In this edition of our newsletter, we are featuring stories about our students, faculty and alumni who are helping to enhance the learning environment within the RU College of Science and Technology. From unique experiences within the classroom to co-curricular clubs and organizations, RUCSAT is innovative and inclusive to the benefit of all involved.

In our last issue, we noted a few changes and asked for your thoughts via an online poll. We would still like to extend that request to you and ask that you let us know what you prefer. [http://www.surveymonkey.com/s/JS6GRZG](http://www.surveymonkey.com/s/JS6GRZG)

Orion

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Dr. Wei-Chi Yang, Professor of Mathematics at Radford University has been awarded the title “Professor honoris causa” by the rector of the Czech University of Life Sciences Prague.

Professor Honoris Causa (prof.h.c.) is an honorary title awarded for one’s outstanding scientific career and dedication to teaching within the recipient's field of study as well as contributions to the development of the recipient's discipline through research, publications, conferences and journals.

In addition to his service in the Department of Mathematics and Statistics at Radford University and the Czech University of Life Sciences Prague, Dr. Yang founded the Asian Technology Conference in Mathematics (ATCM) in 1995 and the *Electronic Journal of Mathematics and Technology* (eJMT) in 2007. Dr. Yang launched the printed version of eJMT, called the *Research Journal of Mathematics and Technology* (RJMT) in February of 2012.

Dr. Yang was nominated by the head of the Department of Systems Engineering at the Czech University of Life Sciences Prague, Professor Tomas Subrt, who notified Dr. Yang of the nomination by stating “Based on your global scope and respecting your excellent scientific work and achievements, (I) would like to nominate you to be awarded with the title ‘Professor honoris causa’ by the rector of the Czech University of Life Sciences Prague.”

The international reach of Dr. Yang's work is evident in his travel schedule which has in the last year alone included a talk “Discovering and Exploring Mathematics with Evolving Technological Tools’ at the Institute of India, Bombay; the presentation ‘Higher Dimensional Mean Value Theorem and its Applications’ at the Chinese Academy of Sciences delivered during a visit to Beijing Normal University; and the keynote address at the 17th Asian Technology Conference in Mathematics in Bangkok, Thailand.
RADFORD UNIVERSITY CHAPTER EARNNS NATIONAL AWARD FROM SIGMA GAMMA EPSILON

Melissa "Luna" Brett, newly elected 2013-2014 President of Epsilon Eta Chapter, acquired the film Chasing Ice, scheduled the showings, advertised the event, and actually presented the film at each showing.

The society of Sigma Gamma Epsilon, The National Honor Society for the Earth Sciences, has recognized the Epsilon Eta chapter at Radford University as one of the first recipients of the society's Chapter Service Award. Two events Epsilon Eta coordinated to earn this award were presentations of the film "Chasing Ice" and serving the University and community by working with the Day of Science program.

The Radford Epsilon Eta chapter has also been named as a Sigma Gamma Epsilon 2013 Quality Chapter.

For more information, please visit the following links:

http://www.sigmagammaepsilon.com

http://www.sigmagammaepsilon.com/index_files/Page556.htm
RACKSPACE VISIT TO RADFORD UNIVERSITY

On Tuesday, September 4, representatives from the Blacksburg office of Rackspace, the open cloud company, met with students, faculty and staff for classroom visits, a “Tech Talk” and job recruiting.

Three of the four full time “Rackers,” as Rackspace team members are known, were RU graduates: Alison Thomasson, Class of 2004, Steve Swenson, Class of 1997 and Alex Meade, Class of 2013. They were joined by Sam Wright, a current RU senior graduating in December, and Dave King, both of whom are also a part of the Rackspace team.

During their presentation, Steve and Alison touted some of the benefits of working at Rackspace including the “Rack gives back” program that encourages employees to participate in local charitable events. Rackspace frequently appears on national lists of “the best companies to work for,” most recently receiving recognition from Fortune Magazine and Business Insider.

For those who were more interested in an insider’s look at the way Rackspace operates, the team delivered a “Tech Talk” about problem solving and application launches within their company.

The visit concluded with a recruiting session for the company with current RU Information Technology students in Stuart Hall. Since most of the representatives present were Radford University alumni, the conversation was frequently familiar.

