Fishheads Transform Biology Program

Dr. Pamela Davey Huggins’ group of nine research students (informally dubbed the Fishheads), with the assistance of lab manager Karen Grubb, is in the process of transforming the third and fourth floors of Hunt Haught Hall with professional quality live animal exhibits. The purpose of these exhibits is threefold: to enhance the current biology curriculum, to encourage both class-related and independent student research, and to serve as a recruitment tool for the biology program.

Dr. Huggins’ research students themselves have gained valuable experience in budget writing, exhibit design, and construction. In January the Fishheads traveled to the National Aquarium in Baltimore, MD, for a special behind-the-scenes technical tour and returned with numerous design ideas, useful professional contacts, and the remnants of a lobster named Bob. (It’s a long story.) Plans are being made for a joint field trip to the mid-Atlantic coast with Dr. Don Trisel this spring. Current and proposed exhibits include an Indo-Pacific coral reef community, Lake Malawi freshwater community, Chesapeake Bay salt marsh community, West Virginia stream communities (both pristine and polluted), desert community, and species-specific exhibits of tree frogs, mudskippers, and snakes. Exhibit progress and updates will be available on a special Fairmont State Fishheads webpage. The webpage can be accessed from the biology program page, at http://www.fairmontstate.edu/academics/BiologyProgram.

Science Education Partners with NASA IV&V Facility

The College of Science and Technology at Fairmont State has received two major grants from the NASA Independent Verification and Validation (IV&V) Center. The grants will be used to help carry out NASA’s mission of educating the public. The NASA IV&V facility is contracting with Fairmont State to staff and operate both the Educator Resource Center (ERC) and the Student Outreach Center (SOC). The ERC provides support for teachers and homeschool parents, while the SOC provides services for students in grades K-16. The education specialists at the two centers have Temporary Assistant Professor status at Fairmont State and report to Dr. Deb Hemler, coordinator of Geoscience Education in the Department of Biology, Chemistry and Geoscience. Hemler negotiated the contract for Fairmont State with Ned [Nelson] Keeler, the former director of NASA IV&V facility. The centers make a visual outreach to the community for the IV&V facility.

The ERC grant was funded in November 2005 for $520,117 over the next 3 years. The grant supports two full-time science education staff members, travel and supplies for the ERC staff, and free workshops for teachers, some with option for college graduate credit through FS. The staff members are Cynthia Keeling, Program Manager, who handles elementary education, and Todd Ensign, Education and Technology Specialist, who handles secondary education issues for the NASA IV&V Educator Resource Center.

Events organized through the ERC include Teacher Thursdays, during which teachers can gather at the center and interact with scientists all over the country via downlinks. For example, teachers linked with the Carnegie Science Museum on Dec. 3, 2005, for a dinosaur workshop. Teachers using dinosaur kits located at the ERC were “present” with scientists using a microscope and macroscope via a live link to the Carnegie Science Museum. All pre-service science teachers from Fairmont State visit the ERC at least once and do a workshop there during the science methods class (elementary and secondary). Alicia Crites, a secondary Continued on page 6
Former Dean Named Vice President

Dr. Phil Mason, former Dean of the College of Science and Technology, was named in December 2005 as the Vice President for Research and Graduate Studies for Fairmont State. Dr. Mason held an interim appointment in the position beginning August 2005 when the former Vice President for Research and Contracts, Dr. Karl Burgher, was tapped as President at the University of Maine at Presque Isle.

Dr. Mason joined Fairmont State in 1998 as chair of the School of Science and Math, and became dean of the College of Science and Technology upon its creation in 2003 from the merger of the School of Science and Math and the School of Technology. Dr. Mason’s calm demeanor and emphasis on professionalism and positive thinking were instrumental in guiding the faculty successfully through a period of significant growth and reorganization.

Interim Administrative Team

A national search for a new Dean of the College of Science and Technology will commence in early fall of 2006. Dr. Steve Roof, Professor of Biology and Chair of the Department of Biology, Chemistry and Geoscience, has been serving as the Interim Dean since August 2005. Serving as Interim Chair of the Department of Biology, Chemistry and Geoscience is Dr. Erica Harvey, Professor of Chemistry.

New Faculty

Jim Weekley

The chemistry program welcomed Jim Weekley as Instructor of Chemistry in August 2005 after a national search the previous spring. Jim serves as the general chemistry lab coordinator and is in charge of coordinating instrument maintenance for the chemistry program. In his first year, he has taught Chemical Principles lab sections, Introduction to Chemistry, and is developing a microscopy course for the forensic science program. Jim was born in Clarksburg, WV, on Nov. 21, 1968, and grew up on a farm in Doddridge County. He graduated from Doddridge County High School in 1987, at which time he joined the U.S. Navy. He served in the U.S. Navy for eight years. After completing his Navy obligation, he attended Fairmont State College, receiving his B.S. in chemistry in 2000. He then attended the University of Kentucky where he earned his M.S. in Pharmaceutical Science. Jim taught physical science at Lafayette High School in Lexington, KY, for a year before coming to Fairmont State.

