

From the Dean's Desk - - January 31, 2014



Good day and Happy New Year to you. As we begin the spring 2014 semester, we have an opportunity to catch up with some of the activity that took place over the winter break and to preview some of the upcoming events for the next few months.

In this edition:

PAGE 2 - COLLEGE OF SCIENCE AND TECHNOLOGY AWARDED \$105,500 JESSIE BALL DUPONT GRANT

PAGE 3 - BIOLOGY FACULTY AND STUDENTS PRESENT RESEARCH AT NATIONAL CONFERENCE

PAGE 5 - CSAT SPOTLIGHT: DR. TIFFANY CARPENETTI AND THE EFFECTS OF WATER QUALITY ON AEDES ALBOPICTUS

PAGE 7 - BIOLOGY STUDENT RECEIVES SCHOLARSHIP TO ASSIST WITH HIS PURSUIT OF A MEDICAL DEGREE

PAGE 8 - RADFORD UNIVERSITY PLANETARIUM RECOGNIZED BY NASA FOR OUTREACH EFFORTS

PAGE 8 - GEOSPATIAL SCIENCE PROFESSOR LAUNCHES NEW WEBSITE AND SOCIAL MEDIA

PAGE 9 - COLLEGE OF SCIENCE AND TECHNOLOGY TO HOST OPEN HOUSE FOR PROSPECTIVE RU STUDENTS ON FEBRUARY 22

PAGE 9 - MUSEUM OF THE EARTH SCIENCES LECTURE

PAGE 9 - RADFORD UNIVERSITY TO SERVE AS REGIONAL HOST SITE FOR AMERICAN MATHEMATICS COMPETITION

PAGE 10 - ITEC 490 CLASS BRINGING GUESTS TO CAMPUS

PAG 10 - CSAT STEM CLUB

PAGE 11 - RADFORD UNIVERSITY TO HOST CAMP INVENTION JUNE 23-27

COLLEGE OF SCIENCE AND TECHNOLOGY AWARDED \$105,500 JESSIE BALL DUPONT GRANT

The Radford University College of Science and Technology has announced that it has been awarded a \$105,500 Jessie Ball duPont Fund grant to support an expansion of the Radford University Summer Bridge Program. This gift will allow additional high school students to participate in the annual RU outreach program encouraging women to pursue the science, technology and mathematics. The grant will also help establish a new course of study in environmental science within the program.

"We are thrilled that the Jessie Ball DuPont fund has joined the list of Summer Bridge Program donors and we are especially pleased that they are providing funds for a three-year commitment" states Dr. Orion Rogers, Dean of the College of Science and Technology at Radford University. "Their generosity will allow us to provide more high school women a transformative experience in science, technology, and mathematics with our faculty and facilities here on the Radford campus and in the field."

The RU 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 on the Radford University campus. Through classroom lessons, laboratory experiments, and field experiences, Radford University professors draw students in to the wonders of a variety of topics such as studying the making of mountains, combating "hackers" and analyzing "crime scenes", and environmental science - studying habitats through examination of the environment.



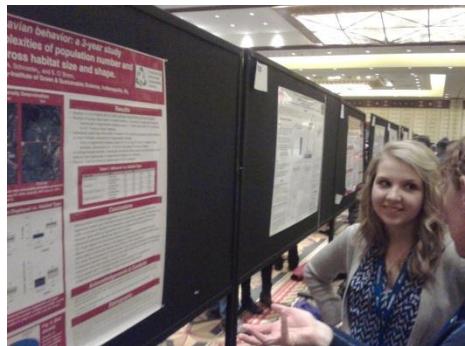
Thanks to the duPont gift and many additional generous donors and sponsors of the program, full scholarships covering all costs of the program will be awarded competitively to participants.

To learn more about the Radford University Supper Bridge Program, please visit this website:
<http://www.radford.edu/content/csat/home/summer-bridge.html>

About the Jessie Ball duPont Fund: The Jessie Ball duPont Fund makes grants to more than 330 eligible organizations identified by Mrs. duPont in her will. The Fund has assets of more than \$270 million and has awarded \$329 million in grants since 1977.

