Faculty Retreat Offers a Chance for Communication and Collaboration

What do biology, math and information technology disciplines have in common? According to a leading expert on mathematics education in the natural sciences – a lot.

Lou Gross, Director of the National Institute for Mathematical and Biological Synthesis facilitated a workshop sponsored by the CSAT biology program for math, biology and information technology faculty who were interested to learn how to better engage and prepare students for success in the sciences by encouraging and requiring students to understand the utility of math concepts in real biology applications.

"Students go to math classes and learn algebra or calculus. And then they go to their biology class and don’t make the connection that they need this math knowledge and skill in their biology labs. They tend to compartmentalize their knowledge,” says Gross.

This workshop was designed to help biology faculty learn more about the concepts taught in classes in the math department and which classes would best suit biology majors.

"I think the discussion today will help me in an advising capacity to direct students to the right classes. Also, it will help me figure out how to incorporate more math concepts in my biology classes,” says biology faculty Justin Anderson.

Participants also discussed ideas such as creating a team-taught mathematics in the natural sciences course.

Many of the faculty said that it was interesting to sit down with colleagues across disciplines and talk about the commonalities among the fields and learn from each other. They say this inspires many ideas for collaboration throughout the college.

CSAT STEM Club Hosting CSAT Fall Picnic Sept. 9 in Bisset Park

The College of Science and Technology STEM Club will be hosting a fall picnic for all CSAT faculty and students on Wednesday, Sept. 9 from 4—8 p.m. in Bisset Park, Shelter 1. Faculty are invited to bring a dish to share.

The club is also planning additional events for the upcoming academic year including a Colloquium Series in which the club will extend invitations to faculty across CSAT disciplines to present research or other activities with a cross-discipline appeal. The club will also coordinate activities such as a “mythbusters” competition, Facebook group, a booth at the Highlanders Festival and regularly scheduled socials.

The STEM Club was created through a National Science Foundation Grant that offers 20 students interested in science, technology and math up to $2,800 in scholarship funds. In addition to the STEM Club, these students are engaged in leadership training and activities. The STEM Club is open to all students in the CSAT.

For more information, contact the club’s faculty advisor Laura Spielman.
The CSAT chemistry program is offering their new majors and prospective new majors a kick-start through CHEM 160 – Chemistry Seminar. This new class is designed to introduce majors to the chemistry program faculty, classes, opportunities and research. “From day one we make sure students in this class meet all of our faculty and learn about classes offered in the chemistry major. We will explain the classes and topics so that students aren’t nervous about the program,” says class instructor and chemistry faculty member Kimberly Lane. Class members will also learn about research being conducted by faculty and students and how they can get involved. “As chemistry majors, students are now required to work a certain number of hours in the lab with a faculty mentor,” says Lane. She says once students learn about the exciting research chemistry faculty and students are conducting, they will be encouraged to become more involved in research. During the class, RU chemistry alumni will serve as guest speakers and will discuss topics such as applying to and attending graduate and professional school, and their experiences as professional chemists. Lane will also discuss lab safety, scientific ethics, campus resources, study skills, how to apply to graduate and professional schools, activities and clubs for chemistry majors, and chemistry as it applies to society and our communities. One of the required texts will be the magazine Chemistry and Engineering News published by the American Chemistry Society, which discusses innovations in chemistry, science policy and government. Chemistry Seminar meets every Wednesday from 6 – 8 p.m.

Biology Student Receives Prestigious Scholarship

Rising sophomore Jessica Sosnicki is the recipient of the 2009 student award given annually by the Thomas Jefferson Soil and Water Conservation District. The $1,000 scholarship is given to one undergraduate student pursuing a career in a conservation related field. Sosnicki received the award based on her exemplary grades, an essay she wrote and a strong letter of recommendation written by RU biology professor Karen Francl. Sosnicki served as a co-vice president of the newly organized Radford University Student Chapter of The Wildlife Society and will be the group’s co-president beginning in the fall. Sosnicki has volunteered for numerous activities at RU, including small animal trapping, Vulture Day, frog/toad calling surveys and organization/implementation of Bioblitz at RU’s Selu Conservancy. “I am very impressed with Jessica as a student and as a future researcher,” Francl said. “I suspect we’ll celebrate more of her successes over the next few years.”

