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Ogden College of Science & Engineering Newsletter (Spring 2014)

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*Ogden College of Science & Engineering*

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Ogden College News

OCSE ASSISTS AT CORVETTE MUSEUM SINKHOLE

When a sinkhole opened Feb. 12 in the National Corvette Museum’s Skydome area, faculty, staff and students from WKU’s Department of Geography & Geology and WKU’s Department of Engineering responded to the scene to assess the damage and provide their expertise. Drs. Leslie North and Jason Polk from Geology & Geography went to the scene as well as Engineering Professor Matthew Dettman.

The Engineering Department’s remote-controlled quadrotor was used to provide video from inside the sinkhole that swallowed eight cars. The quadrotor is a four-rotor flying machine carrying a camera. Ogden Research Scholars and FUSE Grant recipients Zachary Lancaster and Darren Tinker along with Jesse Reesor and William Johnson operated the quadrotor which shot footage from inside the massive hole. This footage has been viewed worldwide.

OGDEN COLLEGE HOSTS SINKHOLE SYMPOSIUM

Ogden College hosted a “Sinkhole Symposium” on Wednesday, March 19th from 7 to 8 PM at Snell Hall. The symposium highlighted WKU’s presence at the sinkhole from day one of the event and offered a Q and A session after the presentations. Engineering practices and sinkhole repairs were addressed along with similar major sinkhole events that have occurred in other parts of the world. Presenters at the symposium included:

Dr. Leslie North, Dr. Michael May and Dr. Jason Polk—Geography & Geology
Dr. Shane Palmquist, Matt Dettman and Joel Lenoir—Engineering

Darren Tinker, Zachary Lancaster (Ogden Research Scholars, FUSE grant award recipients) along with Jesse Reesor and William Johnson offered the audience members a demonstration of the quadrotor device described above.
DR. NANCY RICE HONORED WITH FIRST W.I.S.E. AWARD

Dr. Nancy Rice, an Associate Professor in the Department of Biology, was recognized as Ogden College of Science & Engineering’s first ever Women In Science and Engineering Award winner. Ogden College Dean Cheryl Stevens presented Dr. Rice with this honor during the Spring Opening Meeting held at Snell Hall.

Dr. Rice earned her PhD in Biochemistry at the University of Tennessee in 1999 and joined WKU as an Assistant Professor in 2003 after postdoctoral experiences at the University of Tokyo and the University of Colorado at Boulder. Nancy’s teaching, scholarship and service are tightly integrated with focus on student engagement, primarily in the biomedical sciences as applied and investigative learning experiences that encourage critical thinking, social responsibility and global competency. She teaches a broad range of courses from Introductory Biology for non-majors to Masters level courses. Her research is biomedical in nature and has focused on using molecular and cellular techniques to investigate the genetic and cellular mechanisms responsible for debilitating diseases.

Her service has been selfless as she has served her department and the University in many capacities. Nancy’s most extensive and high impact public service involves Partners In Caring, a medicine in Kenya program which allows pre-professional students to work in a medical service-learning exchange between Kenya and US physicians in an international medical context. It is targeted at stimulating global health awareness in WKU’s pre-professional students. Through this program, fifteen students and three physician volunteers provide medical care to villagers living in the impoverished area of Kasigau, Kenya.

WKU—OWENSBORO RESEARCHER TESTING BASIL AS CANCER TREATMENT

Plants that may help fight breast cancer are sprouting and taking root in a WKU biology faculty member’s laboratory at the Owensboro Centre for Business and Research.

Dr. Chandra Emani, assistant professor of plant molecular biology at WKU-Owensboro, is conducting research on the pharmaceutical and therapeutic benefits of the basil plant (ocimum sp.), the herb widely known for its medicinal and culinary uses.

“If you look at the east, they’ve been using the plant not exactly as a medication but a supplement for a lot of treatments,” he said. “Basil is a plant which has a lot of compounds called metabolites, meaning the leaves of a basic basil plant, like any other plant, make a lot of stuff.”

In his lab at the Owensboro facility, Dr. Emani and his students are genetically engineering the basil to produce more eugenol, a compound in basil that “has a very great pharmaceutical value because it’s shown to control breast cancer.”

Through his research at the Owensboro center, Dr. Emani is continuing to build the proof of concept that basil could produce a useful plant-based pharmaceutical to treat breast cancer.