What have you learned while teaching at Fairmont State? That it is possible to love coming to work each day and truly enjoy your job.

E-mail Address: jweekley@fairmontstate.edu

TOM REPINE

Tom Repine is living an interesting double life, teaching half-time as Temporary Assistant Professor of Geoscience at Fairmont State while working half-time at the West Virginia Geological and Economic Survey. Tom earned a bachelor’s degree in Earth and Space Science Education from Indiana University of Pennsylvania. After a short stint teaching eighth-grade Earth & Space Science in Apollo, PA, he returned to the classroom to earn a master’s degree in Geology. After graduation he became a coal geologist for the West Virginia Geological and Economic Survey. After 18 years in that position, Tom took on a position tasked with enhancing the survey’s Educational Outreach Opportunities. This resulted in the development of the RockCamp Program that continues to provide in-service K-12 educators with ongoing professional development opportunities focused on the Earth Sciences. Tom has been working with the RockCamp Program and state science teachers for the past 12 years. In the course of those 12 years, he returned to West Virginia University to earn a doctorate in Science Education.

What have you learned while teaching at Fairmont State? Students always find the other meaning to a statement.

E-mail Address: trepine@fairmontstate.edu

CINDY KEELING

Cindy Keeling is Program Manager at the Educator Resource Center NASA IV&V Facility and a Temporary Assistant Professor of Geoscience at Fairmont State. She holds a Bachelor of Science degree in Education from Fairmont State College and a Master of Arts degree in Reading Specialization from Baldwin Wallace College. She also holds a specialization in gifted education from West Virginia University and an Educational Leadership degree from Salem International University. She has 29 years of teaching experience in kindergarten through eighth grades in Ohio and West Virginia. Keeling was the 2000 Presidential Awardee for Elementary Science Teaching for the state of West Virginia. She has been instrumental in setting up after school science programs for students. She has presented across the
U.S. at conferences and workshops for service and preservice teachers. She is also the Solar System Educator for the state of West Virginia. She serves as the Science Elementary Presidential Awardee (SEPA) representative for the state of West Virginia. She resides in Fairmont with her husband John.

**What have you learned while teaching at Fairmont State?** The path to learning never ends.  
**E-mail Address:** ckeeling1@fairmontstate.edu

**Todd Ensign**

Todd Ensign is serving as Temporary Assistant Professor of Geoscience at Fairmont State as well as the Education and Technology Specialist for the NASA IV&V Educator Resource Center. While teaching rock climbing to a group of young students, he found himself spending more time describing the environment of deposition that formed the quartzite they were clinging to than encouraging them to climb to the top. At that moment, he understood that his future career involved teaching science, and that to realize his dream he would have to return to college. So, he quit his job as an experiential educator and moved with his wife Jessika to Flagstaff, AZ, where he completed a Bachelor of Science in Earth Science Education and a Master of Education in Educational Technology at Northern Arizona University.

Todd followed his wife back East to Morgantown, WV, where she is pursuing a doctorate at West Virginia University. He was fortunate to work for several years at The EdVenture Group where he designed and taught professional development opportunities for teachers across the state. During this time he also began working as an adjunct instructor for Fairmont State teaching Geosphere and Exosphere to elementary education majors. In October 2005, he accepted a position at the NASA IV&V Facility Educator Resource Center as a Science and Technology Specialist. Currently he delivers NASA educational programs to teachers throughout West Virginia.

**What have you learned while teaching at Fairmont State?** While teaching at Fairmont State, I have been surprised by the diversity of the students in my courses.

Since I was also a non-traditional student, I enjoy learning from students why they have chosen to return to school after working as machinists, nurses or computer technicians. I have had students who are younger than 20 and older than 60, and I have discovered that the reasons for wanting to become a teacher are as varied as their ages.  
**E-mail Address:** tensign@fairmontstate.edu

**Faculty Milestones in 2005**

- Dr. Deb Hemler, Associate Professor of Geoscience Education, earned tenure.
- Dr. Phil Yeager, Associate Professor of Biology, earned tenure.
- Dr. Andreas Baur was promoted to Associate Professor of Chemistraya and also

named as the Faculty Senate Webmaster, a major new leadership position created for 2005-06.
- Dr. Albert Magro was promoted to the new rank of Senior Professor of Biology and Physical Science.
- Dr. Mark Flood, Professor of Biology, was awarded a year-long sabbatical to work on his research project.
- Dr. Tia Richardson, Associate Professor of Civil Engineering technology, was on sabbatical for fall 2005.
- Dr. Joe Riesen, Professor of Mathematics, was elected President of the university-wide Faculty Senate.
- Dr. Pam Huggins, Assistant Professor of Biology, and her husband, Dr. Luke Huggins, a biology professor at West Virginia Wesleyan College, welcomed a son, Tadeo, in July 2005.
- Dr. Matt Scanlon, Professor of Chemistry, climbed Mt. Kilimanjaro in June 2005.

