

FROM THE DEAN'S DESK – MAY 14, 2018

THE RADFORD UNIVERSITY ARTIS COLLEGE OF SCIENCE AND TECHNOLOGY NEWSLETTER



The 2018 Artis College of Science and Technology Dean's Scholars

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CHEMISTRY DEPARTMENT RECEIVES AMERICAN CHEMICAL SOCIETY APPROVAL

The Radford University Department of Chemistry was recently notified that the American Chemical Society (ACS) was placing the program on their list of approved institutions, an honor that few undergraduate programs achieve. Approved programs must meet rigorous standards established by the ACS including the quality of the curriculum, facilities, faculty research and teaching load, and several other areas. Students who graduate from the Radford University Department of Chemistry with the approved curriculum will receive a special certification from the American Chemical Society which will help to distinguish them among their fellow graduates as they pursue additional training and education or move into the work force.

Long a goal of the Department of Chemistry, this designation was not attained easily. The construction of the Center for the Sciences along with the addition of new faculty helped to meet the standards from the ACS. ACS-approved programs offer a broad-based and rigorous chemistry education that gives students intellectual, experimental, and communication skills to become effective scientific professionals.



There are many benefits to achieving this designation from the American Chemical Society. Institutions with an ACS-approved chemistry program attract top high school talent looking for established and rigorous departments.

Approved departments are staffed by accomplished faculty, contain a modern and well-maintained infrastructure, and provide a coherent chemistry curriculum.

Employers find graduates of approved programs to be better prepared for technical employment. The approval process provides a mechanism for departments to evaluate their program, identify areas of strengths and opportunities for change, and leverage support from their institutions and external agencies.



ACS
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AMERICAN CHEMICAL SOCIETY

ARTIS COLLEGE STUDENTS AND FACULTY RECOGNIZED DURING AWARDS CEREMONY

Academic achievement, dedication, and hard work were recognized on Friday, May 4th, in the Artis College of Science and Technology during a special awards ceremony held in conjunction with Commencement 2018.

The top students in each degree program within the college were named Dean's Scholars and received plaques and stoles to designate their achievement and to be worn during commencement ceremonies.



Dean's Scholars pictured from left to right:

Mathematics and Statistics – Ms. Jenna Foster

Physics – Mr. Tristan Blackwell

Information Technology, Information Science – Mr. Michael Taylor

Information Technology, Computer Science – Ms. Bridget Opazo

Geospatial Science – Mr. Hudson Chase

Geology – Mr. Zachary Yates

Chemistry – Mr. Alex Atwood

Biology – Ms. Kristy Clark

Anthropological Sciences – Ms. Kimber Cheek

Biology and Anthropological Sciences students who participated in the Biology Connections Living/Learning Community were also recognized for the successful completion of their experience.



Biology Connections Students



Artis College ELITE Scholars (l to r) Mr. Tristan Blackwell, Ms. Adrienne Reeder and Ms. Kyanna Jenkins.

Several students who participated in the Emerging Leaders in Technology, Science and Mathematics program known as ELITES, enhanced their Radford experience by developing key leadership skills that are not generally associated with STEM areas of study. As part of the ELITES program, students interact with their peers and faculty, practice public speaking and engage in research among many other potential areas.

Dr. Parvinder Sethi was the recipient of the Artis College Outstanding Teaching Award as nominated and determined by students in the college.



Dr. Parvinder Sethi and Dr. Art Carter

Dr. Tara Phelps-Durr was recognized as the Artis Outstanding Faculty member as the college awards committee.



Dr. Tara Phelps Durr and Mrs. Nancy Artis '73

Mrs. Artis also participated in the presentation of the Artis Outstanding Student Award to Ms. Kimber Cheek, an Anthropological Sciences Major.



Ms. Kimber Cheek and Mrs. Nancy Artis '73

VIRGINIA MATHEMATICS TEACHER JOURNAL WINS NATIONAL AWARD

The National Council of Teachers of Mathematics (NCTM) has named the Virginia Mathematics Teacher Journal their Outstanding Publication at a ceremony during their recent conference in Washington D.C. The award was based on the quality of the journal for two consecutive years, 2016 and 2017. Radford University Professor of Mathematics and Statistics, Dr. Agida Manizade serves as Editor in Chief for the publication and has instituted many improvements since taking charge of the journal in 2015.

