and his fellow Highlanders by so many of the faculty and staff of our alma mater.

Seth's first transition upon graduation was to begin graduate study at Virginia Tech. There he found a Master's degree program in the College of Architecture and Urban Studies that would allow him to put the technical competencies from Computer Science, the philosophical framework from Political Science, and the pragmatism of Economics into practice as he conducted research on the economic impact of broadband telecommunications in rural areas.

The second phase of his career began when he discovered the potential of Geographic Information Systems (GIS) to advance the understanding within his research area and solve practical problems associated with the mapping of telecommunications networks. Although not trained as a geographer, Seth worked diligently to independently build up technical competency in this area, and because of his Computer Science background, approached the technology with a focus on the server-side infrastructures that support spatial analysis.

Seth saw an unmet need for this sort of approach to geospatial computing at Virginia Tech, and worked for several years to build both a prototype implementation of the system he believed to be needed, and also the business case and funding models to allow such a system to be sustainable in the organizational context. In 2008, Seth proposed the concept to the CIO, and gained his support to create the Enterprise GIS division within the IT organization at VT.



From these origins, Seth guided the activities of the Enterprise GIS unit, expanding its client base, adding services to the unit's portfolio, and steering the transition through several technology shifts and major infrastructure upgrades. In 2012, an increased awareness by upper management that many of the barriers to the use of geospatial technologies were related to the policy context in which they are applied resulted in another transition. Seth was asked to serve as interim Director of Geospatial Information to better coordinate the diverse activities surrounding GIS and related technologies at Virginia Tech, a position he still holds at the present time, in addition to his full-time responsibilities as GIS Systems Architect.

Seth's time at RU prepared him very well for his career. In 2011, Seth remarked that "I credit my experience at Radford for developing the mindset that I could be a primary agent of change in my own fortunes. My years at RU [helped] me to learn how to learn, and learn how to live." Beyond this, however, Seth's Radford years performed another, perhaps even more important function – while at RU, Seth met the woman who would become his wife, Laura Johnson '05 (Communication Sciences and Disorders), fellow Presidential Scholar, RU Ambassador, Honors Academy member, and native Southwest Virginian. Seth and Laura were married in 2005 and now have two daughters, Ada (4 years old) and Evie (2 years old). The family resides just north of Blacksburg. Laura, a Speech-Language Pathologist, serves as an adjunct faculty member in COSD and has taught classes and supervised graduate students in the RU Speech and Hearing Clinic.



The Peery family's ties to Radford remain strong. As active alumni, they work to spread the word about RU within their community, and often return to assist in various capacities to promote the College of Science and Technology, and the institution as a whole.

FIRST WORLDS OF MEXICO LECTURE RECOUNTS THE FALL-OUT FROM FIRST CONTACT IN THE AMERICAS

When a "rag tag bunch of guys" met the mighty Aztec empire, the empire fell.

The first contact between Europeans and the Aztec empire at the turn of the 16th century was an event of global importance, said Dr. David S. Anderson, adjunct professor of anthropological sciences.

"It was an earth-shattering moment from big to little," Dr. Anderson told more than 30 students and faculty in the first of the four-part Worlds of Ancient Mexico Lecture Series Oct. 21 in Whitt Hall. "It caused drastic changes to the world – the death of millions, the disappearance of cultures and two new continents sprung up. We saw wealth forcibly extracted from the Americas drive the Renaissance and the tomato was introduced to Europe. Can you imagine Italian cuisine without tomato paste?"

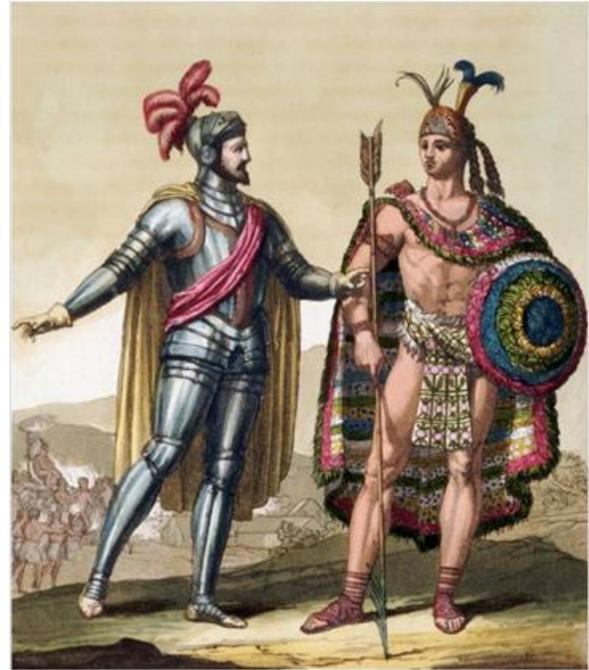


Image from "The Fall of the Aztec Empire" provided by the Department of Anthropological Studies