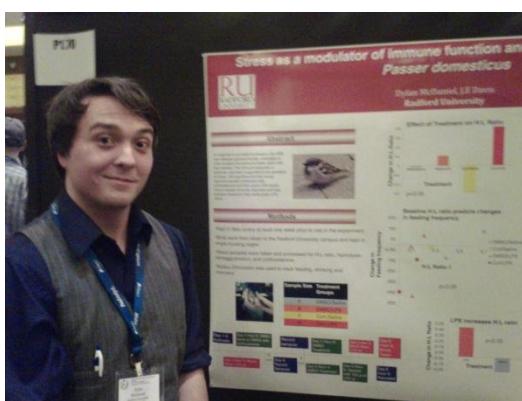
BIOLOGY FACULTY AND STUDENTS PRESENT RESEARCH AT NATIONAL CONFERENCE

From January 3rd to January 7th a group of students and faculty from the Radford Ecophysiology laboratory attended and presented original research at the 2014 annual meetings of the Society for Integrative and Comparative Biology (SICB) in Austin, Texas. SICB, originally founded in 1902 as the American Society of Zoologists, has over 4000 members and its annual conference acts as a gathering place for many of the best biologists in the world.



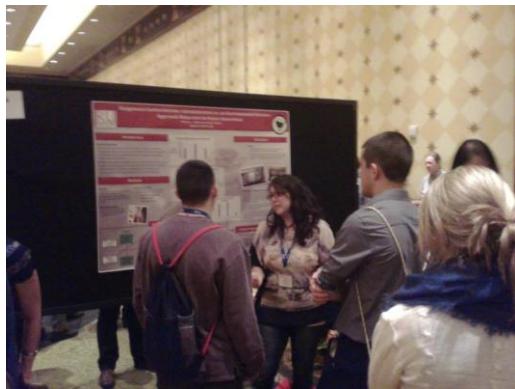
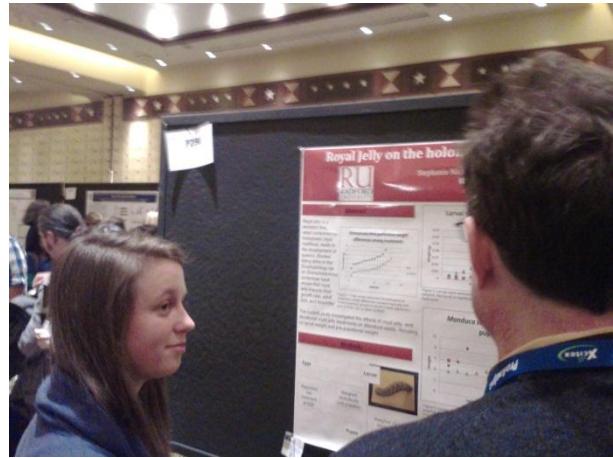
In cooperation with Dr. Sara O'Brien and students from Marian University, recent biology graduate Laken Cooper presented a poster on "Habitat fragmentation and avian behavior: a 3-year study examining the underlying complexities of population number and behavioral aggression across habitat size and shape."

In concert with Dr. Jason Davis and Dr. Judy Guinan, senior biology major Fionna Surette presented a poster regarding "Impacts of daily corticosterone administration on nestling eastern bluebirds' (*Sialia sialis*) age at fledging and parental behavior and corticosterone."



Also working with Dr. Davis, senior biology major Dylan McDaniel presented a poster on "Stress as a modulator of immune function and sickness behavior in *Passer domesticus*."

Junior biology major Stephanie Nicholas presented a poster describing “Hormonal interaction between royal jelly and a juvenile hormone analog on *Manduca sexta* development.”



Psychology master’s student Kirsten Bjornson presented a poster on “Exogenous corticosterone administration vs. an environmental stressor: Approach behavior in *Passer domesticus*.”



Wrapping up the series of Radford University presentations, senior Kristan Cale gave a talk co-authored by Stephanie Nicholas and Dr. Davis exploring “Interactions of major royal jelly proteins and juvenile hormone on growth and development of Madagascar hissing cockroaches (*Gromphadorhina portentosa*).”

The work of the students and faculty was well-received by conference participants and continues to highlight the value of the ongoing research projects at RU where students have the opportunity to experience a process typically only found at graduate-level programs at other institutions.