This summer, Sosnicki completed an environmental internship with the Virginia Space Flight Academy as an instructor for their summer science programs. The Thomas Jefferson Soil and Water Conservation District provides comprehensive and efficient natural resource assistance and serves the Virginia counties of Albemarle, Fluvanna, Louisa and Nelson.
CSAT Students Encouraged to Attend NCTC Expo in Roanoke

The CSAT would like to invite faculty and students to attend the NewVa Corridor Technology Council’s 2nd Annual Demo Day and Tech Expo on Friday, Sept. 18 from 2—5 p.m. in the Roanoke Civic Center. The event is free.

This expo is not just for IT faculty and students, “Many biotechnology and pharmaceutical companies will be attending and would like to meet students from all of our science disciplines,” says IT faculty Jeff Pittges. “This is a great opportunity for our students to network with local employers and show off their work,” says Pittges.

Cynda Johnson, M.D., Founding Dean of the Carilion Virginia Tech School of Medicine will be the keynote speaker for the event. She will provide an update and virtual tour of the school and discuss opportunities for collaboration.

For more information, contact Pittges at jpittges@radford.edu.

RU Student and Professor Help Ecuadorian Town Create Hydroelectric Power

RU senior geography major Seth Younger used his Global Positioning System (GPS) and geographical technology expertise to help a small town in central Ecuador develop the plans to transform power from a stream. Younger and his faculty mentor Bernd Kuennecke traveled to the South American country to research land use and the possibility of hydroelectric power for the town of Salinas. The trip, mostly funded by an RU Summer Research Grant, offered Younger an opportunity to experience the Ecuadorian culture while applying his knowledge and skills to improve lives.

“Salinas is a small town at 11,500 feet elevation and its electricity goes out a lot,” says Younger. To help solve this problem, the town wanted to install a hydroelectric turbine and use the local stream to create a more stable energy source. Community members wanted to know how much power they can produce with the turbine and how much it would cost. By using RU’s hydrologic equipment and GPS equipment, Younger and Kuennecke measured the stream’s water flow and elevation at the top and bottom of the waterway. The pair carried the 15 pounds of equipment approximately nine miles a day up and down the Ecuadorian hills.

At the end of the two weeks, Younger and Kuennecke presented their research findings to Salinas’ community group called the Salineros. “I think that the people wanted to do this project for a while but didn’t know how to do it. But after we showed them our findings, they realized it’s not as hard as they thought it would be,” says Younger. The town is also looking into the possibility of sharing their hydroelectric power with neighboring communities. “We’re hoping that we can go back and conduct more research to develop this idea,” adds Younger.

In addition to the team’s hydroelectric research, they also looked at land use in and around Salinas. “Salinas is a model community for central Ecuador,” says Kuennecke. “It uses its land very well and is quite productive. For instance, the people have incorporated anti-erosion techniques that aren’t seen in other areas,” adds Kuennecke. These land use research findings will continue to be analyzed throughout the next year.

“We teach students skills that are applicable, rather than just theory that they learn from textbooks. Here they get theoretical and practical applications. I think that’s a unique opportunity for undergraduate students at RU,” says Kuennecke.

Kuennecke hopes to return to Salinas with more undergraduate students to further this hydrologic and land use research. “I do plan to go back, after I learn a little bit more Spanish,” adds Kuennecke. This fall, the professor will become a student. He’s enrolled in Beginning Spanish II.
The College of Science and Technology inspires students to look beyond their world and into the global arena of ingenuity, invention and research.

College faculty dedicate themselves to their students' success. They are mentors who guide inquiring minds through the process of discovery in the classroom and in real-world research.

The College of Science and Technology houses the Departments of Mathematics and Statistics, Information Technology, Biology and Chemistry, and the School of Environmental and Physical Science which includes the disciplines of anthropology, geology, geography and physics.

College faculty and students collaborate across disciplines in research and real-world problem solving. This synergy inspires many opportunities for faculty and student innovation to take root and grow to meet the ever changing needs of the global community.

Thank you for being a part of our CSAT faculty. You inspire excellence within our students and your colleagues.