

## From the Dean's Desk - - March 28, 2014



From left, Rhett Herman, Jordan Eagle, Jessi Basham, Taylor Hardwick, Sarah House, Corey Roadcap, Melissa Brett, Sarah Montgomery, Andrew Cohen, Mythianne Shelton, and Jesse Dodson.

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## ALASKA: ADVENTURE ON TOP OF THE WORLD

From February 28 through March 16, Dr. Rhett Herman led a team of students and faculty to Barrow, Alaska to conduct research on Arctic polar ice. As one of a series of biennial trips to the area over the past dozen years, the expedition was designed to accomplish multiple goals in addition to the primary objective of investigating a possible correlation between ice temperature and thickness.

The trip was multi-faceted and included scientific research, educational and cultural outreach, and mass communication. The educational and cultural outreach was certainly a two-way street as Radford University students and faculty had the opportunity to experience the regional culture in Northern Alaska through the Inupiat Cultural Heritage Center located in Barrow as well as such adventures as riding with dog sled racers, sampling local meals made from whales and learning local dance customs from the citizens of the area.

Much of this experience was captured in the images and videos produced by Department of Web Services and Interactive Media staffer Jaslyn Gilbert and by the participants themselves. The adventures were then shared with thousands of interested individuals across Virginia and beyond through traditional media such as television and newspapers but also through interactive communication via the official website [www.radford.edu/alaska](http://www.radford.edu/alaska) and the College of Science and Technology Facebook page [www.facebook.com/radforduniversitycsat](https://www.facebook.com/radforduniversitycsat). These modern forms of social media garnered a great following among thousands of Radford University community members and the general public.



Jordan Eagle and Dr. Rhett Herman take a ride in a sled dog rig.



Taylor Hardwick, Jordan Eagle and Jesse Dodson try some of the local cuisine in Barrow, Alaska

The return trip and some reflection on the result are chronicled by University Relations writer Don Bowman:

## **RICHER IN DATA AND EXPERIENCE, RU POLAR SEA ICE TEAM RETURNS**

A glow from a potential 'Eureka' moment and tired, but with a trove of data and a raft of experience earned in the Arctic's harsh, demanding environment, the entire polar ice expedition is back at Radford University.

The 18-person team, led by Physics Professor Rhett Herman, was measuring ice depth and surface ice temperature on the Chukchi Sea near Barrow, Alaska since Feb. 28.

Herman described the 'Eureka' moment in the expedition's crowded quarters on Wednesday, March 12.

"We were all working at the time. I just happened to notice what Andrew had done and everything clicked. That's when I got the others to gather a bit and take a look."

He and the team were processing part of the day's data from the ice floes a quarter mile from their base in the former Naval Arctic Research Laboratory. Andrew Cohen, a sophomore physics major from Newport News, Va., asked Herman to look at the results of his particular analysis.

"It was late and my eyes were tired, but there it was - a picture showing a trend line of thermal data that corresponded to ice depth we had measured. It was a picture of ice surface temperature that showed that thick ice was cold and thin ice was warm," said Herman.



**Sarah House and Jesse Dodson work to drill a hole in the ice for measurement as they are supervised by Dr. Rhett Herman**



**Andrew Cohen shares some of the data with local residents in Barrow, Alaska**

That potential correlation and a protocol to accumulate data to establish it were key objectives of the expedition that is part of Physics 450—Arctic Geophysics, a physics class in the College of Science and Technology.

"It was pretty awesome. We went there to find a correlation and we saw it," said Cohen, who battled flight delays in Newark, N.J., and car problems before finally making it back to campus somewhat belatedly. He called the trip his introduction to fieldwork and said it confirmed his desire to continue on toward becoming an experimental physicist.

"One of the things you always hope is that a class like this will go smoothly," said Herman. "Well, it didn't. The team faced problems with equipment, ice depth and the cold. They had a lot to overcome and they did it in the best type of learning environment possible, the real world - where things don't go smoothly - not a lab setting where things can be controlled."