Thompson Complex North Wing Closes

Former faculty and staff, alumni and current faculty and staff gathered to say good-bye to Thompson Complex North Wing at a reception held on January 23rd. Thompson Complex North Wing had a profound impact on thousands of students and faculty over the years so aptly the closing was called “The End of An Era.” It has been a long time coming, and it is all part of a strategic plan for students in WKU’s Ogden College of Science and Engineering.

Former student Dr. Wayne Bush was among the attendees. “That’s kind of a sentimental place for anyone that was a bio chem major at that time, which I was.” The former inside linebacker for the WKU football team spent the bulk of his college career in the building. “About 85% of my classes were in Thompson Complex, so yeah, I spent a lot of time going up and down the hill.” Bush lived in the short side of Keen Hall, the farthest point from Thompson Complex North Wing and this was long before shuttle service was available.

“In retrospect, that was a good thing for me, playing ball. It helped me stay in shape that much more.”

Dr. Bush also fondly recalled his parents doing post graduate work in the North Wing. “I spent a lot of days running up and down the steps of Thompson and playing on the rails, picnic lunches under the tree, a lot of good memories.”

Biology students are adjusting to new surroundings this semester after the North Wing closed. Labs and classes have been relocated to Snell Hall which opened four years ago with state of the art equipment.

The final piece of the puzzle for Ogden College of Science and Engineering is the renovation of Thompson Complex Central Wing. That will provide additional lab space and much needed office space when state funding becomes available.

“That’s kind of a sentimental place for anyone that was a bio/chem major at that time, which I was. About 85% of my classes were in Thompson Complex.”

- Story by Amy Bingham, View From the Hill
I-POD POWERED SCARECROWS COULD HELP PROTECT CROPS

WKU researchers are developing “high-tech scarecrows” to reduce crop damage in South Africa. From left in this photo on the Balule Nature Reserve are Mark Cambron, Department of Engineering; Molly DuVall, graduate student; Bruce Schulte, Department of Biology; Michael Stokes, Department of Biology; Shilo Felton, graduate student. When your life depends on the survival of the crops in your garden, as it does for many subsistence farmers across the world, one raid from the animal kingdom can be a serious setback, so solutions for mitigating these human-wildlife conflicts can end up having a huge positive impact on the livelihoods of the world’s most vulnerable farmers. A group of scientists from WKU, along with collaborators in Africa, are working on a potential solution for keeping wild animals from wreaking havoc on crops and fields by combining the age-old remedy of using a scarecrow to warn off wildlife with a high-tech component – an iPod.

NSF GRANT WILL FUND STEM SCHOLARSHIPS AT WKU

WKU will use a grant from the National Science Foundation to fund a five-year scholarship program in the STEM (science, technology, engineering and math) disciplines. The $616,669 grant will fund the Biotechnology S-STEM Program, which will provide scholarships to 20 students with majors in agriculture, biology, biochemistry, chemistry, computer science or math and an interest in biotechnology.

“The S-STEM program at WKU will enable us to provide significant financial support to academically talented students who are interested in a career in the STEM disciplines,” said Kevin Williams, an associate professor of chemistry and one of the grant’s principal investigators. “The financial support combined with the opportunities to engage in research, internship, and targeted professional development should promote better student retention and greater likelihood for success after graduation.”

Students will be selected based on a combination of academic potential, financial need and statements of career goals. Evaluations and student interviews will help improve the program each year and enable WKU to adapt new strategies for recruiting and retaining students, especially in the STEM disciplines.

Other principal investigators include Audra Jennings in the Office of Scholar Development, Cathleen Webb in Chemistry and Shivendra Sahi in Biology.

2014 Posters At The Capitol

Eighteen WKU students presented their research at the 2014 Posters-at-the-Capitol event Feb. 27 in Frankfort.

Tori Buckley, a Gatton Academy senior, presented Molecular Level Interaction of an Aminoglycoside Antibiotic with Human Fibroblast Growth Factor 1.

Fenil Chavda, a Gatton Academy senior, presented Green Synthesis, Characterization of Sugar Coated Gold Nanoparticles for Catalytic Applications.

Ashlan Clark, a Bloomfield senior, presented Risks of Nocturnal Tornadoes in the Mid-South.

John Cliburn, a Gatton Academy senior, presented Applications of the Banach Fixed-Point Therorem.

