

November 17, 2011

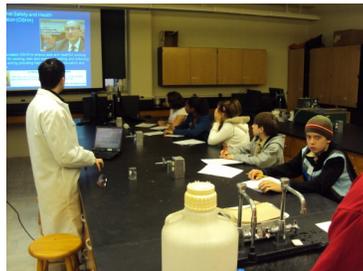


From the Dean's Desk

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Science Exploration Day Slated for February

Radford University College of Science and Technology Science, Technology, Engineering and Math Club (CSAT STEM Club) will be hosting its annual RU Science Exploration Day on February 18, 2012 to offer middle and high school students an opportunity to explore their interests in science, technology and mathematics.



This will be the third year for the event. The curriculum is based on the Boy Scout merit badge curriculum. Originally, the program was created to offer Boy and Girl Scouts an opportunity to fulfill merit badge requirements in the sciences and

Eagle Scout requirements. This year, the program is open to all fifth through eleventh graders in the region.



CSAT faculty members and CSAT student groups volunteer their time to teach the day-long classes with a computer gaming presentation, planetarium show and Museum of the Earth Sciences tour to finish off the day.

Last year, more than 100 youngsters participated in the event. This year, participation will be capped at 180 students.

Club and Anthropological Sciences Club, faculty members Laura Jacobsen, Joe Chase, Cassady Yoder, Joe Wirgau and Rhett Herman in addition to Ann Brown, Melissa Chase and John Fitzgerald make the event possible by volunteering their time and expertise on February 18.

For more information about Science Exploration Day or to register, visit www.radford.edu/csat and download a registration form. Cost is \$4. Registration deadline is February 3, 2012.

Science Exploration Day 2012 classes include Computers, Indian Lore, Chemistry, Personal Management, Electronics and Communication.

The CSAT STEM Club, Chemistry Club, Physics



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Upcoming Events:

- Journey to the Stars, Nov. 17, 7:30 p.m., RU Planetarium, Curie Hall.
- Kid's Planetarium Show, Nov. 19, 10:30 a.m., RU Planetarium, Curie Hall
- MES Lecture Series: Running cedar, fossil plants, and the Wicked Witch of the West, Dec. 6, 7 p.m., Bonnie Auditorium

Students Present at American Chemical Society Meeting

Last month, five undergraduate researchers in chemistry presented their work at the South East Regional Meeting of the American Chemical Society (SERMACS) in Richmond.

Students across the college receive undergraduate research experience and, with the encouragement and guidance of their faculty mentors, travel to regional and international conferences to present their work.

Students Brittany Wike and Alex Noble presented their research with chemistry faculty member Kimberly Lane entitled "Mutagenesis of the active site and subunit interfaces in bacterial β -glucuronidase."



Alex Noble and Brittany Wike with faculty mentor Kim Lane

"We are looking at the active site and subunit interfaces of the enzyme to learn more about the thermodynamics of it," says Wike about her research.

Wike took biochemistry with Lane and knew that she wanted to be involved in Lane's research. "I expressed my interest in her research and joining her team. That semester she took me in as one of her researching students," says Wike.



Wike says that SERMACS was her first conference and she loved it. "The experience as a whole was just incredible. The posters and the presentations were interesting, and the way the conference was laid out was well done," she says. She enjoyed that there was always something to learn and do at the conference. "I particularly enjoyed walking around the different vendors and seeing what new gadgets they brought with them. I also like the graduate schools that came and passed out information about their programs," she said.

She said that as a biology major and chemistry minor, the conference allowed her to learn more about research across the region. "I was able to also appreciate more of the things some of the other presenters were talking about because the professors at RU do such a nice job explaining material and helping stu-

dents. I think that was the best part about this experience in regards to my education experience at Radford," she explains.

The presentations and speaking with the vendors at the conference gave Wike an idea of what awaits her upon graduation. "SERMACS gave me a little bit of a window into what it would be like at some of the schools that came to give out graduate school information, or maybe one day I will work with one of the vendors to buy a piece of equipment," says Wike.

Chemistry student Rebecca Mayfield presented a poster regarding her work with faculty mentor Joe Wirgau entitled "Thermodynamic investigation of ternary complex formation of ferrioxamine B and imidazole." Wirgau gave a talk about this research in addition to his previous research results entitled "Role of ternary complex formation with iron(II) chelators in the reduction of ferrioxamine B by biological reducing agents." He says that his research is attempting to better understand redox chemistry of the iron overload drug Desferal.

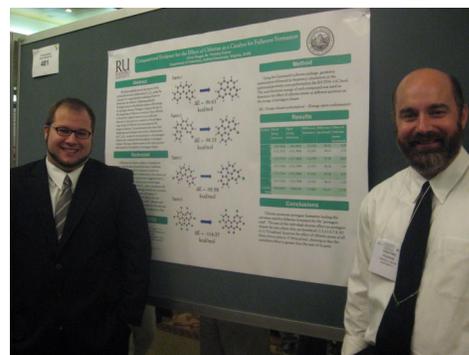
Mayfield said that she enjoyed learning more about graduate

programs available for chemistry students. "There was a graduate fair at the conference, which was a good time to get to talk with reps from various grad. programs and to get a feel for some different career opportunities after graduation. It was also good just to talk with professionals and people already in the work-force," she says.

Jacob Shelton with faculty mentor Christine Hermann



Chemistry student Jacob Shelton presented his research with faculty mentor Christine Hermann entitled "Synthesis of Ethanol from Sugar, Starch, and Cellulosic Feedstocks."



