From the Dean’s Desk

November 12, 2009

IT Student Programming Team Ranked Top 40 in Mid-Atlantic Region

Three RU computer programming teams competed in the Association for Computing Machinery Mid-Atlantic programming competition last week. Radford hosts the competition every year and serves as one of the 10 regional sites for colleges in the District of Columbia, eastern Pennsylvania, southern New Jersey, Delaware, Maryland, North Carolina, Virginia and West Virginia.

Students from Virginia Tech, Longwood University, Bridgewater College, West Virginia Institute of Technology traveled to RU to compete. RU’s λooρz team placed sixth out of the 16 teams competing at the RU site and 33rd in the Mid-Atlantic Region of 161 teams.

The 2009 regional competitions are expected to include tens of thousands of students from universities in approximately 90 countries on six continents for what is being called a “battle of the brains.”

One hundred regional champions will meet when the contest culminates Feb. 1-6 in Harbin, China. The best and brightest information technology students from around the globe will compete for awards, scholarships, prizes and bragging rights to the “world’s smartest trophy.”

The competition is sponsored by IBM and an IBM regional representative presided over the event at RU.

Many IT faculty, staff and students volunteered during the competition. IT professor Maung Htay served as the regional contest director. Kathy Anderson and Joe Gleason were regional systems team leaders. Kathy Anderson and Jordan Clark served as local systems team leaders. Alex Meade served as webmaster for the competition.

October Chalk Talks a Success, Students Encouraged to Participate

During October’s Chalk Talks, Ohene Amponsem, who is working with with Dr. Gary Cote’, discussed his research on the regulation of crystal producing cells in plant leaves.

Organized by biology faculty member Gary Cote’, the Chalk Talks series offers students an opportunity to talk about their research in front of peers and college faculty in an informal environment. This is the second year the College of Science and Technology is hosting this resource for students.

Any students interested in participating in Chalk Talks during the spring semester, should contact Gary Cote at gcote@radford.edu.
When archaeology professor Jake Fox looks across the Andes Mountains in Bolivia, he sees a civilization’s history to be discovered in the rolling mounds of earth scattered across the landscape. For more than nine years, Fox has been fascinated by the people and cultures of the Andes. His research focuses on the Formative Period, between 2000 BC and 200 AD. His archaeological investigations have shed light on how these early people adapted to life in the cold and arid environment of the Bolivian altiplano (literally, high plain), lying at 12,000 feet above sea level. Although the environment appears harsh and inhospitable, the highland Andes represents one of the world’s original “cradles” of agriculture. Formative Period sites in highland Bolivia are typically preserved as deep mounds of decayed adobe bricks, trash, and even cemeteries. Where some people see unremarkable mounds of dirt, dried brown grass and rocks, Fox sees more than two thousand years of preserved remains of ancient villages. By sifting through these layers and analyzing the artifacts recovered, Fox reconstructs the lives of these people and their transition from mobile hunters and gatherers to sedentary farmers. This shift in subsistence was made possible nearly 4000 years ago by the domestication of native species, including the llama, alpaca, guinea pig, potato, and quinoa, a starchy brown grass similar to wheat or barley.

“These mounds rise more than six meters above the ground and are comprised completely of stratified debris from human settlements. Some of the highest mounds contain from 1000 to 2000 years of accumulated adobe melt and prehistoric trash,” adds Fox. This summer, RU biological anthropologist Cassady Yoder traveled to Bolivia with Fox as a part of an RU SEED grant to add a new dimension to his research. In addition to the ancient adobe mounds, Yoder examined the collections of human remains that Fox and colleagues recovered in earlier excavations of the sizable cemeteries found in some of the mounds.

Using a makeshift field laboratory, Yoder determined the age and sex of the remains and looked for any signs of disease or indicators of nutritional stress such as anemia. She then collected bone samples from each skeleton for chemical analysis in order to obtain evidence of what these early Andean people were eating. This kind of analysis is possible because different types of foods leave characteristic chemical signatures in the skeleton.

“In my lab, I will be processing 20 bone samples from several different sites in Bolivia. My goal is to get a baseline indication of diet at these sites, including what types of plants and animals were the most important resources” says Yoder. This semester, undergraduate students Jessica Sosnicki and Christina Schoch will be assisting Yoder in analyzing the samples.

“There is no published research of this kind of bone chemistry analysis for this population in the Andes,” says Fox. “As an archaeologist, I can develop one story line with artifacts and Dr. Yoder can develop another with bone chemistry analysis. Using independent lines of evidence in this way, we can check our research against the other and come up with a much stronger model of what happened in the past.”