Joining the team for the event was Sam Wright, a senior who plans to graduate in December, who has been working with Rackspace for some time while completing his degree. Sam recalls “I had always heard Rackspace was the company to work for in the area in practically all my classes at Radford. I came to Rackspace through an information session held in Stuart Hall much like the one held on Wednesday, September 4.”

Following his introduction to Rackspace through the on-campus event, Sam submitted my resume and interviewed once or twice
resulting in an internship for the summer. He adds “after that I was offered an extension of my internship through Mid-December to help finish up the project I was working on as well as full time employment to start in the fall.”

Steven Swenson, a 1997 RU graduate, also shared his thoughts about his time on campus and his opportunity with Rackspace. He was drawn to RU by its beautiful campus and modern computer facilities available to undergrads. "Back in '88 when I started, RU had a lab with about 25 SUN microcomputers for the CS majors to use” Steven recalls. “That kind of equipment wasn't even available for grad students at VA Tech at the time.”

In addition to his CS major he also played in the concert band and worked with an all-digital 4-piece band. He later participated in a research project that built computer controlled home-automation into a handicap dorm room.

Following completion of his BA in Computer Science, Steven worked for Wachovia bank for ten years, then moved to Aceys, a small software company based in Charlotte. In February of 2012 he started with Rackspace, a cloud hosting provider, working in their Blacksburg office. “Rackspace really fosters innovation at every level” states Steven. “You see that in their involvement with open-source software projects and public events like hackathons.”

Another RU alumnus from the College of Science and Technology, Alex Meade, completed his degree in May 2012 and has been with Rackspace for several years with roles ranging from an internship to a full-time position. He recalls that his first day on the job was a little crazy. “Rackspace doesn't do internships like the ones you see on TV or hear about in the financial industry. I was thrown right into the fire with the rest of the team solving real problems and writing code. I was treated just like everyone else on the team and only got up to speed by working closely with other members of the team to finish tasks. I actually felt like I was contributing on day one, which I think is really rare.”

Alex really appreciates his colleagues within the company. “My favorite thing about working at Rackspace really is the people I get to work with. Not only does it make it easier to have intelligent conversations and get things done, but when you are surrounded by lots of motivated individuals there are always things going on such as lectures and workshops to help cultivate new skills in the office.”
FLIPPED CLASSROOM: TAKING THE RADFORD EXPERIENCE TO THE NEXT LEVEL

For many Radford University students and alumni, the Radford Experience can be boiled down to the attention from and interaction with faculty and staff to the benefit of all involved. This has traditionally been experienced in the academic setting where students find success with the support and direct participation of their faculty. Radford University Assistant Professor of Mathematics, Dr. Anthony Dove is taking the Radford Experience to the next level through his research and experimentation with a flipped classroom model for his students, which helps calm nerves and improves engaged learning resulting in rising test scores.

“In math over the last 20 years there has been a big push for reformed teaching” says Dr. Dove, who is in his second year at RU. “When one looks at the numbers of students with math anxiety, it is obvious that we cannot continue with the old model and need to find a way to help engage our students.”

Dr. Dove creates brief videos of the core material from his traditional class lectures and posts them online where his students can access them at their convenience outside of the class. “They can pause to gather their thoughts, rewind and review the material” says Dr. Dove “then in class we can spend time working on solving math problems using the concepts explained in the videos.”

By “flipping” or reversing the traditional class lecture/homework model, Dr. Dove finds that students better absorb the material presented on their own time and then can utilize class time working through problems rather than trying to solve them at home alone. “Students actually spend a lot of time helping each other, increasing their own aptitude.” Dr. Dove is able to spend his time in class working side by side with his students to assist their progress rather than being “on stage” presenting a lecture. His research is showing that this model may have a rather dramatic influence on math proficiency. “In a comparison between my traditional Math 111 students with in-class lectures vs. the flipped class, scores were about 8 points higher for those who took advantage of the videos at home and in-class hands-on work,” states Dr. Dove.