Amy Correll, a Somerset senior, presented International Health and Aging: Observations and Analysis of Elderly Care in Migori, Kenya.

Maggie Day, a senior from Columbus, Ind., and Angela Calvo, a senior from Henderson, Tenn., presented Serving the Underserved.

Ajit Deshpande, a Gatton Academy senior, presented Comparison of Antimicrobial Effects between Biologically and Chemically Synthesized Silver Nanoparticles.

Samantha Dinga, a Gatton Academy senior, presented The Effect of Inversion on Adult Attention Disengagement from Faces.

Caitlin Gover, a Bowling Green senior, presented Analysis of House Bill One the “Pill Mill Bill.”

William R. Hamilton, a Cerulean sophomore, presented Designing a Unique Therapeutic Agent Involving Gold Nanoparticles Capped with Certazidine from Potent Antibacterial Applications.

Suhaib Mahmood, a Gatton Academy junior, presented The Unorthodox Reaction Rates of Anti-Cancer Familial Platinum Compounds with Medthio-nine and Guanosine Monophosphate.


Keisha Ray, a Bowling Green senior; Carlet Hagan, a Smiths Grove senior; and Gabrielle Manny, a Bowling Green graduate student, presented Sustainability and Collegiate Recreational Sports Facilities.

Hannah Rodgers, a Gatton Academy senior from, presented Single Step, Antibiotic Mediated Synthesis of Gold Nanoparticles with Potent Antimicrobial Activity.

Connor VanMeter, a Gatton Academy junior, presented Functional Characterization of Newly Identified Antiterminal RNAs.

In its 13th year, Posters-at-the-Capitol is intended to help Kentucky government officials to better understand the importance of undergraduate research.
Dr. Farhad Ashrafzadeh has been named the Greulich Chair of Energy Systems at WKU.

Dr. Ashrafzadeh joined the Electrical Engineering Program in the Department of Engineering at WKU in 2012. His academic career follows 15 years of experience at the Whirlpool Research and Development Center in Benton Harbor, Mich., where he served as an electrical motor drive and power electronics specialist. He has extensive experience in the design, development and commercialization of highly reliable and cost-effective power electronics and motor drives for energy-efficient appliances.

Dr. Ashrafzadeh holds 65 patents. His research interests include renewable energy conversion and advanced electrical drives for various applications, including the smart grid, hybrid vehicles and appliances.

The focus of the Greulich Energy Systems Lab will be the challenges and opportunities in modern appliances. Appliances provide interesting applications for research in advanced control and drive techniques, as well as novel but familiar examples for innovative educational materials illustrating basic science and engineering topics.

The Greulich Endowed Chair in Energy Systems was created in 2008 by Don and Jennifer Greulich, who met when they were both WKU students. Don Greulich is president of Kerr Greulich Engineers Inc. in Louisville, which provides building systems engineering and design throughout the United States.

Ogden College, in partnership with the Center For Career and Professional Development, held a Career Fair on February 27, 2014. Companies such as General Motors, Sumitomo, Fruit of the Loom and BGMU were on hand to discuss employment opportunities with WKU students. Attendees were encouraged to dress professionally and to bring their resumes.

Congratulations to the
2014 Ogden Faculty Award Winners

Steve Huskey, Biology
Award For Student Advisement

Rezaul Mahmood, Geography & Geology
Award For Research/Creativity

Bryan Reaka, Architectural & Manufacturing Sciences
Award For Public Service

Summer Bateiha, Mathematics
Award For Teaching
Mathematics

Dr. Kessler, along with Drs. Gelderman, Gott and Lebedinsky, were honored as this week’s WBKO Hometown Heroes.

The four doctors dedicated their time to help students of the BRIDGES program learn about Math and Science. The BRIDGES program emphasizes core content along with higher order thinking skills for kids according to Judy Glass, Curriculum Consultant of Bowling Green City Schools.

Dr. Bruce Kessler stated, “We somehow lose the battle of mathematics with students as they get older. The idea that I have is just that the firmer we can plant that notion that math is doable and it’s fun into their brains as young kids, the better chance I hope that they hold onto that as they get older.”

The BRIDGES program is grateful to have the assistance. Ms. Glass added, “Rarely do you see professors from the university teaching primary children, and I think they had just as much fun as the kids did. They were just excellent classroom teachers and we’ve benefited greatly from having them.”