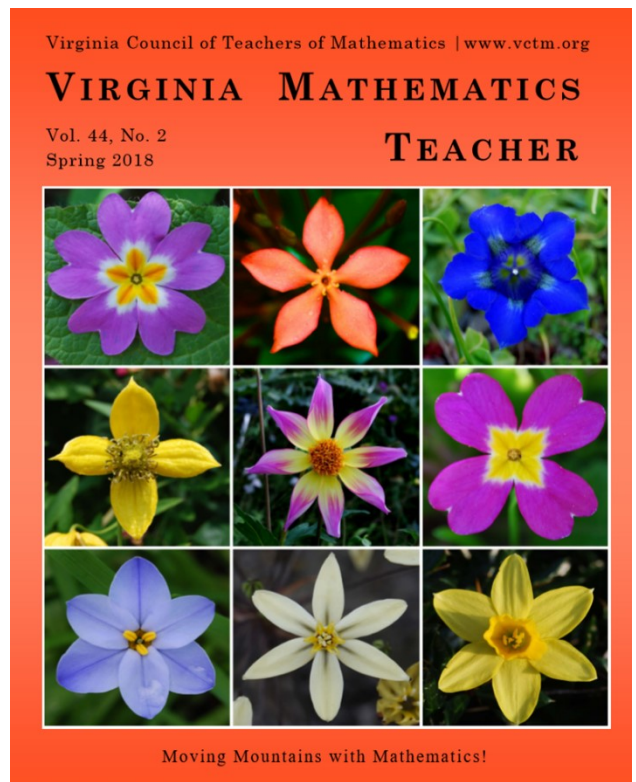


Ms. Alex Largen, Dr. Jean Mistele, NCTM President Dr. Matthew Larson, Dr. Agida Manizade, and Ms. Cameron Leo '17

Dr. Jean Mistele, Associate Professor of Mathematics and Statistics at Radford University, serves as Associate Editor on the editorial board staff along with Cameron Leo '17, and Alex Largen who is a current Radford University undergraduate student.

“Without the continued support from the mathematics community, this would not be possible,” stated Dr. Manizade. “Our editorial board plays a tremendous role in keeping the Virginia Mathematics Teacher as a high-quality source of relevant information for the community. We strive to strike a balance between providing information related to mathematical content and helpful pedagogical practices in a mathematics classroom.”

To make the journal more engaging, Dr. Manizade has been sure to include practitioner-oriented articles, mathematics competitions, puzzles, jokes, and other information specifically designed for mathematics teachers at all levels. “Every member of the editorial board has contributed to our success, as the award was given based on the quality of the journal publications for two consecutive years,” she added.



DR. DONNA NELSON KEYNOTES CHEMISTRY MEETING AT RADFORD UNIVERSITY

The 693rd Meeting of the Virginia Blue Ridge Section of the American Chemical Society was held on Friday, April 20, 2018 on the Radford University campus. The program featured a keynote presentation by Dr. Donna J. Nelson, Professor of Chemistry at the University of Oklahoma, 2016 President of the American Chemical Society, and science advisor for the hit TV show *Breaking Bad*.



Dr. Orion Rogers, Dr. Kim Lane, Dr. Donna Nelson, Dr. Chris Hermann

In addition to sharing many other stories from her distinguished career, Dr. Nelson discussed her work as a consultant in a presentation entitled: *The Science of Breaking Bad: A Look Behind the Hollywood Screen*. As science advisor of the hit TV series *Breaking Bad*, Dr. Nelson shared her experiences in Hollywood and how the world of science and film connect. She also revealed how science-related information behind the show was crafted in order to support the actors and engage the public. Dr. Nelson discussed her

interactions with script writers and her insights into the roles of science advisors in television and film production.