The results are still somewhat in their infancy and Dr. Dove plans more extensive research during the coming academic year, but already it appears to be an effective and efficient model for success. He adds “It really only takes a few minutes to create and post the videos, freeing my class time for direct interaction.”
Dr. Dove further enhances the classroom experience through the arrangement of seating into group “pods” encouraging participation and interaction among students rather than a traditional auditorium style layout. Students appear to feel comfortable seeking assistance from each other due to the open nature of the class.

Ultimately, the program works because teachers receive feedback almost instantly as to the students’ understanding of the material presented and can provide additional assistance or review some of the concepts introduced in the video. Students are also typically less frustrated because they have more assistance from faculty and their fellow students as they try to complete the assigned problems as opposed to trying to struggle through them alone during homework.

Since most of Dr. Dove’s students are elementary education majors who may teach math to their students following graduation, the flipped class method has potential benefits for generations to come as these future teachers will have less anxiety about their personal proficiency with math and could employ some of the same techniques they experienced. Having online videos of these lectures also helps parents who want to be engaged with their children but don’t always feel comfortable with their current knowledge base as their last math class was likely more than a decade ago.

The flipped class idea has proven popular among students who were surveyed following the semester with less than 5% of the participants stating that they would have preferred a traditional class lecture model. Dr. Dove’s research has resulted in an award for “Best Paper” at SITE 2013. He currently has multiple papers under review for publication in national journals and is pursuing grants to continue finding ways to improve teaching and learning in the flipped classroom. “The possibilities are endless as this material is out there not just for my students but the world” says Dr. Dove. We will continue to follow this story and report Dr. Dove’s findings in a future issue of the RU CSAT From the Dean’s Desk Newsletter.
Dr. Anthony “Tony” Curtis is new to RU this fall as a Full Time Temporary Instructor in the Department of Biology. Dr. Curtis earned his B.S. and M.S. in Biology from Virginia Commonwealth University in 1989 and 1991, respectively, and earned his Ph.D. in Ecology from Old Dominion University in 1996. His dissertation topic focused on nitrogen fixation in termites and termite nitrogen contributions to forest ecosystems. Dr. Curtis has published several papers in peer-reviewed scholarly science journals on various aspects of ecosystem ecology, biogeochemical cycling, and termite biology.

Prior to his arrival at Radford University, Dr. Curtis taught at Roanoke College, Randolph College, and Virginia Western Community College before accepting a full-time position at The Southwest Virginia Governor’s School in 2000. From 2003 to 2009, he was the Science Department Chair at North Cross School where he initiated and coordinated an annual science fair and developed an independent science research course offered to students in the upper school (9th – 12th graders). His students have placed in the Western Virginia Regional Science Fair, and have presented their work at the annual meetings of the Virginia Junior Academy of Science.

Dr. Curtis has also served as Chair of the Department of Applied Science and Mathematics while teaching at Bluefield State College located in Bluefield West Virginia.

Through his work with students on issues related to water quality, low impact development, and sustainable development, Dr. Curtis received the Virginia Soil and Water Conservation Teacher of the Year Award in 2005. In 2007 and 2008, He received two Climate Change Grants from the Earth Day Network to support a green campus at North Cross School. Dr. Curtis has served as an AP Environmental Science Exam reader with the College Board since 2008, and was nominated for the National Association of Biology Teacher’s Evolution Educator Award in 2009. He has held a Virginia Teacher’s License with an endorsement in biology since 2003, and has been a Certified Stream Monitor with Virginia Save Our Streams.

Dr. Curtis’ enthusiasm for engaging students by promoting an active learning classroom encourages students to be critical thinkers, to learn science as process, and to be informed citizens on issues of science and technology.
He joined Radford University in fall 2013 as special purpose faculty, and teaches eight sections of Environmental Biology (BIOL 103). As a part of the class, students are placed into groups and assigned a project focused on sustainable development. Together, the students identify an undeveloped parcel within a southwest Virginia community roughly 10-15 acres in size and implement a design that could be used to develop the property sustainably while protecting water quality through Low Impact Development and Best Management Practices.

To help ground this project in real world situations, Dr. Curtis is hosting guest speakers in class from local community and government agencies who will give students information about zoning regulations, water quality concerns, and Best Management Practices within their communities.