The agent of this cataclysmic event was Hernando Cortes, the first of the famous Spanish conquistadors. Cortes' encounter with the natives of Central America and Mexico introduced the Aztec, Incan and Mayan empires to strains of smallpox and measles that crippled them and sped their downfall.

"It is widely reported that Cortes, with his guns and horses, were able to overthrow this empire," said Dr. Anderson. "In reality, what we're looking at here is - Cortes lights a match."

Fueling the fall of the empires, that included cities larger than any known European cities at the time, was the inadvertent exposure to disease and the smoldering discontent of the empire's indigenous subjects.

After first contact, Dr. Anderson said that the waves of conquistadors that followed Cortes entered a continent whose residents had been ravaged by disease and had lost their cultural core. "We see the push toward general destruction that follows," Dr. Anderson said, in his presentation that also touched on some of the political intrigue and romantic machinations that Cortes used to make the transformational expedition.

Dr. Anderson talked of Marina, Cortes' paramour and the daughter of the chief of a native tribe, who was instrumental in Cortes' engaging the various tribes he recruited to an army that swelled to 20,000. Dr. Anderson also recounted some of Cortes' machinations to give his adventure legal and royal sanction.

An archaeologist who has worked in Mexico since 1999, Anderson recently spent a month in Central Mexico studying the Aztec codices, indigenous books pre-dating the Spanish conquest of Central America, as part of a National Endowment of Humanities grant.

The final Worlds of Ancient Mexico lecture, Past and Present: Visions of Aztlan, will be held on Wednesday, November 12 in Whit Hall 204. It is free and open to the public. For more information, contact Anderson at danderson10@radford.edu.

MUSEUM OF THE EARTH SCIENCES AND SIGMA GAMMA EPSILON TO HOST SCREENING OF “CHASING ICE” DOCUMENTARY ON NOVEMBER 11TH AND 19TH

A screening of the documentary film “Chasing Ice” will be held on November 11th and the 19th at 7:00PM, at the Bonnie Hurlburt Student Center Auditorium. This 2012 movie is about the efforts of nature photographer James Balog and his Extreme Ice Survey to publicize the effects of climate change. The event is open and free to the public.



<http://denjustpeace.org/wordpress/wp-content/uploads/Chasing-Ice.jpg>

RU CHEMISTRY STUDENTS CONNECT WITH NOBEL PRIZE WINNER AT NATIONAL MEETING

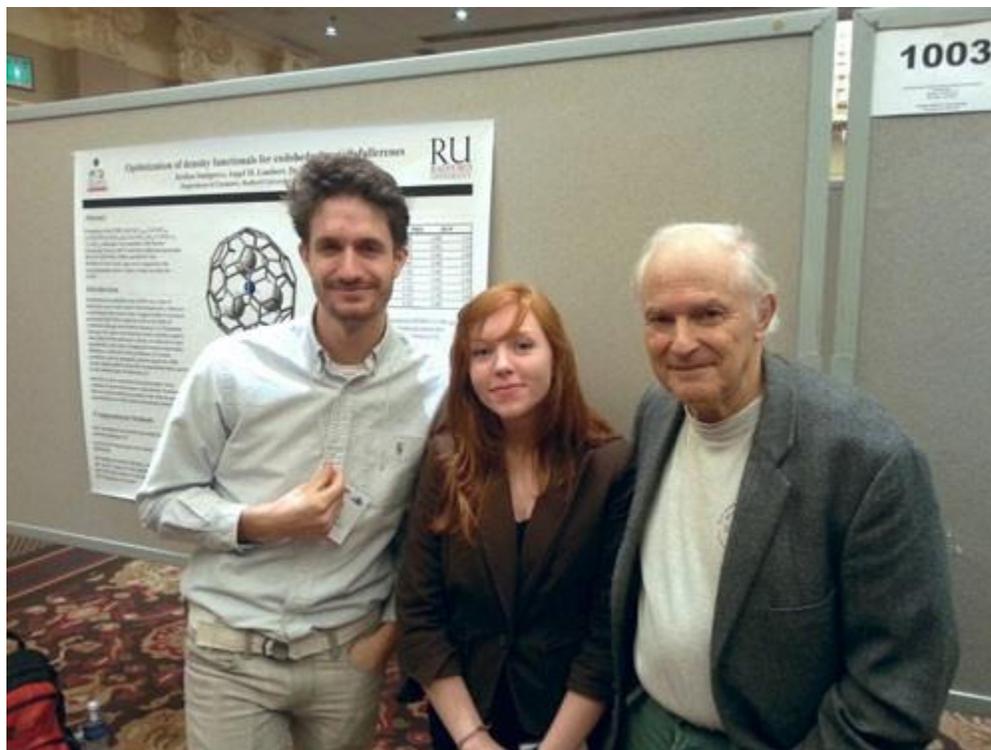
Four Radford University chemistry students, including two who are doing fullerene research, met with [Sir Harry Kroto](#), the 1996 Nobel Prize in Chemistry winner, about the hollow, multi-shaped molecules composed of carbon.