The members of the team, who worked on the ice for week-long stints in temperatures as low as 20 below with even colder wind chill temperatures, included RU undergraduate physics, geology and computer science students and faculty as well as students and faculty from the Southwest Virginia Governor's School of Math, Science and Technology (SWVGS.) The team also included two student teachers from RU's School of Teacher

Education and Leadership, led by Instructor of Science Education Mythianne Shelton from the physics department. The student teachers used video conferencing technology to provide live science lessons to K-12 classrooms in Southwest Virginia, North Carolina and Maryland on the research and the challenge of science. They also shared the unique experiential learning opportunity in the Arctic with two physical science classes, populated by future teachers; the Roanoke and New River Valleys through live interviews on local television news broadcasts by WSLS and WDBJ and a video conference briefing with President Penelope W. Kyle.

"It is hard to work in that environment," said Cohen. "The equipment had issues with the cold and everything we carried felt heavier. Up there it felt like you had been out four or five hours, when we were out only two."

Upon his return to Radford, Corey Roadcap, a senior physics and computer science major from New Market, Va., said, "It's funny to think that the temperature here is 100 degrees warmer than what I dealt with last week. That alone makes it a little easier to wake up in the mornings. I'll catch up on sleep eventually."



**Mythianne Shelton with Jesse Dodson and Jordan Eagle as they video chat with RU President Penelope Kyle**

Cohen, also looking ahead, said, "I am going to have to somewhat get focused again. I have a lot of classes that I need to direct my attention to now."

Members of the class will detail both the experience and its scientific aspects at the 2014 Student Engagement Forum April 22 – 24, the 23rd annual convocation of RU student/faculty research collaboration. Seven arctic geophysics teams and two education leadership teams will present various aspects of the class' research into the basic characteristics, structure and dynamics of polar sea ice. Herman added that team members will also collaborate through the next six months to prepare a presentation for the 2014 Fall American Geophysical Union Meeting, December 15-19, in San Francisco. – *Story by Don Bowman*



## **RU TEAM PRESENTS RESEARCH AT PRESTIGIOUS INTERNATIONAL FORENSIC SCIENCE MEETING**

Ben Thompson, a senior from Roanoke majoring in anthropological sciences, presented a research project co-authored with Eminent Professor of Anthropology Donna Boyd at the American Academy of Forensic Sciences (AAFS) Annual Scientific Meeting in Seattle, Wash., Feb. 17-22.

Titled "A Comparison of the Metric and Non-metric Techniques Used in the Classification of Hispanic Crania," the presentation addressed a topic of urgency to the forensic community and beyond.

"Thousands of families need to know what happened to their loved ones," said Boyd, co-director of the Radford University Forensic Science Institute (RUFISI).

Unlike racial crania which have marked physical differences for which forensic anthropologists have good reference data, Hispanic crania reflect a language group. The need for reference data to mark and identify them is pressing, according to Boyd, given the tragic endings of undocumented aliens whose remains are often found in the deserts along the United States-Mexico border.

Thompson and Boyd's research was presented Thursday and on Friday, the AAFS, an 6,600-member organization that includes physicians, attorneys, dentists, toxicologists, physical anthropologists, document examiners, psychiatrists, physicists, engineers, criminalists, educators and digital evidence experts from the U.S., Canada and 66 other countries worldwide, featured a symposium devoted to the issue.



**Ben Thompson and Dr. Donna Boyd**

For the study, Boyd and Thompson independently used metric and non-metric techniques in a blind study of 50 assorted skulls from the collection of the University of Tennessee to evaluate the standards currently used by the forensic science community to help identify skulls. Both found that non-metric analysis, based on experience and intuition, was more accurate than the strictly metric approach of 24 standard measurements in correctly identifying the Hispanic crania from the sample set they analyzed.