The groups for the project range from four to six members each and utilize a common but unique classroom tool possessed by most if not all students: cell phones. Dr. Curtis quickly realized that with 130 students to teach and manage, he would be challenged to meet the high level of interactivity that is the norm at Radford University. Through his journey as an education professional, he had discovered a program to help him in this process called “Learning Catalytics” that allows faculty to better communicate with their students through mobile devices. The program is available at a low cost, $12 per semester or $20 for a full academic year, and is easy for a professor to gauge feedback from a student.

Members of the class can be polled as to their level of understanding of a subject, their questions about an issue or even their mood that day. Responses can be made in the form of multiple choice answers, short essays or even illustrations if that is what works for the class. Dr. Curtis states that “the field potential for this program is tremendous. We could have the phones with us near a stream and students could be tasked with photographing and submitting photos of insects.” They could take the picture and submit it directly to their professor’s mobile device. “Rather than cell phones being a barrier to the education process, I can use them as an enhancement” he adds.

Dr. Curtis is evaluating the program for further use in his courses and is generally pleased in his findings stating “we’ve only scratched the surface with this technology.” We will have a follow-up with Dr. Curtis regarding the use of “Learning Catalytics” and with the results of his group projects in a future edition of the RU CSAT From the Dean’s Desk Newsletter.
CELESTIAL BODIES APPEAR A LITTLE CLOSER WITH THE FALL RE-OPENING OF THE SELU OBSERVATORY AND RU PLANETARIUM

After a summer hiatus, both the RU Planetarium and Selu Observatory are open to the University Community and the general public to educate and enlighten.

Located in what appears to be a grain silo, the Selu Observatory is actually far more sophisticated than appearances would lead one to think with a roof that opens and rotates to allow for the best views of the heavens through the 14.5" RCOS telescope.

On September 7, the first Friday of operation for fall 2013, the highlights of the show were great views of Saturn, Neptune and the Ring Nebula, even with a few clouds coming by from time to time. About a dozen people, made up of RU students, faculty, staff and local residents, were able to enjoy the observatory with the assistance of our fantastic student hosts, Alec Frasier and Jessi Basham. Operation of the Selu Observatory is coordinated by Dr. Jack Brockway.

The Selu Observatory is open to the public for viewing one half hour after sunset every CLEAR Friday. There is no charge for public night viewing and the Observatory is open to anyone wanting to attend. Sessions usually last about two hours, but may run longer or shorter depending on interest and sky conditions (if in doubt, check the forecast for an indication of what to expect). Many interesting objects can be seen throughout the year.

Directions to the Selu Observatory and more information can be found on their website.

Saturn, as viewed through the Selu Observatory telescope. Picture by Kirk Carter.

An image of the moon captured by the Selu Observatory camera.
On Saturday, September 8, the RU Planetarium located in Currie Hall began its fall season with the show “Future Moon”. Narrated by broadcasting legend, the late Walter Cronkite, the 22 minute program features highlights from the first Moon landing in 1969 and honors the Apollo astronauts who helped to fulfill that dream. “Future Moon” projects possible upcoming lunar missions, with an eye toward a potential 2020 landing. The Saturday shows begin at 10:30 am and are entertaining for the entire family with a focus on grades 2-8.

Throughout the rest of September, there will be additional shows on Tuesday and Thursday evenings at 7:30 pm with tours of the sky highlighting the stars and visible planets and where to find them along with other interesting celestial features. These programs are coordinated by Dr. Rhett Herman and facilitated by Department of Physics faculty and students.

The RU Planetarium was constructed as a teaching tool by members of the RU Community not long after the opening of Currie Hall.

A wonderful detailed history of this facility can be found on the planetarium website along with show information.
COLLEGE OF SCIENCE AND TECHNOLOGY
STUDENT ORGANIZATIONS

Fall 2013 is off to a roaring start for the CSAT student organizations. All were well represented on August 30 at Club Fair 2013, an RU tradition for the end of the first week of classes. In addition to pictures from the event, the College of Science and Technology recorded short video clips known as “vines” of each group mentioning their organization and what they do.
UPCOMING EVENTS

NOW HIRING: Software Developers

Multivision, Inc., an IT consulting firm in Northern Virginia, has designated Radford University as a Tier 1 University for recruiting and will be on-campus for an Information Session/TechTalk to recruit more Radford students to join the 8 Radford graduates hired in the past year alone.