Dr. Kroto won the Nobel Prize for his discovery of fullerenes and RU's Angel Lambert, a sophomore from Moneta, and Jordan Snelgrove, a senior from Radford, are doing research in the molecules whose discovery by Kroto has opened new applications in nanoscience and nanotechnology.

Angel and Jordan were joined by fellow chemistry majors Charlie Folsom, a junior from Oak Hill, and Hannah Gullickson, a junior from Evans, Georgia, at the [Southeast Regional Meeting of the American Chemical Society](#) (SERMACS) in Nashville Oct. 16-19. The group heard Kroto deliver the plenary lecture, and then Lambert and Snelgrove presented their research work on fullerenes to him as he toured the poster presentation sessions.

"Dr. Kroto seemed excited about their research and shared some ideas for next steps with each student," said Assistant Professor of Chemistry Tim Fuhrer.

Assistant Professor of Chemistry Kim Lane also accompanied Fuhrer and the students to the event that featured several sessions of scholarly talks and the undergraduate poster session at which all four students presented.



RU chemistry majors Angel Lambert and Jordan Snelgrove with Sir Harry Kroto, 1996 Nobel Prize winner in chemistry.

RADFORD AMAZONIAN RESEARCH EXPEDITION WEBSITE LIVE, TEAM FORMING



Students interesting in exploring parts of Peru have the opportunity to apply for a Maymester 2015 opportunity.

A new website that will both promote and chronicle the Radford Amazonian Research Expedition went live on October 30 and contains important information on applying for the trip. Interested student can visit www.radford.edu/rainforest for more information.



The Research
The Radford Amazonian Research Expedition (RARE) will provide undergraduate students with a unique opportunity to conduct original biological research in a primary Amazonian rainforest ecosystem. [Learn more.](#)



About Las Piedras
The Las Piedras Biodiversity Station is situated within 30,000+ acres of pristine rainforest located along the Las Piedras River, encompassing a wide variety of microbiomes and habitats. [Learn more.](#)



Multimedia
We will be posting several photo galleries and video clips from the 2015 trip to the Peruvian Jungle. First, we'll begin with a photo gallery of Dr. Jason Davis scouting out the area in preparation for the upcoming trip. [Learn more.](#)

Led by Assistant Professors of Biology Jason Davis and Joy Caughron, the first Radford Amazonian Research Expedition (RARE) began assembling its 12-person team with an information session Oct. 21 in Reed Hall. More than 30 students expressed interest.

The expedition's prospects were exciting to Sarah Hebert, a sophomore biology major from Powhatan. She wants to focus her individual research effort on the water environment and the Amazonian frogs and salamanders. Her thesis is that amphibians are often early indicators of human-caused environmental change. As the expedition assesses the effects of that change on the vast wilderness, she wants in.

"It is an opportunity to do field research and it will be my first opportunity. I am excited because of the doors it might open for me in the field and as a career opportunity," Sarah said.

Dr. Caughron said the expedition will be interdisciplinary and ideally include students from different majors. As examples of RARE's interdisciplinary applications, she cited the potential to do research about culture and language for a foreign language or sociology major, the chance to assess native plants and healing regimens and jungle health for nursing majors and learning volunteer ecotourism to a recreation, parks and tourism major.