Above: Chris Pregot with faculty mentor Tim Fuhrer

Left: Rebecca Mayfield with faculty mentor Joe Wirgau

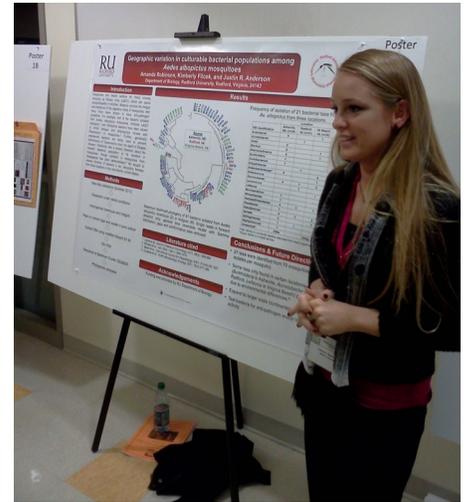
Chemistry faculty member Tim Fuhrer and his student Chris Pregot presented their research "Computational evidence for the effect of chlorine as a catalyst for fullerene formation." In addition, Fuhrer gave a talk entitled "Y2C2@C92 and Y2C2@C82: Two distinct carousel type cluster rotations."

Biology Students Present Arsenic and Mosquito Research

Biology students Amanda Robinson, Kimberly Filcek, Jasmine Jackson, Erin Fowler and Megan Smith recently presented their research at the American Society of Microbiology regional meeting at Virginia Tech.

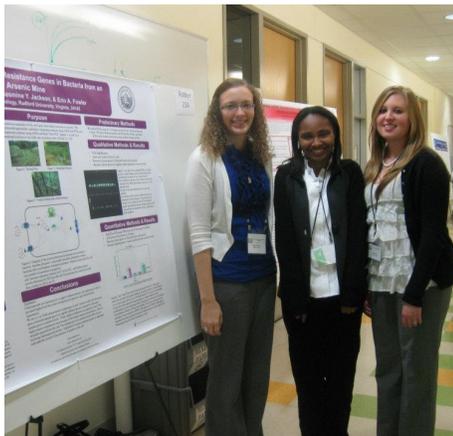
Smith, Fowler and Jackson presented their research project "Expression of Arsenic Resistance Genes in Bacteria from an Arsenic Mine." Their work, under the direction of faculty mentor Georgia Hammond, focused on growing bacteria in known concentrations of sodium arsenate and then analyzing the level of transcription of the arsenic resistance gene, arsenate reductase, relative to a housekeeping gene. They performed this research with Real-Time PCR.

Robinson presented a poster titled "Geographic variation in culturable bacterial populations from *Aedes albopictus* mosquitos." Robinson and her faculty mentor Justin Anderson sampled mosquitoes from Asheville, NC, Radford and Virginia Beach. They then isolated and identified bacteria from the diverticula and midguts of the digestive tracts to assess whether the bacterial community varies between mosquito populations. "The project goals are to understand how bacterial populations differ among mosquito populations and to determine whether these bacteria might be useful in preventing the spread of mosquito-borne diseases," says Anderson.



Top: Amanda Robinson

Bottom: Kimberly Filcek



Biology reserach students
Megan Smith, Jasmine
Jackson and Erin Fowler

Filcek presented a poster entitled "Genetic differences among mosquito prohibitins, putative dengue virgus receptors." Her work with her faculty mentor Anderson centers around how a prohibitin protein might affect the ability of mosquitoes to become infected with dengue viruses, which cause the tropical illness dengue fever. Filcek and Anderson isolated and sequenced the prohibitin gene from two mosquito species known to be able to transmit dengue virus, and then compared them to three other known sequences, one vector and two non-vectors. The pair identified six amino acids that were different between vectors and non-vectors. Their future work will determine whether one or more of these changes lead to changes in the transmission of the virus.



Information Technology Department Hosts ACM Competition

The Department of Information Technology served as a Mid-Atlantic regional site for the The ACM International Collegiate Programming Contest. The competition is an activity of the Association for Computing Machinery that provides college students with an opportunity to demonstrate and sharpen their problem-solving and computing skills.

Information technology professor Maung Htay served as regional contest director, IT faculty member Andrew Ray and Kathy Anderson served as regional systems team leaders, Anderson and IT students Alex Meade and Andrew Melton served as local systems team leaders, and Melton served as webmaster.

Teams from Radford University earned 49th, 87th and 100th places out of 166 teams in the region. Duke University won the first place spot in the Mid-Atlantic region.



CSAT STEM Club News

From the Dean's Desk

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Innovation Inspired

On Tuesday, November 8, the CSAT STEM Club hosted a game night in the Bonnie Game Room with the Chemistry Club and Tri Beta. On Tuesday, November 15, the CSAT STEM Club had another game night, but this time in Stuart Hall Lounge. During the game night on November 15, members played different board and card games. This offered members a chance to socialize and relax before Thanksgiving Break.

The Canned Food Drive is still in session, and will end on Friday, November 18. Boxes are still located around campus in Davis Hall, Reed Hall, Young Hall, and Walker Hall. If you have any canned foods to donate, please drop them off. The CSAT SEM Club held a bake sale on Monday, November 14 to raise funds for the Radford Fairlawn Daily Bread. The funds will be donated with the cans that are collected for the charity.

As a club, we would like to thank students, professors and staff who participated in the canned food drive. We greatly appreciate what you have contributed to us.

www.radford.edu/csat

Top: Signs at collection areas for the CSAT STEM Club food drive

Bottom: Collection box for the CSAT STEM Club food drive