CSAT SPOTLIGHT: DR. TIFFANY CARPENETTI AND THE EFFECTS OF WATER QUALITY ON AEDES ALBOPICTUS

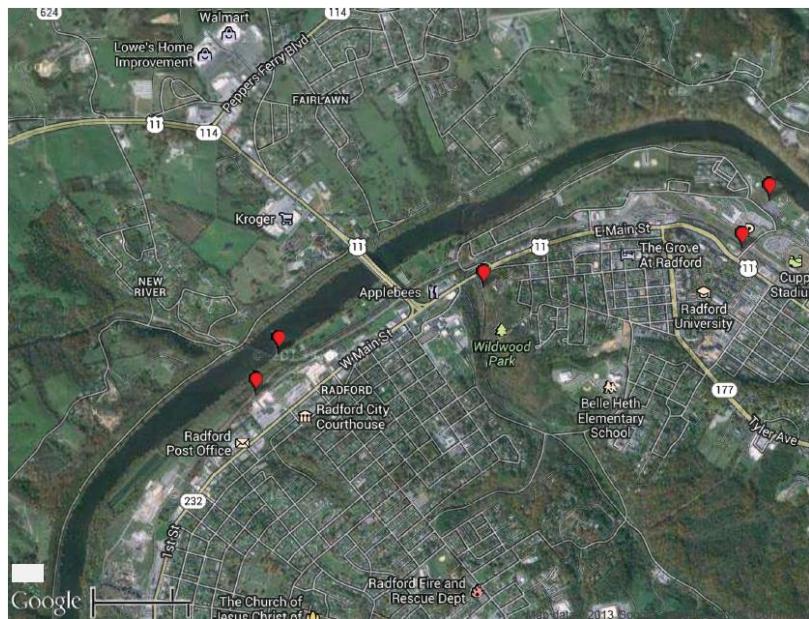
In December 2013, the College of Science and Technology awarded \$89,813 to enhance research opportunities and the student experience within the college. One of those projects is an exploration of the effects of water quality on *Aedes albopictus*, the Tiger mosquito. Leading this project is Dr. Tiffany Carpenetti, biology instructor at Radford University.

Dr. Carpenetti shared some information about her work and her background.

"The research we are doing using the CSAT grant is on Asian Tiger mosquito growth and stress response. We have collected water samples from around Radford (see map) to be tested alongside pure RO water and a positive control (a form of arsenic) to see the effects on how long it takes for mosquitoes to develop, resulting changes in fecundity, and changes in the expression of one set of stress response proteins" states Dr. Carpenetti. "This work is built on my doctoral research concerning Hsp70 heat shock gene expression in yellow fever mosquitoes."



Photo by Jaslyn Gilbert



One possible outcome of the research is better development of programs to deal with disease carrying mosquitos. "Mosquitoes are considered the most dangerous animal on the planet" states Dr. Carpenetti. "I had no idea I would be headed for this research as an undergrad, but I really enjoy it and I hope to contribute to our understanding of these insects so that we can reduce the morbidity and mortality caused by them."

Working with mosquito populations is not always an easy task and you have to assume that you will be bitten many times. Sometimes, it can get out of hand. "The scariest story I have to tell about mosquitoes occurred on the Outer Banks in the Pea Island Wildlife Refuge" says Dr. Carpenetti. "My husband and I were kayaking through the refuge looking at the birds and wildlife and generally just relaxing and enjoying ourselves. However, as it was a sunset trip, when we left the boats to head back to the car we had to run the whole way smacking mosquitoes off each other as we went. I have NEVER been swarmed like that in my life. They were Eastern salt marsh mosquitoes, they were huge, and it was terrible" she recalls.

This research is an extension of work Dr. Carpenetti did as an undergraduate and for her doctorate. "I earned both my B.S. in Biological Sciences and my Ph.D. in Entomology at Virginia Tech, 2006 and 2011 respectively" said Dr. Carpenetti. "I started out as a Biochemistry major, but quickly learned that

chemistry is not my strong suit, so I changed my degree my freshman year and quickly adapted to the new course.”

Sharing her love for biological sciences has been a dream for Dr. Carpenetti. She remembered being bitten by the education bug during her collegiate experience. “Toward the end of my undergrad I knew I wanted to teach, although I thought it would be at the high school level. I started research in order to meet the requirements of the 5th year M.Ed. program at Tech. Very quickly my advisor recognized my potential and offered me funding for graduate work, and thus my research career began in earnest. Although my diploma says ‘Entomology,’ I am really trained as a molecular biologist/geneticist.” Dr. Carpenetti adds “I love teaching because I love sharing. I could (and do) start conversations with strangers about science. I want to pass the passion on to my students, not just passion for science, but passion for learning in general. We are no good to society unless we can form informed opinions.”

Dr. Carpenetti is sharing her passion for research and education with many fortunate undergraduates in her classroom, but one in particular, sophomore Chemistry major James Cardenas, is working closely with her on this project. Mr. Cardenas plans to merge his experience within college along with his ROTC training in a future career in a science related field.