Monday, September 16, 2013
Information Session: 11 – 11:50, Davis 151
Information Booth: 12:00 – 2:00, Stuart Lounge

[Pizza and drinks will be served]

- What you can expect to face when you begin your career search.
- What are the most in-demand technologies and which fields are the hottest in the IT industry.
- What is the most common interview question asked at all interviews and why everyone gets it wrong.
- The four main (and most important) components of a successful resume.
- Why hiring managers spend no more than 6 seconds reviewing resumes and what you must do to compel them to take a deeper look into your resume.
- The most common mistakes virtually every college graduate makes when starting their job search.

This is a rare opportunity to sit face-to-face with a COO and industry veteran to receive direct answers to your questions about employment in the IT industry.

Radford students graduating this school year will also receive an opportunity to interview for open positions at Multivision, Inc. Multivision, Inc. is anticipating hiring up to a dozen Radford graduates this year and is looking forward to reviewing your resume.

Multivision, Inc. will also conduct a 25-question multiple choice aptitude quiz.

Winner Receives a $100 Gift Certificate
Now Hiring!

CGI is a global IT consulting company consisting of more than 69,000 professional worldwide.
Come grow with us!

Information Session:
Wednesday, September 18, 2013
11:00 – 11:50 am, Davis 151

Information Booth:
Wednesday, September 18, 2013
12:00 – 1:00 pm, Stuart Lounge

Experience Business Casually:
Friday, September 20, 2013
COBE Multipurpose Room
*CGI will be doing resume review*

On Campus Interviews:
Tuesday, October 8, 2013
COBE

Fall Career and Internship Fair:
Wednesday, October 23, 2013
COBE

Open Positions:
Entry Level Applications Developers - Entry Level Business Analysts - Internships

Contact Info: Fawn Price | 276-889-7817 | fawn.price@cgifederal.com

Radford University Students are invited to participate in a virtual career fair.

September 24, 2013 from 2-8pm at www.ICVirtualFair.com

LEARN ABOUT INTELLIGENCE COMMUNITY OPPORTUNITIES FOR STUDENTS ONLINE

The United States Intelligence Community (IC), an integrated network of agencies that work together to protect our nation's security, has internship and scholarship opportunities for students. Join us at the IC Student Programs Virtual Fair to see how you can participate.

Internship and co-operative education opportunities are available for undergraduate and graduate students majoring in the following areas:

- Accounting and Finance
- Business Administration
- Chemistry
- Computer Science
- Data Science
- Economics
- Engineering (Computer, Electrical, Mechanical and Power)
- Environmental Science
- Foreign Languages
- Geology
- Information Assurance
- Intelligence/National Security Studies
- International Affairs
- Mathematics
- Operations Research
- Physics
- Political Science

Scholarships are available for students studying chemistry, computer science, computer or electrical engineering, foreign languages, geology, international affairs, intelligence/national security studies, and political science.*

The following IC agencies will be participating in the fair:

- Central Intelligence Agency (CIA)
- Defense Intelligence Agency (DIA)
- Federal Bureau of Investigation (FBI)
- National Geospatial-Intelligence Agency (NGA)
- National Security Agency (NSA)

Use your computer or mobile device to:

- Visit IC agencies' virtual booths to learn about internships and scholarships
- Attend live presentations
- Link to agency websites and online application systems

*This list is not meant to be all inclusive and similar majors will be considered. Not all participating IC agencies have opportunities in all listed majors.

U.S. citizenship is required

The United States Intelligence Community is an Equal Opportunity Employer and a Drug-Free Workplace
RU CSAT LAUNCHES ADDITIONAL MEDIA FEEDS

The College of Science and Technology has established three additional channels of communication online. The twitter feed can be found at https://twitter.com/RUCSAT, RU CSAT Instagram is http://instagram.com/rucsat. The vines, or short six second videos can be loaded via the vine app or can be viewed via twitter.

We hope that these new forms of social media will help to spread the word about the great activities within the College of Science and Technology.

Be sure to get the latest news by bookmarking our webpage: www.radford.edu/csat and by liking our Facebook page: www.facebook.com/RadfordUniversityCSAT.