**New Staff**

**Julia G. Ozie**

Julia Ozie worked as a Library Assistant II on campus for three years before joining the staff at the College of Science and Technology as an Administrative Secretary, Senior, in January 2006. Her analytical skills and ability to learn new techniques in Excel will be invaluable as she undertakes handling of purchasing and accounting for all of the grants in the Hunt Haught Hall office, along with other projects. According to Ozie, “I enjoy my five grandchildren, two children (and their spouses), my Havanese dog, Buddy, and of course the man I married a long time ago. (Probably in that order).”

You may find her on long walks, riding a bike, taking off for a long drive on a sunny day, reading a book or making a quilt. Prior work experiences include Kitchen Design, Office Manager, Photography, Landscaping and Customer Service. Her educational background includes Accounting, Computer Tech, Interior Design, Architecture, Management and Sales.

**Email address:** jozie@fairmontstate.edu

**Rosetta Kolar**

Rosetta Kolar is a familiar face in a new role. In November, she was named as the replacement for Sandy Shriver in the Program Assistant II position. In the new position, Kolar handles college-wide purchasing, accounting and budgets, in addition to advising both of the College offices. Previously, in the Administrative Secretary Senior position, she handled purchasing and accounting for the rapidly growing number of grants in the Hunt Haught Hall office. Kolar is a state certified Emergency Medical Technician and is currently pursuing an associate degree at Fairmont State in the Paramedic Program.

**Email address:** rkolar@fairmontstate.edu
American Chemical Society Meeting

Chemistry students Melinda Huff, Amy Jeffrey, Amy Jaggie, Sam Tenney, Masako Shimamoto, Jennifer Carlile, and Holly Debolt, along with chemists Andreas Baur, Matt Scanlon, and Erica Harvey traveled to Washington, D.C., Aug 28-30, 2005, for the 230th National Meeting and Exposition of the American Chemical Society. Various members of the group gave the following presentations at the meeting:

- Andreas Baur, Erica Harvey, Matthew Scanlon: “Teaching General Chemistry Mastery and Outcome-Based”
- Melinda Huff, Megan Damm, Amy Jaggie, Amy Jeffrey, Dana Calica, Jill Taylor, Andreas Baur: “Science Activities for Homeschoolers”
- Matthew Scanlon, Erica Harvey, Andreas Baur: “Teaching Analytical Chemistry by Mastery and Outcome-Based Methods”
- Erica Harvey, Siegfried Bleher, Melinda Huff, Amy Jaggie, Amy Jeffrey: “Yoga as a Learning Enhancement in Online Quantum Chemistry”

Comments from the students were very positive. Amy Jeffrey commented, “I had a blast during our trip to D.C. It was an eye-opening experience to see how huge the field of chemistry actually is. It was a wonderful experience to see the big world of chemistry outside of FSU.”

For Sam Tenney, the whole trip was a tremendous learning experience. “We were able to attend several very interesting presentations and we were also able to meet with recruiters from several graduate schools around the nation. The trip made for an excellent addition to my resume. In our free time we had the pleasure of taking in the sights of D.C. and eating excellent cuisine. I would do it all over again in a heartbeat.”

Amy Jaggie “was overwhelmed with the amount of people who attended the meeting and the woman who made a video of dancing to aid in learning chemistry will forever be stuck in my mind. She was very enthusiasm!”

Masako Shimamoto, who is from Japan, notes, “For me, it was kind of inspiring, because there were a lot of people from different countries there... I liked it, and if I have another chance to attend it, I definitely will.”

Undergraduate Research Presented at Capitol

On Wednesday, February 1, two Fairmont State students from the College of Science and Technology presented their work at the Third Annual Undergraduate Research Day at the Capitol. The event, held in the Capitol Rotunda, is designed to help members of the State Legislature and Executive Branch understand the importance of undergraduate research by talking directly with the students whom these programs impact.

Melinda Huff, a chemistry major engaged in biochemistry research with Dr. Mark Flood, presented her poster entitled “Gene Mutations May Lead to Higher Risk for Heart Disease in Obese West Virginians.”

The predominance of coronary artery disease (CAD) continues to rise. Contributing factors for CAD include lifestyle, genetics and high levels of cholesterol, triglycerides and homocysteine. Huff studied the homocysteine levels of an obese West Virginia patient population to determine if a mutant form of a gene caused their higher levels of homocysteine.