Dr. Nelson received her PhD in organic chemistry in 1980 from the University of Texas. Her research has focused most recently on single-walled carbon nanotube (SWNT) functionalization, especially SWNT-biomolecule conjugates. Dr. Nelson is also involved in developing America's scientific readiness, a broad area of study in which she focuses on classroom innovations, on correcting organic chemistry textbook inaccuracies, on ethnic and gender diversity in research universities, and on improving the image and presentation of science and scientists to the public. Dr. Nelson was named an ACS Fellow in 2010 and served as President of the American Chemical Society in 2016.

Dr. Nelson was also recently announced as one of 70 of the Most Inspirational Women Leaders Impacting the World in 2018.





Ms. Alex Hawks '18 presents her research during the 693rd Meeting of the Virginia Blue Ridge Section of the American Chemical Society on April 20th

Students from Radford University and several other institutions from the region presented their research during a poster session and reception held in the Main Street area of the Center for the Sciences. The program also featured the presentation of several awards including recognition of the James Lewis Howe awards to outstanding students in the region.

SUMMER SCHOOL STUDY ABROAD PROGRAM EXPLORES CLASSIC CRYPTOLOGY

This May, a group of Mathematics and Statistics students are traveling with Dr. Neil Sigmon to Washington D.C. and then to London to explore one of the most famous ciphers in history.

“We are going on this Study Abroad trip to London with a point of emphasis being the work the Bletchley Park Codebreakers did in breaking the German Enigma Cipher in World War II,” stated Dr. Sigmon, Professor of Mathematics and Statistics at Radford University.

The group will begin their journey on May 14th as they travel to Washington D.C. where they will visit the International Spy Museum, the National Cryptologic Museum and the Smithsonian. They then move to the original site of the effort to break the Enigma cipher: London. “We plan to visit Bletchley Park and see where Turing and the Codebreakers worked,” stated Dr. Sigmon. Also on the trip, the group will explore the Churchill War Rooms, HMS Belfast, the Imperial War Museums, and many other sites in London.



Bletchley Park, London



An authentic German Enigma coding machine

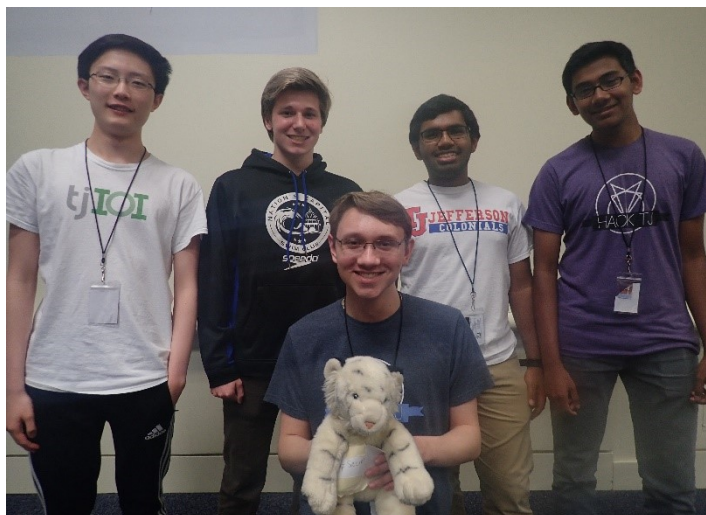
The group has been preparing for the adventure since February. “We have been meeting once a week (on weekends believe it or not) starting the week before Spring Break learning about cryptology in general, how the German Enigma cipher worked, and introducing how the Turing Bombe (the mechanical device the codebreakers used to break the Enigma machine) worked,” recalls Dr. Sigmon.

RU SECURE CYBER CONTEST CHAMPIONSHIP HELD APRIL 28th

A champion was crowned on April 28th in the 2018 RUSecure Capture the Flag cyber security contest. Thomas Jefferson High School for Science and Technology came out on top. New River Community College and Lord Fairfax Community College were very close behind in 2nd and 3rd place respectively.

The fall Preliminary Round of the contest reached more than 70 community colleges and high schools across the country including 125 teams and more than 525 students – a new record.

The spring Qualifying Round included 70 teams from 60 community colleges and high schools reaching more than 300 students – another new record.