Thompson, who is the first RUFISI intern and aspires to graduate study in forensic anthropology, called the presentation the peak of a rich Radford University undergraduate experience.

"I have had a lot of valuable hands-on opportunities," he said. "I have made a poster presentation to a prestigious professional association, done original collaborative research, worked in the medical examiner's office, been a teaching assistant, tutored and supervised lab hours."

As a poster presenter at the annual scientific gathering of the international organization that provides leadership to advance science and its application to the legal system, Thompson had to articulate and defend the project and methodology before graduate students, professionals and AAFS Fellows during a three-hour period in the meeting's physical anthropology research section.

"Ben was an active participant in science, a dynamic process that continually updates itself, is exciting and living" said Boyd. "Science is a creative process that challenges us to face problems that are exposed and find ways around them."

As a high school senior who knew he wanted to be a forensic scientist, Thompson emailed Boyd with a simple question: "Why should I come to RU?"

Now, as a senior looking excitedly ahead, he reflected on what he has found, saying, "the department has been fully invested in my work and has shown great faith in me." - *Story by Don Bowman*

### **FACULTY AND STUDENTS PLANT 2000 TREES ON SPRING BREAK TRIP**

RU faculty members Rick Roth, Theresa Burriss, Matthew Close and Christine Small led a group of 15 students to Breaks Interstate Park where they worked with the Appalachian Regional Reforestation Initiative (ARRI) of the Office of Surface Mining Reclamation and Enforcement and the nonprofit group, Green Forests Work (GFW). The group planted more than 2,000 trees on a former surface mine site in Pike County, Ky.



**The RU Tree Planting Team**

"The ARRI and GFW have as a goal to bring back forests with native tree species on these former mine sites," Roth explained. "It's expensive and so they rely heavily on volunteer labor. Students also learned about surface mining, ecology and Appalachian communities while doing this service project.

The weather was also a bit of a factor for participants as temperatures ranged from the 70s to the 30s during the three day trip and snow was present just prior to the return to Radford.

"Students got to spend one day hiking pristine, un-mined lands in Breaks Interstate Park in VA where we lodged, one day planting on a former Mountaintop Removal Site in freezing rain and 50mph wind gusts, and the final day visiting the Powell River Project near Wise, VA which has pioneered ways that we reclaim previously mined lands to restore them to forest and farmland" stated Dr. Matt Close.

Student participants were Caroline Leggett, Victoria Curtis, Taylor LaPrade, Langley Looney, Marcia Stone, Will Dowd, Justin Nixon, Zach Bridges, Nathan Shafferman, Maddie Ford, Brooke Shelton, Andrew Witt, Trenton Miller, Patrick Donlay. The students / faculty represented the Departments of Biology, Chemistry, Appalachian Studies, Geospatial Science, Recreation Parks & Tourism, and Management.

## **SUPERMACC TOURNAMENT HELD AT RADFORD UNIVERSITY ON MARCH 24**

On Monday, March 24, the College of Science and Technology and Radford High School was host to the semi-final and the final rounds of the SuperMACC high school academic tournament in the College of Business and Economics. Close to 100 academically gifted high school students from across Southwestern Virginia competed in areas of Social Studies, Mathematics, Science and English.

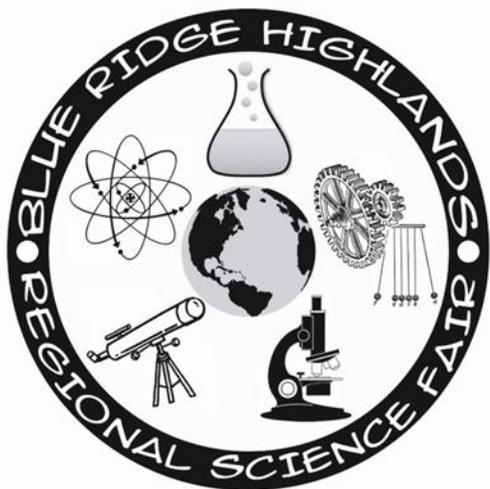
Many CSAT faculty and staff as well as other members of the Radford University community volunteered their time and expertise to help judge and facilitate the competition. CSAT STEM Club members served as time-keepers and score-keepers during the tournament.