The team will leave May 17 and return June 7, 2015, and spend their time in the Madre de Dios River region that lies at the headwaters of the Amazon River at the Las Piedras Biodiversity Research Station. They will be under the guidance of [Tamandua Expeditions](#), which focuses on biodiversity research, conservation and responsible volunteer/adventure travel.

The team will travel by jungle road and river to reach its location deep in the lowland tropical rainforest at the base of the Andean range, one of the most biologically diverse regions on earth. They will also visit and volunteer at the Tambopata Animal Rehabilitation Station and have been challenged to a friendly soccer match by residents of the nearby town of Lucerna, according to Dr. Davis.

At the session, Dr. Davis reviewed the mechanics of the expedition – research plans, pre-trip preparations, cost and requirements and funding options. He fielded questions about water quality for showers, bug bites, emergency protocols and the types of work that the team will do.

Among the team's research objectives are studies of vertebrates, invertebrates, botanical, microbial and human health in a rain forest environment that covers 2,700 acres of diverse forest habitat. The team will be equipped with field and laboratory equipment, such as wireless microscope cameras, solar power generators, sat-fi Internet connections, genetic sampling and preservation systems, infra-red trail cameras, GoPro cameras, forestry, soil and water testing gear and an abundance of curiosity.

"This is a chance to put your name on new discoveries in science in a really, really remote area that is changing rapidly," Dr. Davis said.

To apply for BIO 481: Special Topics in Biology: Radford Amazonian Research Expedition, visit the [International Education Center website](#). Interested students should select Peru - Biology under Faculty-led programs (Summer 2015). The course will have a one-credit on-campus spring component and the study abroad component will carry two biology elective credits.

For more information, contact Davis at jdavis319@radford.edu or 831-5353.



CSAT CAREER CONNECTIONS



Students and business representatives interact during the first RU STEM career fair

The RU Career Center was host to the first annual STEM career fair on Wednesday, November 5, 2014 from 11 am until 2pm in the Bonnie Hurlburt Student Center rooms 249 and 250. Eighty-five students from the College of Science and Technology along with others from across the RU campus participated with representatives from *eIntern* based in Fairfax, *Modea* located in Blacksburg, *Radford City Schools*, *Tech Dynamism* from Charlottesville, *TechLab, Inc.* from Blacksburg and Radford, *TEDS, Inc.* from Atkins, *CGI* from Lebanon, VA and

Eastman from Kingsport Tennessee. “We are always happy if we have a 10 to 1 student to business ratio” said Career Center Director Ellen Taylor. “This was a success and we can look to make it even more successful next year.”

Career and internship development is an ongoing process and students have a weekly opportunity to prepare for interviews and to seek new opportunities by meeting with Dr. John Liptak from the RU Career Center as he conducts “in college” office hours weekly in Stuart Hall lounge on Wednesdays from 8am until 5pm and on Thursdays from 10am until 3pm in Davis Hall. Students can make an appointment by emailing Dr. Liptak at jlptak@radford.edu or by dropping by during his posted time periods.



AGILE PROJECT MANAGEMENT PRESENTED FOR I.T. STUDENTS



Deanna Murphy leading an exercise with RU I.T. students

New ideas in development of software products were presented by members of the Rackspace company who are also RU alumni on Thursday, November 06, 2014 in the ARTIS Lab. Bretny Khamphavong '11 and Deanna Murphy '05 presented their involvement with 'Agile Project Management' used in development project at Rackspace. Bretny is a "Scrum Master" who works with software development teams to help facilitate their efforts as well as remove any help

impediments that may be preventing forward progress with the project. Each day, every project team of software developers will conduct a meeting to help determine their progress and if anything is preventing them from moving along at a steady pace. This feedback helps advance the efforts of the team, but it is also used to provide information to the product owner or client.

Deanna serves as a "Partner Manager" working with clients of Rackspace to help communicate the needs of the product as well as the actions of the team as the project is ongoing. Together Bretny and Deanna provided a demonstration of their efforts with the students from several I.T. classes and even included a "scrum meeting" exercise.

The goal of the presentation was to help students understand alternative management theories for their software project. "This helps to underscore what I have been telling my students" stated Dr. Tracy Lewis.

The event was coordinated by Dr. Hui Wang for her class and was opened to all interested I.T. majors.'



Deanna Murphy, Dr. Hui Wang, Dr. Tracy Lewis (participating via her telepresence robot) and Bretny Khamphavong following the presentation held in the ARTIS Lab