Congratulations, Drs. Kessler, Gelderman, Gott and Lebedinsky, for being chosen as WBKO Hometown Heroes!

Psychological Sciences

With the help of Dr. Elizabeth Shoenfelt, WKU Psychological Sciences Professor, Olympic gold medalist Claire Donahue developed mental skills that carried her through the Olympics. These same skills will benefit Claire during all phases of her life to come. The Association for Applied Sport Psychology submitted an article to the NCAA describing the techniques Dr. Shoenfelt used to give Claire the mental edge she needed to succeed. For entire article from the NCAA Sport Science Institute Newsletter, volume 2, issue 2 please click the link below.


Photo credit courtesy of Western Kentucky University
Agriculture

WKU FLORAL DOES VALENTINE’S DAY WITH FLAIR

The Floral Shop was extremely busy in the days leading up to Valentine’s day this year. Roger Dennis (above left) places a centerpiece created by the floral design team on a table for the Symphony Soiree. A full service florist, WKU Floral can handle all floral needs. Call 745-3382 for more details.

DR. DAVID M. COFFEY

Dr. David McMillian Coffey, intrepid traveler, explorer, and beloved professor, departed on the Great Adventure March 20th, 2014, after a very brief illness. Born February 17th, 1950, to J.D. and Lois Coffey, he spent his formative years on a farm in Cumberland County, near Burkesville, Kentucky.

He was the first 4-H exchange student in Indonesia. He received his BS and MA from Western Kentucky University and his Ed.D in Vocational Technical Education from Virginia Tech in 1978.

His accomplishments were multiple and varied. His passion was using every moment to teach in and out of the class room. His popular rural sociology classes were legendary, resulting in WKU Teacher of the Year awards. His curriculum for “Animal Rights/Animal Welfare” was used nationwide. “Ag in the Classroom” curriculum became a model for many states. David was the WKU faculty member in charge of the Institute for Future Agricultural Leaders for many years. Because of David’s outstanding record in student advisement, he was the first director of the WKU Office of Undergraduate Advisement. He later served as director of WKU Educational Enhancement Programs, TriO, and Student Disability Services. He also served on the Kentucky FFA Foundation, was a member of the national FFA Board of Directors, and received the national FFA HO

Sargent Award for Diversity.

Hundreds of students and faculty were transformed by visits with David to Costa Rica, Argentina, Australia, and, especially, Ecuador. David traversed Ecuador at least 27 times. An avid adventurer, David, along with a spirited entourage, journeyed the globe, visiting most countries of the world.

David touched those around him with loving-kindness. His great compassion and sharp wit endeared him to people across many continents. Contributions in memory of him can be made to the Dr. David Coffey Scholarship Fund, c/o College Heights Foundation, 1906 College Heights Boulevard 41016, Bowling Green, Kentucky 42101. We are continuing to bask in the great karma we have received and are so appreciative.

Rest in peace, David. We will miss you and never forget you.

FORAGE CROP EXPERTS VISIT WKU

On February 21 the authors of Southern Forages visited WKU and the Agriculture Department. Two of the authors, Drs. Don Ball and Garry Lacefield, are native Kentuckians and members of the WKU Hall of Distinguished Alumni. The third author, Dr. Carl Hoveland, is a native of Wisconsin and has had a distinguished career in forage research at both Auburn University in Alabama and the University of Georgia. Internationally known experts in the field, these scientists have been the leading authorities on forage crops for many years.

The seminar they presented to students, faculty, staff and alumni was titled “Ten Keys to Profitable Forage Production.” In addition, Drs. Ball, Lacefield and Hoveland visited the WKU Owsley Alumni Library to donate a signed copy of their Spanish translation of Southern Forages, Forrajes de Las Americas. It was a distinct honor to have all of the authors of Southern Forages visit the WKU Ag Department.
Over spring break WKU electrical engineers competed in Lexington at the IEEE Southeastcon. Out of 42 teams in a hardware competition focused on basketball—autonomous robotic HORSE specifically—WKU placed 7th.

On February 22 WKU’s TauBetaPi engineering honor society put on the 14th Annual Kentucky Bluegrass regional robotics competition for students in middle and elementary schools (photo above left). Held at Drakes Creek Middle School, this year saw 91 students from 32 teams. Teams from Briarwood Elementary and Cub Run elementary won the contest.