This is the fifth year that the College of Science and Technology and Radford High School have hosted the SuperMACC competition on the RU campus.



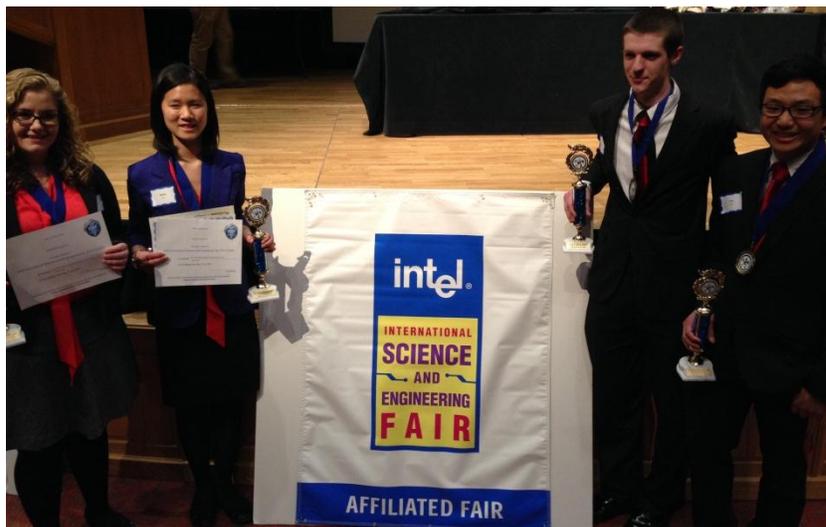
Dean Orion Rogers welcomes the hundreds of SuperMACC competitors and their guests.

## **BLUE RIDGE HIGHLANDS REGIONAL SCIENCE FAIR HELD AT RADFORD UNIVERSITY**



The College of Science and Technology and Department of Chemistry were hosts for the 23rd annual Blue Ridge Highlands Regional Science Fair held March 8-9 in the Peters Hall gymnasium. This was the fourth consecutive year of this collaboration between RU and the Science Fair with many faculty, student and staff members of the College of Science and Technology serving as volunteers. Chemistry professors Dr. Christine Hermann and Dr. Kimberly Lane were co-directors for the event.

There were so many outstanding entries, judges had a challenging time in determining prize winners, but eventually settled on two Grand Award Winning Teams: **Jordan Kuhn and Eric Chang** from the Southwest Virginia Governor's School for "Designing, Prototyping, and Testing Agricultural Drones" and **Meredith Dove and Keena Shang** from Blacksburg High School for "Crystal Formation on Collagenous Gelatins: Effect of Carboxylation and pH on Rates and Polymorph of Calcium Carbonates." These students will be accompanied by Dr. Kimberly Lane to California in May to compete in the Intel International Science and Engineering Fair in Los Angeles.



**Grand Award Winners Meredith Dove, Keena Shang, Jordan Kuhn, and Eric Chang**

The Blue Ridge Highlands Regional Science Fair is open to students from the counties of Bland, Buchanan, Carroll, Dickenson, Giles, Grayson, Lee, Montgomery, Pulaski, Russell, Scott, Smyth, Tazewell, Washington, Wise and Wythe and the cities of Bristol, Galax and Norton. Students from the Southwest Virginia Governor's School in Pulaski also participate.

The goal of the science fair is to nurture an interest in the sciences, for students of all ages. Through poster displays and oral presentations, young scientists present the results of their hard work in the fields of animal science, behavioral and social science, biochemistry and chemistry, cell and molecular biology, computer science, earth and planetary science, environmental management and science, engineering, mathematics, medicine and health, microbiology, physics and astronomy, and plant science. This stimulates an active interest in science and engineering in young students, provides an unparalleled experience in research and presentations, and exposes the public to the hard work these students are performing.