Photo by Jaslyn Gilbert

Dr. Carpenetti’s life outside RU is busy and soon to be busier. “I have been married to my husband for two and a half years (he’s an RU alum), and we are expecting a baby in June” she says. “I have 3 cats, a rabbit, and a beagle to keep me busy as well. I am a hobby beekeeper and truly enjoy working my bees and sharing the harvest every year. I keep a rather large vegetable garden, preserve our harvest by canning and making pickles, and love to make homemade jelly and jam.”

Dr. Carpenetti is also creative in the kitchen. “I hope to expand my culinary experience into the realm of homebrew soon. While I can’t drink beer due to my gluten intolerance, I would like to experiment with making mead, and I already brew kombucha at home. ”

BIOLOGY STUDENT RECEIVES SCHOLARSHIP TO ASSIST WITH HIS PURSUIT OF A MEDICAL DEGREE

Eyob Ayalew, a junior majoring in biology, is the first recipient of the **Dr. Ann S. Ferren MCAT Preparation Scholarship**. Dean of the College of Science and Technology, Dr. Orion Rogers, and the Chair of the Pre-health Advisory Committee within CSAT, Dr. Georgia Hammond, recently presented Eyob with this award, named for and made possible by former RU Vice President for Academic Affairs, Dr. Ann Ferren.



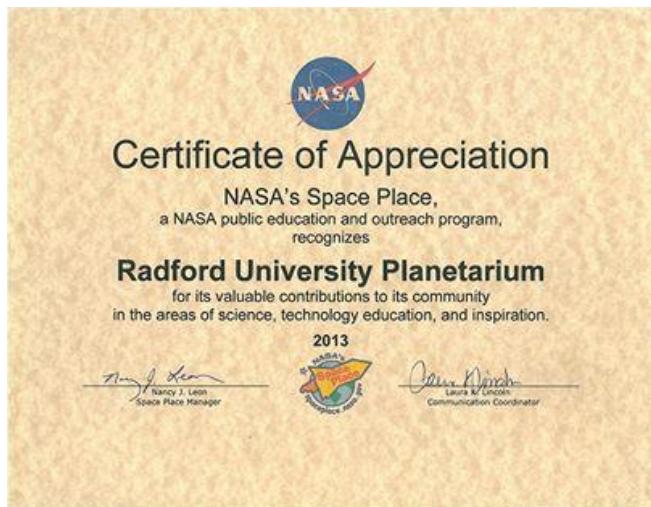
This competitive scholarship is intended to offset a portion of the cost associated with an MCAT preparatory course, such as that provided by Kaplan Test Prep. The Pre-health Advisory Committee reviews portfolios to select a recipient of this scholarship based on a competitive process.

It is not unusual for applicants to excel in the areas of patient care experience through shadowing, community service and GPAs but have average or below performance on the MCAT, a major hurdle for otherwise promising pre-medical students. Some students report that MCAT preparatory courses are effective for increasing scores, but such courses are quite expensive - some approaching \$2,000. This is cost-prohibitive for many students, placing them at a disadvantage to wealthier students.

To be eligible for this award, students prepare a portfolio that is evaluated by pre-med advisors of the Pre-Health Advisory Committee. Award of the Dr. Ann S. Ferren MCAT Preparation Scholarship is based on evidence for predicting success as a medical student as it is presented in the portfolio and includes an examination of the student's academic and standardized testing performance and an essay explaining that student's desire to pursue a medical career.

Eyob Ayalew is an outstanding choice to be the first recipient of this award due not only to his excellent academic work, but also his engagement on campus where he is Executive Secretary of Premed club, a member of the Math Club, a member of the campus program board R-space, Society of National Collegiate Scholar and Honors Academy Scholar. Eyob states that he intends to pursue a residency in psychiatry following his graduation from Radford University and medical school.

RADFORD UNIVERSITY PLANETARIUM RECOGNIZED BY NASA FOR OUTREACH EFFORTS



The Radford University Planetarium was recently recognized by "NASA's Space Place," a program within the National Aeronautics and Space Administration, for "its valuable contributions to its community in the areas of science, technology education and inspiration." Congratulations to Dr. Rhett Herman, Planetarium Director, and the entire staff at the RU Planetarium.

The Planetarium offers an outstanding experience with shows each Tuesday and Thursday at 7:30pm and Saturday mornings at 10:30am on the ground floor level of Currie Hall.