Civil engineering, Architectural Sciences and SKyTeach colleagues helped with the 19th Annual Balsa Wood Bridge Building competition. The Center for Research & Development hosted the event.

The first round of a Lighter Than Air robotics competition for mechanical engineers will take place on Thursday, April 3. The students will be simulating delivering water to a remote forest fire... using blimps. The final round of the competition will occur during the Engineering Expo on May 14.

**NEWS AND NOTES**

Charles Drummond, Architectural Sciences, has been accepted to Savannah College of Arts and Design to pursue his Master of Architecture degree. He has received several scholarships and will be attending this spring.

Kyle Spurgeon, a recent Architectural Science graduate, has just passed his LEED AP with BD+C concentration. He is employed by Dant Clayton in Louisville, KY.

**2014 WKU STUDENT RESEARCH CONFERENCE AMS WINNERS**

| Paper Session I—Clay Larkin | Creating a Healthy Space for a Healthier Community |
| Paper Session II—Emmy Pierson | The Relationship Between Athletics & Architecture |
| Poster Session II—Bright Adu | Advancing the Process of Cost Control for Construction Projects |
| Poster Session II—Adam Wilck | Safety & Sustainability: Franklin Fire Station Seven |
| Poster Session II—Collin Southwood | The New WKU Science & Research Institute: An Expression of Science |
| Poster Session II—Anthony Ford | Sustained Energy Reductions in Buildings Through Informed Consumer Decision Making |
| Poster Session II—Andrew Todd Shelburne | Look Good, Plan Good, Design Well |
| Poster Session II—Omar Ramadan | The Effects of Using Social Media Tools in Project Management |
WKU’s Department of Geography and Geology has been awarded a MOVE software grant for software valued at $3.7 million from Midland Valley Exploration Ltd., Glasgow, U.K. to support Assistant Professor of Geology Dr. Nahid Gani’s tectonics and structural geology research and teaching.

This software donation includes MOVE suites of analytical geological software with support and maintenance, which is the most complete and comprehensive geological industry standard structural modeling software.

The newly acquired software is housed in the Landscape Geo-dynamics Lab in the Department of Geography and Geology, which is equipped with state-of-the-art facilities including dual monitor high-end PCs, thermo-chronologic and satellite image-processing software, a high-resolution mineral picking scope, and much more.

This noteworthy grant provides geoscience faculty and students an exposure to top-of-the-line methods and tools available in geoscience data modeling, validation and uncertainty quantification.

“Cutting-edge software applications are crucial in the geosciences for training students to be competitive for professional opportunities,” said Geography and Geology Department Head David Keeling. “With technology changing at such a rapid pace, it is critical that faculty and students have access to the most up-to-date software to conduct research that can help to address society’s most pressing challenges.”

Victoria Hampton, a junior meteorology major, has been awarded a paid internship with the 2014 NASA Student Airborne Research Program (SARP 2014). Hampton was one of 32 students selected from universities nationwide to participate in SARP.

The purpose of SARP is to provide students with hands-on research experience in all aspects of a major scientific campaign.

“These opportunities are very competitive nationally,” said Dr. David Keeling, Department Head. “Our meteorology faculty are developing a reputation for producing exceptional students who can perform at the very highest level across the country. This speaks highly of WKU’s meteorology program and of the faculty and students who have built the program to become one of the best in the U.S.”

Department of Geography & Geology staff member and graduate student Jonathan Oglesby returned to Niger, West Africa, this month to continue his thesis research with the Songhai people. Oglesby is working with his advisor, Dr. Leslie North, to develop visual communication materials to enhance water literacy concepts for ethnic groups in rural West Africa. The March 2014 trip was Oglesby’s fourth to the region and focused on the testing of pictograms in low language and low water literacy areas of rural Niger. A pictogram is a unique type of visual communication that incorporates simplistic diagrams and imagery in an effort to improve understanding and recall of concepts. Pictograms developed for this research focus on point and non-point source pollution, sanitation and hygiene protocols, and point-of-use treatment techniques. Oglesby will return this summer to continue his work.
For the past year, Hardin Planetarium has emphasized the production of new interactive shows that directly engage the audience. In most of our shows the audience gets up to interact with the staff and each other by participating in kinesthetic astronomy activities. Now, every show given includes questions scattered throughout the presentation to prompt responses from our audience. Sometimes a question is inserted to provide us with feedback about the audience’s interests, while other questions might focus on the audience’s conceptions or misconceptions of the subject being discussed. Clickers (radio-frequency audience response polling systems) featured in "2012 Doomsday: Predicting An End, Or Just A Cycle?" allowed each audience to directly shape the outcome of that day’s show, according to their collective feedback. This was a very promising approach, but will require a substantial investment for clicker hardware if it were to become a permanent addition to the repertoire.