Students in grades six through eight competed in the junior division, and students in grades nine through 12 competed in the senior division. 83 students with 50 projects participated in the Fair.

To learn more, please visit the Blue Ridge Regional Science Fair website at <http://sciencefair.asp.radford.edu/>

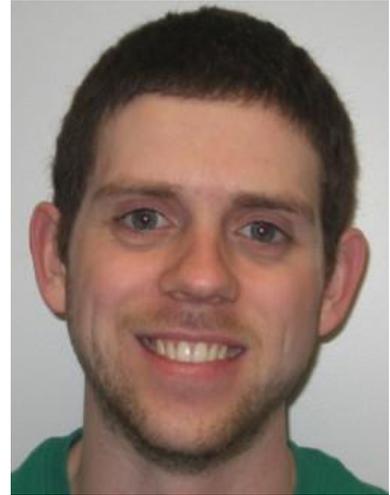
## RU COMPUTER SCIENCE MAJOR EARNS TOP PRIZES AT CYBER ACES COMPETITION

Lloyd Jones, a senior computer science major from Wise, took third place at the Virginia State Championship of the Cyber Aces competition March 2.

Jones won a trophy and a \$2,000 prize for finishing third and won another trophy for being the first to crack the contest's second level of challenges. Jones was one of the top 60 competitors representing Virginia-based security professionals, graduate, undergraduate and high school students to advance from an online qualifier course to the championship event held at the Virginia Tech Research Center in Arlington.

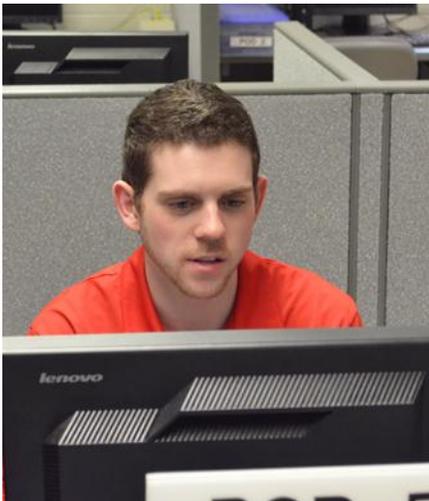
The four-hour long competition offered a variety of challenges, from .PCAP and log analysis to Metasploit exploitation and steganography in an ethical hacking and Linux skills competition using the SANS NetWars framework.

"I was blown away by the honor and the experience," he said. "It was intense to compete against some very talented people."



Cyber Aces Championships are a combination of competition, celebration, networking and learning opportunity. Jones also joined the competitors for an ethical hacking panel discussion and heard industry and technical presentations by security professionals from the FBI and Homeland Security.

"The success I have enjoyed has really motivated me to take my education further to the graduate level and go as far as I can in this field," he said.



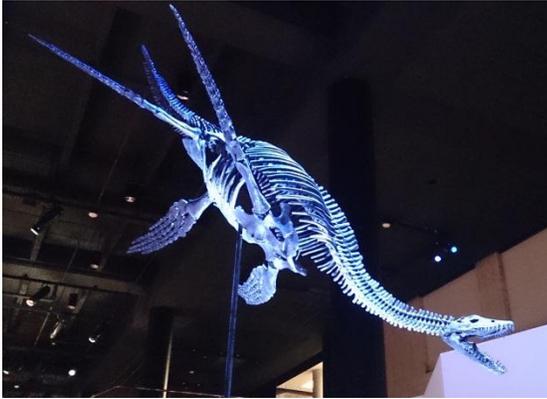
This past summer, Jones won a \$1,000 award for successfully capturing the flag at the Eastern Regional Cyber Camp, hosted by the United States Cyber Challenge (USCC), at the Hotel Roanoke and Conference Center in Roanoke.