Senior computer science major Michael Ware presented his summer research results, entitled “Using the Common Criteria to Elicit Software Security Requirements.” His on-campus faculty advisor is Don Tobin. Ware’s research focused on building quality, vulnerability-free software. His approach to satisfying the need to address security issues in the software development process is the use of an international standard, the Common Criteria, to specify security requirements in addition to normal software requirements.

Andrew Baer and Kabir Shakya’s computer science work on “Analysis and Detection of Steganography Applications” with faculty mentor Donald Tobin was also accepted for presentation. Both students have graduated and are working, so they were unable to present.

The students applied for the privilege of presenting their work. The Steering Committee for the event is statewide and made up of members from Marshall, WVU, Shepherd, and Wheeling Jesuit College. More information can be found at http://www.marshall.edu/urdc/.

SciTech Student Forum in Vista

Since the fall of 2005, over 140 students taking science and technology courses have signed up for the new SciTech Student Forum in Vista, which provides students with helpful information such as how to find a tutor, how to prepare for an advising appointment, and opportunities for internships and scholarships. Information about college activities is listed on the calendar and door schedules of faculty members are available with a click of the mouse. Online tutors are even available in the forum.

To sign up, students who are taking courses in the College of Science and Technology fill out an electronic form that can be found in a Group Announcement at the end of their list of courses in Vista. Alumni, faculty, staff, and interested others can join the forum by emailing Erica Harvey at eharvey@fairmontstate.edu.

Applied Mathematics Research

Dr. Yi Wang, Assistant Professor of Mathematics, received a NASA West Virginia Space Grant Consortium Research Enhancement grant for his project entitled “A NHPP Software Reliability Model with a Time-Dependent Failure Rate.” The $6,000 grant runs from November 1, 2005 - June 15, 2006. Wang will support two students with this grant.

Wang is also serving as a mentor for student researcher John Boker, whose project on “An adaptive multilevel quadrature algorithm for one dimensional integration” is supported by a $1,500 Undergraduate Research grant from Fairmont State for 2006.

Environmental Award

The student environmental club STAND (Students Taking Action in Nature’s Defense) received the 2nd place 2005 Outstanding Achievement in Environmental Stewardship Award from the WV Collegiate Environmental Network. The group received a plaque and check for the award.
American Society of Civil Engineers Student Club

The Fairmont State American Society of Civil Engineers (ASCE) Student Club continues to be active in professional, social and service oriented activities, as evidenced by receipt of the “Most Outstanding Student Club” award from ASCE National for 2005. The design and analysis of a pedestrian bridge for the Marion County Soccer Complex is a large club project currently under way.

The club’s “Consistent-C-33” Concrete Canoe finished 12th in the nation at the 18th Annual National Concrete Canoe Competition hosted by Clemson University on June 24-27, 2005. Led by Patrick Guthrie, Chair, and Greg Wilson, Co-Chair, a fifth place finish was earned in the men’s sprint and a fourth place finish in the oral presentation. Fairmont State was the only West Virginia institution invited to participate in the national event, and the team’s 12th place finish is the best showing at the national event for the Virginia’s region in 10 years. This activity provided the students with the opportunity to experiment with different materials and realize the versatility of concrete in meeting challenging design applications.

The club’s 3rd Annual Summer Technical Conference was held on June 2, 2005 at the Fairmont Holiday Inn with the theme “Homeland Security and Natural Disasters.”

The 2006 event will be held on campus and the club asks everyone to mark your calendar for the first Thursday in June 2006. Six to eight professional development hours should be available for attending this event.

For more information on ASCE and engineering technology programs at FS, e-mail Tia Richardson, P.E., Associate Professor, at trichardson@fairmontstate.edu or via telephone at (304) 367-4629.

Scholarships and Awards 2005

Jeremy W. Bartholow, senior technology education major and 2001 graduate of East Fairmont High School, received the Bachelor of Science Academic Achievement Award in Technology Education.

Jason A. Buttrey, a senior architectural engineering technology major and a 2001 graduate of Williamstown High School, received the Baccalaureate Achievement Award in Architectural Engineering Technology.

Dustin T. Cogar, a junior technology education major and 2002 graduate of Lewis County High School, received the Walter F. Phillips Jr. Endowed Scholarship.

Kelly L. Gank, a senior graphics technology major and 2001 graduate of Southern Garrett High School, received the Baccalaureate Achievement Award in Graphics Technology.

William D. Hawkins, a senior electronics engineering technology major and 1992 graduate of Williamstown High School, received the Baccalaureate Achievement Award in Electronics Engineering Technology.