"Star Stories" is the name given to the new, participatory approach to the standard constellation identification show. The audience works in groups to identify their own interpretation of the shape they see within a star pattern and then creates a personal mythology for this shape. Just as our ancestors identified shapes within the thousands of stars in the night sky, audience members seem to truly enjoy coming up with creative names and stories for the star patterns. The "Star Stories" format has completely replaced the standard constellation identification from the seasonal star show, and has been attracting capacity crowds of local families who praise the show’s participatory nature. This innovative approach was presented at the national 2013 Live Interactive Planetarium Symposium in Florida last August. A study is planned to measure how this personal meaning helps people learn the pattern recognition needed to identify constellations when they leave the planetarium.

### SCI CAMP FOR ELEMENTARY AGE EXPLORERS

Science, Curiosity, Investigation (SCI) camps at Hardin Planetarium provide young scientists with a place to stretch their minds and bodies during their fall and spring breaks. From 8am to noon, students grade 3 to 6 engage in fun, interactive investigations to stimulate curiosity, encourage cooperative discovery and problem solving. Space is limited to twenty campers on a first come, first served basis. Register online at wku.edu/hardinplanetarium. Registration fee is $120 and includes all materials. During the Warren County and Bowling Green school systems’ 2014 spring break, March 31 to April 4, Hardin Planetarium will host a SCI Camp with the theme: "The Nature of Time."
Biology

Congratulations to Chad Coomer. Chad has officially been accepted into the NIH Oxford-Cambridge Scholars Program. The award will allow him to pursue a D. Phil at Oxford while researching HIV at Oxford and the NIH. The program provides a stipend and covers tuition, fees, travel and health insurance for up to four years. Additionally, Chad received a Fulbright to the UK (also to study HIV but at UCL).

Larry Elliott, retired Biology faculty member, released his latest book titled *Microorganisms In The Bible*. There will be a book signing April 6th from 2:00 to 4:00 PM at the First Baptist Church and another signing at the Book Fest held in the Knicely Conference Center April 26th. Microbiology Laboratory Coordinator/Instructor John M. Clauson was one of Dr. Elliott’s graduate students and spent much of the summer reviewing and illustrating the entire content.


Chemistry

**DR. PAN ACCEPTS CONFUCIOUS INSTITUTE OF THE YEAR AWARD**

Dr. Wei-Ping Pan, pictured at right, accepted the Confucius Institute of the Year Award on behalf of the Confucious Institute at WKU during the 8th Global Confucius Institute Conference in Beijing. Dr. Pan, Emeritus Professor of Chemistry, is the WKU Confucious Institute Director.

**DEPARTMENT OF CHEMISTRY HOSTS VISITING KOREAN SCIENTIST**

The Department of Chemistry recently hosted visiting Korean Scientist Dr. Yong-Il Lee from Changwon National University. Dr. Lee is the Dean of the College of Natural Science and Dean of the Graduate School of Public Health. He is also the Chair of the Analytical Division of the Korean Academy of Sciences and on their Board of Trustees. Dr. Lee is working on collaborations with WKU Chemistry professors Dr. Eric Conte and Dr. Moon Soo Kim.

**CHEMISTRY IN ART WORKSHOP**

Kevin Williams (Department of Chemistry) and Brent Oglesbee (Art Department Head) attended the Chemistry in Art Mini-workshop at Clark Atlanta University in Atlanta, GA from March 7-9. The workshop was sponsored by the National Science Foundation as part of the Chemistry Collaborations, Workshops and Communities of Scholars (CCWCS) series and was led by Dr. Anne Gaquere-Parker of the University of West Georgia and Dr. Mike Haaf of Ithaca College. The workshop combined mini-lectures connecting art and chemistry with hands-on laboratory experiments and demonstrations on light and color, dyes and pigments, frescoes and other topics involving an overlap of the disciplines. The two departments will work together in the coming months to create a Colonnade “Connections” course that blends the disciplines of art and chemistry into a course that is accessible to a variety of majors.