Jones and his four teammates from across the country won the 'Capture the Flag' competition by penetrating and exploring a system set up by industry security professionals.

"Along with the great opportunities to learn and practice I have gotten at RU, this is a great morale boost," he said. "It gives me confidence that I can really show that I have the experience in this exciting field." – *Story by Don Bowman*

## MUSEUM OF THE EARTH SCIENCES LECTURE – APRIL 1

Tuesday evening, April 1st at 7:00 p.m. in the Hurlburt Auditorium is our final Museum of the Earth Sciences public lecture for this semester.



"Growing Pains: A paleontologist's journey to understanding plesiosaur development and growth"

Christina Byrd, Paleontology Technician, Virginia Museum of Natural History

All MES Public Lectures are free and open to the university community and to the general public.

Plesiosaur image from <http://en.wikipedia.org/wiki/Plesiosaurus>

## RU CYBER DEFENSE CLUB LECTURE "HOW SECURE IS YOUR SMARTPHONE?"

Brad Bowers, Information Security Systems Manager for the Federal Reserve, presented a program detailing the challenges of securing data on mobile devices on Friday, March 21 in Heth Hall. His message was, in part, to inform the attendees about the risks present with mobile device use through third party software and travel to foreign countries, but also to encourage students to consider a career in cyber defense as it is a growing field with much demand. Students, faculty and staff that attended were quizzed as to the safety of their personal practices with such devices and their understanding of both the risks and security measures to counter those risks. This event was sponsored by the RU Cyber Defense Club.



RU Cyber Defense Club President Lloyd Jones and Brad Bowers

**DR. STOCKTON MAXWELL OF THE RU DEPARTMENT OF GEOSPATIAL SCIENCE HAS A NEW PAPER PUBLISHED IN THE ECOLOGICAL SOCIETY OF AMERICA'S JOURNAL ECOSPHERE.**



Dr. Stockton Maxwell has been using tree-ring analysis to determine some of the conditions of areas prior to their being developed by man. Some of his findings were recently included in his paper entitled *Landscape-scale modeling of reference period forest conditions and fire behavior on heavily logged lands*.

"My forest reconstruction work in Lake Tahoe began as a postdoctoral project at Penn State and continues through my time at RU" Dr. Maxwell recalls. "The main idea behind the project is to provide the US Forest Service a scientifically-based estimate of past forest conditions including species composition, forest density, and fire behavior. Then, forest managers can use our results to guide current management activities and move the forest ecosystem towards conditions that are more resilient to changes in climate and fire disturbance."

He states about the portion of his research used for this paper "In this project, we reconstructed forest conditions prior to European-American settlement in the Lake Tahoe Basin, CA using tree-ring analysis for hundreds of forest plots. Then, we used predictive vegetation mapping methods to distribute these forest conditions across the landscape where similar site conditions occurred. Although our approach was developed for the Lake Tahoe, it could be applied to a wide range of forest landscapes to identify pre-settlement forest conditions."

**RU STUDENTS AND FACULTY TO ATEND GEOLOGICAL SOCIETY OF AMERICA CONFERENCE**

RU students and faculty will be attending the Southeast Section of the Geological Society of America conference on April 10 and 11 in Blacksburg, VA. Eleven Radford University students, Nick Aitcheson, Raymundo Balderas, Melissa Brett, Brian Havens, Emily Luketic, Kelsey McGee, Sarah Montgomery, George Ritter, Tess Rogers, Matt Sublett, and William Wilson are presenting or co-authoring talks or poster sessions.



## DEPARTMENT OF INFORMATION TECHNOLOGY CONDUCTS CONTESTS

On March 21 and 22, the Department of Information Technology along with Rackspace and the College of Science and Technology hosted multiple contests at RU.

On Friday, a game design competition was held during the afternoon for regional high school students. The winners were all students at the Southwest Virginia Governor's School.