David J. Johnson, a senior double majoring in mathematics and math education and a 1988 graduate of McDowell High School in Erie, PA, received the James A. LaRue Mathematics Award and the Eleanor M. Ford Outstanding Senior in Science Award.

Billy J. Kennedy, a mechanical engineering technology major and a 2000 graduate of West Greene High School, received the Baccalaureate Achievement Award in Mechanical Engineering Technology.

Jill R. Mehaulic, a senior safety and environmental engineering technology major and 2001 graduate of Fairmont Senior High School, received the Baccalaureate Achievement Award in Safety Engineering Technology.

Jordan W. Moran, a chemistry major and 2003 graduate of Grafton High School, received the Outstanding Freshman Chemistry Award.

Melissa A. Moury, a senior chemistry major and 1994 graduate of Preston High School, received the Outstanding Senior Chemistry Award, funded by the William C. Ruoff Memorial Fund.

Frank M. Muldoon, a junior aviation administration major and 2003 graduate of Pike View High School, received the Bachelor of Science Academic Achievement Award in Aviation Technology.

Gabor I. Nagy, a senior civil engineering major and a 1997 graduate of Dobos Istvan Gimnazium Eger, 3300, received the Baccalaureate Achievement Award in Civil Engineering Technology and the Outstanding International Student Award.

Timothy B. Riley, a computer science major and a 2001 graduate of Lewis County High school, received the Outstanding Student in Computer Science Award, funded by the Ernest W. Frye Memorial Fund.

Jamie L. Smith and Jaye L. Smith, biology majors and sisters who both graduated from East Fairmont High School in 1998, were co-recipients of the Outstanding Senior Biology Student Award.

Holly Debolt, a chemistry major and 2002 graduate of East Fairmont High School, received the Eleanor M. Ford Outstanding Junior Endowed Scholarship.
Science Education Partners with NASA IV&V Facility
Continued from page 1

education major with a science specialization, is currently placed at the ERC for a service learning opportunity. In March, the ERC will bring the inflatable StarLab to the Fairmont State campus for teacher training. The ERC also organizes GLOBE training. GLOBE (Global Learning and Observations to Benefit the Environment) is a worldwide hands-on, primary and secondary school-based education and science program (http://www.globe.gov), and Todd Ensign is the GLOBE representative for the state of West Virginia.

The SOC grant, which started in April 2004, is funded for $388,103 over 5 years. This grant supports one staff member with travel and supplies. Valerie Graves held the staff position until November of 2005, and the position is currently being filled. The staff member runs “Day in the Park,” oversees interns, and makes classroom visits to deliver NASA curricular materials.

Biotechnology
Summer Camp

A new camp in the summer of 2005 was a Biotechnology camp for high school students. Twenty students in the week-long day camp, held August 8-12, 2005, learned sophisticated biotechnology techniques by actually practicing them in the laboratory. Specifically, participants isolated DNA from their hair and cheek cells and made copies of some of their DNA, created “glowing” bacteria and isolated the “glowing” protein (GFP -green fluorescent protein) from these bacteria, and separated dyes, DNA and proteins via electrophoresis. Students had a chance to use expensive research instrumentation such as variable volume pipettes and agarose and acrylamide electrophoresis equipment. Staff members included director Mark Flood, faculty members Steve Roof and Sarah Dodson, and undergraduate students Bonnie Freeman, Melinda Huff, Dana Calica, Amy Jaggie, Amy Clark, Samantha Chapman, and Masako Shimamoto. The 2006 camp will be held July 24-28 and is open to 7th graders from GEAR-UP schools.

Mark Flood’s CSI programs in Kids College were mentioned at the end of an article entitled “Crime Seen” in the December issue of Edutopia: The New World of Learning. http://www.edutopia.org/magazine/ed1/article.php?id=Art_1409&issue=dec_05

Example techniques include fiber analysis, powder analysis, hair analysis, blood spatter and bullet hole analysis, fingerprint and footprint analysis. Staff members included director Mark Flood, Steve Roof, Dean Van Bibber, and undergraduate students Bonnie Freeman, Melinda Huff, Dana Calica, Amy Jaggie, Amy Clark, Samantha Chapman, and Masako Shimamoto. The 2006 camp will be held July 24-28 and is open to 7th graders from GEAR-UP schools.

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CSI Summer Camp

The popular CSI summer camp was held July 25-29, 2005. Thirty students in the week-long day camp learned forensic science techniques and then worked in teams to design crime scenes for other teams to solve.