Students from Thomas Jefferson High School were champions in the 2018 RUSecure Capture the Flag competition

The Final Round included 7 teams representing 6 different schools, and included approximately 35 students from New River Community College, Lord Fairfax Community College (2 teams), Marshall Academy, Thomas Jefferson High School, Poolesville High School (M.D.) and Radford High School (participating as observers). All of the finalists are to be offered at least a \$500 scholarship from the Department of Information Technology Scholarship Fund if they choose to enroll at Radford University. The 3rd place team members earned \$1,000 scholarship offers, 2nd place team members earned \$1,500 scholarship offers, and the 1st place team members earned \$2,000 scholarship offers.

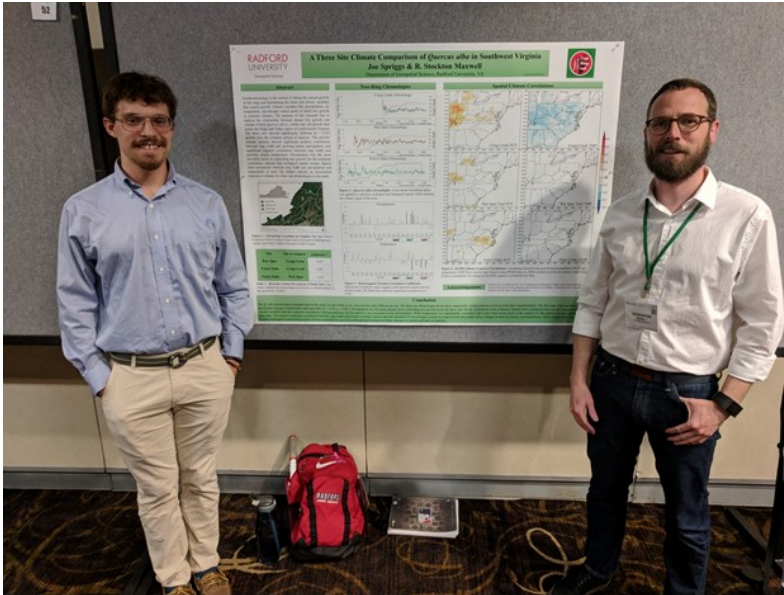
In addition to our regional schools from Virginia and Maryland, this year's contests included schools from as far away as Chicago, Dallas, San Francisco, and rural Michigan.

Along the way, students have solved challenges in Cryptography, Hashing, Networking, Linux, Windows, Radio Frequency hacking, Hacking a Pi, and many, many more. As has been the history of the contest, the participants, coaches, and the organizers all seem to learn something before it is over.

Topic areas featured in the contest include the anatomy of an attack, an introduction to networking, cryptography, forensics, web security, and Windows/Linux security.

Dr. Neil Sigmon, Professor of Mathematics and Statistics produced some very challenging cryptography problems for both the Qualifying Round and the Finals. Contest Co-Directors are Dr. Joe Chase – jchase@radford.edu and Dr. Prem Uppuluri - puppuluri@radford.edu.

RADFORD UNIVERSITY GEOSPATIAL SCIENCE STUDENTS PRESENT WORK AT NATIONAL CONFERENCE



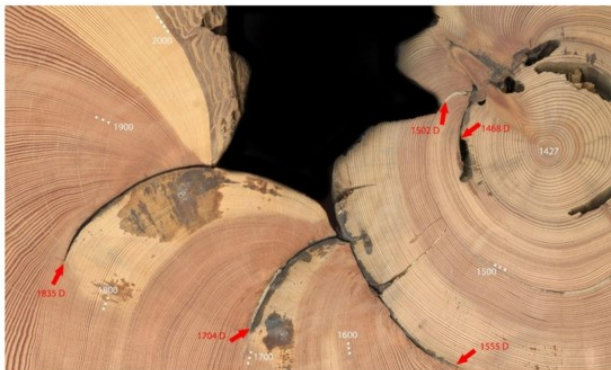
Mr. Joe Spriggs and Dr. Stockton Maxwell

Three students and Dr. Stockton Maxwell, Associate Professor of Geospatial Science, attend the American Association of Geographers International Conference from April 10-14th in New Orleans, LA.