1<sup>st</sup> Place- Team Radlaski: Cole Schafer, Grey Quesenberry, and Nathan Sexton

2<sup>nd</sup> Place - Team America: Jordan Kuhn, Jacob Scott, and Brady Tickle

3<sup>rd</sup> Place – Team Giles: Zachary Burch, Jacob Stubbs, Ronald Salerno, and Dallas McKinney

All three teams were coached by Rick Fisher



Gaming Competition Participants

Programming competitions were also conducted on Saturday for local programmers, high school students, and Community College students.

### Local Programming Competition

1<sup>st</sup> Place - Matt Seiler from Radford University

2<sup>nd</sup> Place - Nathan Norman from Radford University

3<sup>rd</sup> Place - Chris Mays from Radford University

### High School Programming Competition

1<sup>st</sup> Place - Logic Error from Southwest Virginia Governor's School: Jordan Kuhn and Zachary Burch. Coached by Rick Fisher

## Community College Programming Competition

**1<sup>st</sup> Place** – Team 73: Rodrigo Moran and Bryan Taylor from Blue Ridge Community College coached by John Maxwell

**2<sup>nd</sup> Place** - Team Spanish Inquisition: Gannon Combs, Matthew Campbell, and James Beamer from New River Community College coached by Rukmini Sriranganathan

**3<sup>rd</sup> Place** – Team 42: Walker Sensabaugh and Jamie Tudor from Blue Ridge Community College coached by John Maxwell



**Saturday Programming Competition Participants**

In parallel with the gaming and programming contests during the weekend, RU also hosted its first cyber defense capture the flag contest. Students from 31 high school and 6 community college participated in the contest. The event was a “virtual” activity as the participants did not have to travel to campus to participate in the competition and the managers and developers of the contest were able to monitor progress across campus via laptop computers.

Seven RU Students were instrumental in helping develop the contest: Brock Shelton, Doug Anderson, Chris Huntington, Robert Russ, Jonny Pine, Justin Arnold and Chris Burnett.

## Cyber Defense Capture The Flag Competition

**1<sup>st</sup> Place (\$500 scholarship)** - Jeremy Stalcup, Alex Johnson, Katie McInerney, Paul Hughes, and Taylor Henderson from Stone Bridge High School, Ashburn (Loudoun County, VA) coached by Douglas Poland.

**2<sup>nd</sup> Place** - Mariah Jensen-Wachspress, Paige Bellamy, Ruth Clem, Aaron White, Brenden Fulton, and Robert Rizzo from Shenandoah Valley Governor's School coached by John York.

**3<sup>rd</sup> Place** -Robert Harvill, Wesley Kessler, Rodrigo Moran, Walker Sensabaugh, Bryan Taylor, Jamie Tudor from Blue Ridge Community College coached by John Maxfield.

## STUDENT AND PROFESSOR ATTEND CONFERENCE OVER SPRING BREAK



Daniel Metz and Dr. Bob Sheehy attended the Southeastern Ecology and Evolution Conference (SEEC) over spring break. Georgia Southern University, in Statesboro Georgia, hosted the conference where Daniel presented their research in a poster presentation.

His poster title was “Identification and differentiation of species in the genus *Echinostoma* using simple molecular tools.”

- Story by Karen Powers

## STUDENTS AND FACULTY PRESENT RESEARCH AT STATE MOSQUITO MEETING

Dr. Tiffany Carpanetti and Dr. Justin Anderson travelled with four students to the Virginia Mosquito Control Association’s annual meeting in Virginia Beach in February to present the results of their research.