Project AMPLEx Students Learn Math, Science, Technology

Project AMPLEx (Action Math and Physics Laboratory Experiences) Extended is a free, residential summer enrichment program in science, mathematics, engineering and computer technology for current seventh-grade students from designated GEAR-UP middle schools. Faculty and students from many College programs help with AMPLEx, including chemistry, math, computer science, civil and safety engineering technology, graphics and biology. The program is co-directed by Stephanie Yoho, Amy Stevenski, Dr. Susan Goodwin, and Dr. Erica Harvey. Evening activities are directed by Michael Belmear, Vice President for Student Affairs, and his staff.

The 2006 camp runs from June 8-29. Applications must be postmarked by April 5 and are available on the web. (Go to http://www.fscwv.edu/gearup/ and choose Project AMPLEx from the list at the left.)

Biology Professor in Governor’s Honors Academy

Dr. Pamela Davey Huggins, Assistant Professor of Biology at FSU, has been chosen to teach courses on the environment and on genetics and social issues, including stem cells and cloning, at the Governor’s Honors Academy. Fairmont State is hosting the academy each summer from 2005-2007. Designed to stimulate and support academic excellence in education through an intensive, residential summer program, the GHA is offered without cost to 165 of the state’s top achieving rising seniors in high school.

Two students from each county plus additional students from a statewide pool are selected to attend the Academy. The purpose is to recognize, encourage and reward outstanding young people whose academic and/or arts work demonstrates excellence. For information call Dr. J. Robert Baker at (304) 367-4260.
Science After School Program Begins March 27

The Spring 2006 Science After School enrichment program at Fairmont State, taught by elementary preservice teachers under the direction of Dr. Deb Hemler, Geoscience Education Coordinator, and supervised by Jo Ellen Snider, science methods instructor, begins Monday, March 27.

Themes for the elementary programs are “Kitchen Science,” where students will investigate the science you might not expect to find in household items, and “Exploring Pluto,” in which students will explore the conditions on the outermost planet and moons with the help of NASA New Horizon materials.

The cost is $25 for each section, and students may enroll in both sections. Enrollment is on a first-come, first-served basis. An application form from a parent or guardian is required. For more information, call Dr. Deb Hemler at (304) 367-4393.

FS Hosts Regional Science Fair

The North Central West Virginia Regional Science, Engineering and Energy Fair for 2006 will be held at Fairmont State on Friday, March 3, and Saturday, March 4. For more information about the fair, contact Dwight Harris, Chair of the Department of Computer Science, Math, and Physics (dharris@fairmontstate.edu), (304) 367-4714.

In last spring’s fair at Fairmont State, 91 entrants were judged in the Junior Division (6th through 9th grades), and 3 entrants were judged in the Senior Division (10th through 12th grades). Counties represented were Doddridge (37 entries), Gilmer (8 entries), Harrison (8 entries) and Marion (42 entries.)

The nine categories for entries (with a Junior and Senior Division for each) were energy; engineering; botany; zoology; chemistry and biochemistry; earth and space science; physics, math and computers; medicine, health and microbiology; and behavioral and social sciences.

Numerous College faculty, staff and students assist with the science fair each year.

America/FS Counts

In conjunction with the Fairmont State GEAR-UP Partnership Grant, the America/Fairmont State Counts program provided free math tutoring to students in 5th through 8th grades who were experiencing math difficulties during the fall of 2005.

The program, supervised by Pam Kabulanski and coordinated by Donna Yergovich Nuzum, was held on campus. Susan Goodwin’s math education students who participated as tutors in America Counts included Ashley Wilson, Michelle Knicey, and Janelle Murray. Several pre-service math teachers also presented their lessons at the after school program at East Park Elementary: Tara Black, Marcia Manley, Tracy Shingleton, Justin Kifer, Vanessa Rickert, and Heather Yoho. For more information about the program, call (304) 367-4579.

RESA VII Science Bowl

The Science Bowl, co-organized by RESA and FS College of Science and Technology, was held on campus on December 15, 2005. High school students from 12 regional high schools participated in the competition, while FS faculty, staff and students and RESA volunteers served as moderators, judges, timekeepers, and scorekeepers. Participating schools included Bridgeport High (Second Place), Fairmont Sr. High, Lewis County High, Liberty High, Lincoln High, Morgantown High (Third Place), North Marion High, Philip Barbour High, South Harrison High, Trinity Christian, Tygarts Valley High and University High (first place.)

The first and second place teams go on to the statewide event sponsored each February by the Federal Energy Technology Center (FETC) and the U.S. Department of Energy. The winner of the FETC event represents West Virginia in the National Science Bowl held each May in Washington, D.C.

Campus Visits!