Fox and Yoder plan on using their findings from this preliminary work to write a grant proposal to fund long term research at these sites and some yet to be excavated. “This project will include some outstanding opportunities for RU students. They’ll be involved in reconstructing a complete picture of an ancient culture, one that in many ways is still here today in the region’s indigenous people – its direct descendents,” says Fox.
Rogers Undergraduate Research Award Deadline Draws Near

The 2010 Rogers Undergraduate Research Award will fund an outstanding student research project during the spring and summer of 2010 and completed during the 2010-2011 academic year.

“My wife Valerie and I decided to create the Rogers Undergraduate Research Award for CSAT students, because we highly value the culture of mentoring that permeates the college, and we have witnessed how student lives are transformed by working with faculty members on special projects, in the field and in the laboratory,” says CSAT dean Orion Rogers.

One award of $500 will be granted on a competitive basis by the CSAT scholarship and awards committee to a current sophomore or junior undergraduate student enrolled in the college. Applicants must be a full-time RU undergraduate student and must remain enrolled at RU through the completion of their project.

Working in collaboration with a CSAT faculty member, each award recipient will plan and implement a substantial and significant research project. The faculty sponsor will write a letter of support on behalf of the student’s proposal. The sponsor of the student who received the award will submit a narrative assessment of the student’s project upon its completion.

Applicants are encouraged to think creatively in designing their research projects. Proposals focusing on any of the degree programs in the CSAT will be considered. Proposals can integrate interdisciplinary approaches.

Application deadline for the Rogers Undergraduate Research Award for the College of Science and Technology is Dec. 4, 2009. For application materials or more information, contact Ann Brown at Abrown238@radford.edu.

Chemistry Professor and Student Work Together to Help Cancer Patients

Chemistry faculty member Kim Lane and her students, exercise, sport and health education major Robert Thomsen and biology major David Houff are researching a protein created by E. coli in the large intestine that interacts with the cancer drug CPT-11. This interaction results in severe side effects for cancer patients. CPT-11 is very effective, but is rarely used because patients normally need to be sedated during treatment due to the extreme side effects. Lane and her students are making mutations in the protein to learn more about its function. “The more we know about the protein,” says Lane, “the more we can do to create drugs against it.”

Lane thinks it is essential to introduce undergraduate students to research early in their college career. This gives them a chance to understand chemistry as a discipline and be able to include published research articles in their application for graduate and professional schools.

As a first generation college student from Franklin County, Va., Lane says that her supportive parents and teachers throughout her high school, college and graduate school experiences at Roanoke College and Duke University were integral to her success. At Radford, she is continuing this tradition by mentoring future generations of science and medical professionals.

Chemistry Faculty Member Presents at ACM Regional Meeting

On October 24, Chemistry faculty member Tim Fuhrer presented “Explanation of Cluster Motion in Y2C2@C92 using NMR and Computational Techniques” at the South East Regional Meeting of the American Chemical Society (SERMACS) in San Juan, Puerto Rico. He discussed a combination NMR spectral data analysis and ab initio calculations to explain the complex rotational and vibrational motion of the Y2C2 cluster in the Y2C2@C92 molecule.

CSAT Student News

Biology student Brandon Newmyer was recently awarded a VAS grant for his research proposal “Elucidating central mechanisms of NPAF may contribute to more efficient yields in both divisions of poultry production.”

Biology alumna Catherine Twimasi was recently accepted by Ross Medical School in Dominica. Recent CSAT alumni Jonathan Nogueira and Rob Buchanan were recently accepted into the Virginia College of Osteopathic Medicine.

On Nov. 8, chemistry major Rebecca Nightingale was inducted into Iota Sigma Pi, an Honor Society for Women in Chemistry. She was invited to join because of her excellent grades. “Many of us have enjoyed having Rebecca in classes, and it is great that she is being honored in this way,” says biology and chemistry department chair Joel Hagen.
CSAT STEM Club Spotlight: Activities and Upcoming Events

By Arielle Reynolds, STEM Club secretary

On October 27th, club members participated in the RU Scared event. We passed out candy, mummy wrapped the children with toilet paper, and had a trivia game set up. The children loved both events and the members who volunteered enjoyed interacting with the children and seeing them dressed up.

The CSAT STEM club took a day trip to the Science Museum of Western Virginia in Roanoke this past Saturday. For the past three meetings the club has been preparing for the food drive by making colorful boxes and posters. These have been placed in department offices within the college. We had to make a last minute change to the dates of the canned food drive. It will run from November 4-18. We are hoping each department will be able to collect at least 100 cans.

The club hosted guest speaker Dr. Russell DeYoung from NASA on Wednesday, November 11. More than 150 people attended the talk about some of the exciting discoveries NASA and other nations have recently made in understanding the unique characteristics of the individual planets as well as the search for life beyond our own planet.