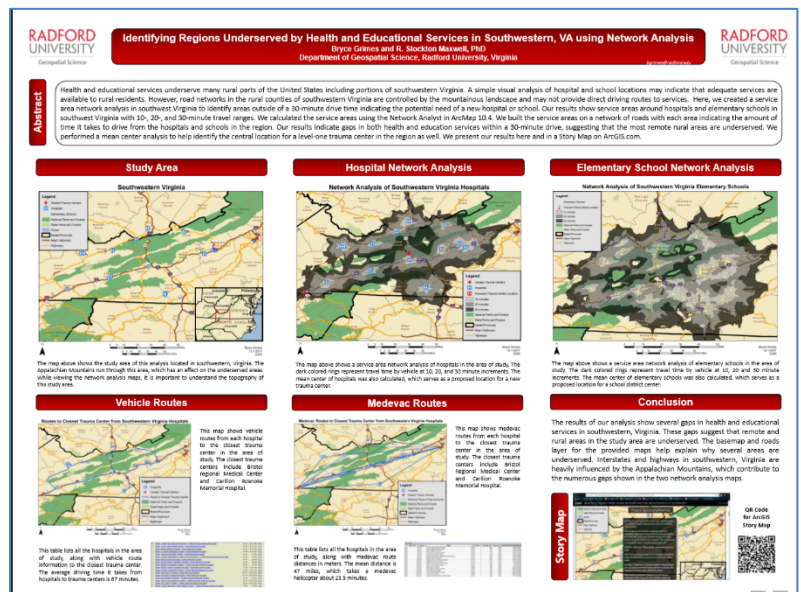
The students, Mr. Hudson Chase, Mr. Bryce Grimes, and Mr. Joe Spriggs each presented posters of their independent research in geographic information systems and tree-ring analysis.

Dr. Maxwell also presented his work on tree-ring analysis and organized sessions on tree-ring analysis.

Dr. Maxwell is also the author of a peer-reviewed paper published in April entitled "Advancing Dendrochronological Studies of Fire in the United States" in the journal *Fire*. The article is open source and can be found here: <http://www.mdpi.com/2571-6255/1/1/11>



An image from Dr. Maxwell's article in the journal *FIRE*



Bryce Grimes' research poster presented at the American Association of Geographers International Conference

100 GIRLS OF CODE EVENT SCHEDULED FOR JUNE 9 AT RADFORD UNIVERSITY

The New River Valley chapter of 100 Girls of Code is planning an event on Saturday, June 9 at Radford University. The mission of 100 Girls of Code is achieve gender parity in STEM fields by introducing more young women to code and computer engineering at a young age. The organization seeks to inspire more girls to pursue a future in STEM by providing young women an opportunity to create and gain confidence in what they create. The June 9 event is co-sponsored by the Radford University Department of Information Technology and the Artis College of Science and Technology.



100 Girls of Code invests in young women through workshops introducing them to the world of computer science and engineering, where they create code and engage in hands-on, innovative thinking. The workshops are led by programmers who are experts in their fields and academically-trained but most importantly, they are “girls of code” themselves. All events are free.

To learn more about this event, please visit:

<http://www.100girlsofcode.com/new-river-valley-va.html>

CAMP INVENTION AT RU SCHEDULED FOR JUNE



Camp Invention is a nationally recognized, non-profit elementary enrichment program backed by the National Inventors Hall of Fame.

Over the past 40 years, and in partnership with the U.S. Patent and Trademark Office, the Camp Invention program has encouraged nearly two million children, teachers, parents, college students and independent inventors to explore science, technology and their own innate creativity, inventiveness and entrepreneurial spirit.

Kids from the first through sixth grades can participate in Camp Invention at RU this June 19 - 23. Local educators will serve as faculty to lead the week of hands-on fun at Radford University, sponsored by the

Artis College of Science and Technology.

Registration is now open. For more information, please visit:

<http://inventnow-web.ungerboeck.com/programsearch/moreinfo.aspx?event=16842>