Fairmont State hosts Campus Visitaton Days in the fall and the spring each year. The spring event will be held on Saturday, March 25, 2006, for high school students, their families and adults who are deciding where to continue their education. Faculty and administrators from the College of Science and Technology are present at the events to provide information about our programs and majors. Tours of the College are provided upon request. To find out about upcoming Campus Visitation Days and other ways to visit the campus, click on the Visiting Fairmont State link on the bottom left of our home page (www.fairmontstate.edu) or call (800) 641-5678, Ext. 2, or (304) 367-4892.
Biomedical Research Well Supported

Fairmont State continues to reap benefits as a Network Research Institution in the West Virginia IDeA Network of Biomedical Research Excellence (WV-INBRE) program. The main emphasis of WV-INBRE is to strengthen biomedical undergraduate programs with educational and research links across West Virginia’s universities.

Through WV-INBRE, FSU faculty members Dr. Mark Flood and Dr. Albert Magro each received $150,000 per year for five years as part of a National Institutes of Health grant initially awarded in 2004. The funds are used to support extensive research programs by the two principal investigators and their research teams. Fairmont State students involved during the past year include Dana Calica, Melinda Huff, Contessa Hill, Richard Herrington, Matt Thorn, Justin Morgan, Megan Damn, Jaime Meadows, and Mary Prescott. Dr. Flood’s grant included support for a research technician, FSU biology graduate Bonnie Freeman, and an additional faculty member, Dr. Sarah Dodson, who joined the biology program last April. Dr. Magro’s grant has supported Rebecca Merritt, a research associate with the title Temporary Assistant Professor, during the past year.

The teams have given numerous presentations during the past two years at conferences in locations such as Toronto, Salt Lake City, UT, and Lexington, VA, in addition to the WV-INBRE conferences that were held at Marshall University and WVU.

Thanks to an additional $100,000 grant from WV-INBRE, major improvements are being made to the campus information technology network infrastructure. Specifically, gigabit internet access (with the associated capability of connecting to Internet 2) and digital video conferencing capabilities are being provided for the principal investigators.

During the spring of 2005, Fairmont State hosted a Biomedical Speakers Program supported by WV-INBRE. Faculty and students from WV-INBRE gave presentations on their research into the fundamental mechanisms underlying important health problems such as cancer and cardiovascular disease.

Forensic Science Team Visits Eastern Kentucky University

Jim Weekley, Sarah Dodson, and Matt Scanlon traveled to Eastern Kentucky University on January 4-5, as representatives of the interdisciplinary Forensic Science Program Oversight Committee. Under the direction of Dr. Mark Flood, Professor of Biology and the new coordinator of the forensic science program, the oversight committee has been meeting regularly during the 2005-06 academic year to begin the process of pursuing national accreditation for the program.

Eastern Kentucky University has graduated about 250 students from their forensic science program since its inception in 1975 and has one of the few forensic science programs accredited by the American Academy of Forensic Sciences. Weekley, Dodson, and Scanlon met with the forensic science faculty at EKU and toured their laboratory facilities. The Fairmont State team learned valuable information about applying for accreditation in general and specifically about designing a new microscopy course to serve students in the program.

Botany of Desire

Don Trisel, Associate Professor of Biology, organized four multisensory book discussion sessions for Fairmont State’s Spring 2005 Celebration of the Book, focused on The Botany of Desire: A Plant’s-Eye View of the World, by Michael Pollan. Trisel designed the sessions around the four book chapters that explored human desires and specific plants that exploit those desires, including sweetness (apple), beauty (tulip), intoxication (marijuana) and control (potato.) Faculty, community members, advanced biology students and honors students attended the events, which involved seeing, hearing, tasting, and smelling. Each discussion was led by a member of the administration. Session participants sampled coffees and chocolates, two of the most common (legal) mind-altering substances in human culture, and enjoyed a potato potluck and an apple tasting.

Dental and Optometry Admission Test Insider

Ever considered who writes those brain-challenging pre-professional exams? Organic chemist Andreas Baur finished up a 5-year term on the Organic Test Construction Committee of the American Dental Association this year. According to Dr. Baur, service on the committee required travel to Chicago once or twice a year for an intensive 2-day meeting with two colleagues to draft tests for the DAT (Dental Admission Test) and OAT (Optometry Admission Test) as well as the development of new questions for the test banks.

EPSCOR Instrumentation Grant

Senior Professor of Biology Dr. Albert Magro competed successfully in Fall 2005 for a statewide EPSCoR instrumentation grant. The grant is entitled “Equipment Proposal to Enhance Faculty and Undergraduate Research.”
**Gender-Boggling Questions**

Biology faculty member Pamela Davey Huggins and her sister, Frances Davey (Ph.D. ABD American Studies), teamed up for a talk entitled “Is Jamie Lee Curtis a Man?” The biological and cultural roots of sex and gender in American society were examined during the standing-room-only talk on November 10, 2005.