For more information, please visit the Planetarium website:

<http://www.radford.edu/content/csat/home/ru-planetarium.html>

GEOSPATIAL SCIENCE PROFESSOR LAUNCHES NEW WEBSITE AND SOCIAL MEDIA

The Radford University community can now follow Dr. Stockton Maxwell, assistant professor of Geospatial Science at RU, on his new website <https://sites.google.com/site/thetreeringist/> and on twitter : @StocktonMaxwell . Dr. Maxwell shares information for students in his classes, but also fascinating facts about the world of science. We will be featuring other faculty websites and social media accounts in future issues of our newsletter.



COLLEGE OF SCIENCE AND TECHNOLOGY TO HOST OPEN HOUSE FOR PROSPECTIVE RU STUDENTS ON FEBRUARY 22

Students who have an interest in attending Radford University to pursue a major in science or technology are invited to participate in an afternoon open house on February 22 from 1-5pm. In addition to experiencing some of the outstanding outreach programs on campus such as the Greenhouse, Museum of the Earth Sciences and the Planetarium, prospective students will have the opportunity to learn more about financial aid, career services, student leadership opportunities and more. RU CSAT Alumnus Seth Peery will deliver remarks reflecting on his experience as a Highlander and current faculty and students will be available to help showcase the college. For more information, please visit www.radford.edu/sstem.

MUSEUM OF THE EARTH SCIENCES LECTURE

The first spring semester 2014 MES public lecture is scheduled for 7:00 p.m. Tuesday February 4 in the Hurlburt auditorium and will feature:

Dr. Joe Keiper, Executive Director, Virginia Museum of Natural History
Title – “The Entomology of Serial Killings”

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



RADFORD UNIVERSITY TO SERVE AS REGIONAL HOST SITE FOR AMERICAN MATHEMATICS COMPETITION

On February 4, 2014 students from across our region will have the opportunity to put their math skills to the test when Radford University's Department of Mathematics and Statistics and the RU Math Club host the AMC 10/12 program.



For more than 60 years, students across the country have taken up the challenge of America's longest-running and most prestigious math contests, The American Mathematics Competitions (AMC). Every year, at thousands of schools in every state, more than 350,000 students are presented with a set of questions rich in content, designed to make them think and sure to leave them talking.

American Mathematics Competitions
AMC 10/12 A

Dedicated to strengthening the mathematical capabilities of our nation's youth, the AMC program identifies, recognizes, and rewards excellence in mathematics through a series of national contests.

For more information, please visit <http://www.maa.org/math-competitions/amc-1012>

ITEC 490 CLASS BRINGING GUESTS TO CAMPUS

As a portion of the ITEC professionalism course, many guests who can be a benefit to the student community are coming to campus in February.

Representatives from CGI will visit the class in Davis Hall 151 on Feb. 5 from 12:00-12:50 with company information and on-going projects and an overview of their interview and hiring process.

On February 12, Rackspace team members will visit the class in Davis Hall 151 at noon to discuss work and Projects at their company, IT Professionalism and interview tips. The Rackspace team will also conduct a Tech Talk on the Rackspace Cloud Control Panel in Heth Hall 016 at 1pm and will have an information table in Stuart Lounge from 2:15-4pm.

Derick Maggard, Director of the Roanoke - Blacksburg Technology Council will provide an Introduction to RBTC and companies in the NRV on February 17 at noon in Davis Hall 151.

On February 19, from 12:00-12:50 representatives from Multivision with provide a presentation on the job market: hot skills and communication in Davis Hall 151.

Finally on February 21, Dr. Martin L. Barrett, Graduate Coordinator and Assistant Chair, Department of Computing, East Tennessee State University will discuss graduate school and the application process at noon in Davis Hall 151.

CSAT STEM CLUB

The CSAT STEM club is meeting every Tuesday at 5:30pm in the Stuart Hall Lounge. Members are planning a spring trip and a college-wide engagement drive for students in CSAT. They are also looking to sponsor a speaker on a science-related topic for the entire Radford University community during the spring semester.

RADFORD UNIVERSITY TO HOST CAMP INVENTION JUNE 23-27

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 this summer in Reed and Curie Halls each June. The 2014 edition of the program is scheduled for June 23-27.

Photo by Lora Gordon



This exciting, weeklong adventure in creativity immerses children in imaginative play that reinforces and supplements school-year learning in the subjects of Science, Technology, Engineering and Math (STEM). Children work together to seek innovative solutions to real-world challenges and sharpen critical 21st century learning skills such as teamwork and creative problem solving as they rotate through four modules each day that disguise learning as fun. Camp Invention is the

only nationally recognized summer program focused on creativity, innovation, real-world problem solving and the spirit of invention.

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>