The titles of the student research talks were:

- Nikki Holland: “Expression of pokeweed antiviral protein in insect cells”
- Nate Frisch & James Walker: “Pseudomonas bacteria can kill La Crosse virus and mosquito larvae”
- James Cardenas: “Effect of varying water quality on *Aedes albopictus* life history traits”

Justin Anderson also gave a talk entitled “Spitting, coughing, pooping, worms coming out of my mouth” (A review of the way insect-borne pathogens are transmitted). – Story by Karen Powers



Nikki Holland



Nate Frisch and James Walker



James Cardenas

## **RADFORD UNIVERSITY TO HOST SUMMER BRIDGE PROGRAM JULY 13-18**

The Radford University College of Science and Technology Summer Bridge program is a week-long residential experience for rising sophomore, junior, and senior high school girls interested in science, technology, and mathematics. The 2014 edition of the program will take place from Sunday, July 13 – Friday, July 18, 2014.

Thanks to many generous donors and sponsors of the program, full scholarships will be awarded competitively to participants. The scholarships cover all costs of the program.



Through classroom lessons, laboratory experiments, and field experiences, Radford University professors will draw students in to the wonders of:

Space Exploration—create a Martian rover

Geology—study the making of mountains

Forensic Science— combat “hackers” and analyze “crime scenes”

Genes, Molecules and Medicine - learn about the biology and chemistry applications in medicine

Environmental Science - studying habitats through examination of the environment

Participants in the program have stated that the interaction with Radford University faculty and staff has been an exceptional experience as has the residential programming. For many, it will be their introduction to a college atmosphere and campus living environment. An experienced staff of Radford University students will join the faculty and professional staff to provide a world-class program for those who attend.

Please help us connect young women interested in the sciences with this outstanding opportunity and pass this message along to those who might be interested. Thanks to support from our sponsors, we will be able to offer the program to even more budding scientists moving from 73 participants to 96.

Applications are now being accepted. To learn more, please visit:  
<http://www.radford.edu/content/csat/home/summer-bridge.html>

## COLLEGE TO HOST SCIENCE EXPLORATION DAY ON SATURDAY, MARCH 29, 2014

The 2014 Science Exploration Day at Radford University, hosted by the College of Science and Technology, is open to all students in grades 6, 7, and 8. The event is designed to give students an opportunity to learn more about different areas within the sciences led by Radford University faculty, staff and students. Topics to be covered include robotics, computer animations, anthropology, cryptology and more.

NOTE: Participants must bring their packed lunch for this event, as well as paper and writing utensil.

### Schedule

Check in: 8:45 – 9:30 a.m. (McGuffey Hall, room 203)

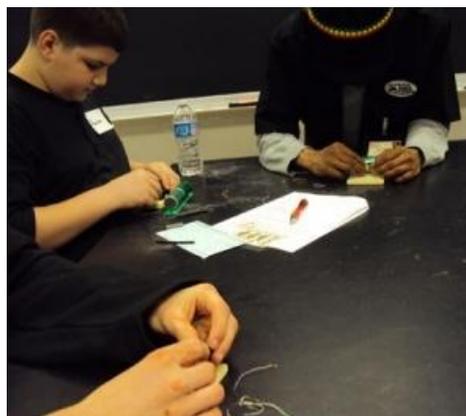
Welcome: 9:30 a.m. (McGuffey Hall, room 203)

Morning class sessions: 9:45 a.m. – noon

Lunch (students bring packed lunch): Noon – 12:40 p.m.

Afternoon class sessions: 12:40 p.m. – 2: 40 p.m.

Closing session: 2:45 – 3 p.m. (McGuffey Hall, room 203)



During the registration process, participants will select their first choice from the morning and afternoon class, or choose one of the “all-day” classes.

for more information, please visit: <http://www.radford.edu/content/csat/home/science-day.html>

## RADFORD UNIVERSITY TO HOST CAMP INVENTION JUNE 23-27



Photo by Lora Gordon

For five years, Radford University’s College of Science and Technology has offered the nationally-acclaimed Camp Invention program to children entering grades one through six in Reed and Curie Halls each June. The 2014 edition of the program is scheduled for June 23-27.

Early-bird registration is now underway. Register by March 28 and save \$25.

For more information, please visit: <http://inventnow-web.ungerboeck.com/programsearch/moreinfo.aspx?event=9762>