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**Department of Justice Calls on Faculty**

Don Tobin, Assistant Professor of Computer Science, was invited to participate as a member of the Technical Working Group on Education and Training in Digital Evidence (TWGEDDE), an effort funded jointly by the Department of Justice (DOJ) and the National Institute of Standards and Technology (NIST). The TWGEDDE was comprised of members of federal and state law enforcement officers, the Department of Homeland Security, prosecuting attorneys, university faculty, and current computer forensics practitioners. Their task was to develop and document the educational and training needs of future digital forensics analysts. This field is expected to grow significantly in the coming years due to the pervasiveness of computing devices in our everyday lives, and the criminal justice system will need to keep ahead of criminals to analyze digital evidence and detect criminal activity. The TWGEDDE met 6 times at various locations throughout the United States in the past year. The final document, outlining the desired requirements and skills of associates, bachelor’s, and graduate degrees, as well as ongoing professional development, is expected to be published in the spring of 2006.

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**Faculty Participate in NASA URI Grant Program**

Galen Hansen, Professor of Physics, and Don Tobin, Assistant Professor of Computer Science, have each received $10,000 NASA Partnership Grants through the Undergraduate Research Initiative Program. The Undergraduate Research Initiative Program is a $50,000 partnership with the NASA IV&V facility.

Hansen’s grant will enable him to develop the course syllabi, outlines and activities for two prototype undergraduate courses that will be used to teach a select group of students the basics of systems analysis/software engineering and software validation and verification (V&V), including the Software Cost Reduction (SCR) method. The courses are designed to prepare students for a possible Return on Investment (ROI) undergraduate project in 2006/2007. The grant provides for Hansen to take two graduate software engineering courses from WVU (Fall 2005 and Spring 2006), and to collaborate with FSU faculty members and NASA IV&V personnel in developing the courses.

Tobin’s research effort will focus on predicting the likelihood of faults in large software development projects. Current prediction models are based on parameters from older programming languages and do not account for the increased independence of current software systems. In today’s era where software systems are safety-critical, and software vulnerabilities can be exploited by hackers, criminals, or rogue nation-states, we must ensure systems are adequately tested and validated to be fault-free. After an extensive literature search, a couple of new models will be developed and tested against NASA historical project data to explore the value of their contributing parameters. Michael Ware and Kabir Shakya, seniors in Computer Science, are being funded through this grant.

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**Future Teachers Participate in Calculator Workshop**

Preservice math teachers Amber Hayhurst and Heather Yoho learn how to use the TI-84 calculator for data acquisition.

Fairmont State University students transitioning from being students to being teachers of math and science participated in a campus workshop designed to provide them with the information they need to maximize the use of calculators in their classrooms.

The workshop, presented by Dr. Patsy Fagan of Drake University in conjunction with Texas Instruments, Inc., was offered through a grant the company provided to Ohio State University. Students attending the workshop received more than $300 worth of equipment including a teacher model TI-84 Plus Silver edition calculator.

“It is impressive, but no surprise, that 20 FSU students gave up two days of their vacation to participate in this valuable professional development opportunity,” said FSU math professor Dr. Susan Goodwin. “Every student I talked to felt the workshop was definitely worth the sacrifice.”

Fagan said students attending the workshop received a broad view of the technology they can apply in their classrooms. The TI-84 teacher model can be used to measure light intensity and temperature and as a motion detector.

Angela Merrifield, a senior from Fairmont, was among those participating in the workshop. Merrifield, who is an elementary education major with a math specialty, will be student teaching this spring.

“We used this calculator model some in our classes. But, here, we’ve had the chance to play around with it,” Merrifield said of the exposure to the TI-84 during the workshop.

She said she will be able to apply much of what she learned in her classroom, including the calculator’s capacity to save programs.
DEPARTMENT OF TECHNOLOGY

Engineering Technology Transported

Dedicated technology faculty and staff, their family members, and physical plant employees collaborated on a Herculean effort to move the Technology department to its temporary new home in the Turley Center in time for spring classes. The remarkable transformations include a kitchen turned into a civil engineering technology lab. The College of Science and Technology office that was previously located in Wallman Hall can now be found in 322 Turley Center. Luckily, most phone numbers are unchanged. The temporary move was necessary to accommodate renovations and new construction in the Technology Wing of Wallman Hall, expected to begin during 2006.

Electronics Engineering Tech Students Build Robots

Four teams of Fairmont State University students worked for months in 2005 designing, building and programming their final projects – working robots. The eight students were seniors majoring in Electronics Engineering Technology in the College of Science and Technology. Kim Murphy, Associate Professor of Safety/Environmental Engineering Technology, supervised the senior capstone course.

“It really takes all their knowledge of electronics, mechanics, computer programming.” Murphy told The Times West Virginian in a December, 2005 interview. “It’s quite a challenge.”

Project ideas were approved by a faculty committee before the design phase began. The process of building the robots takes more than one semester. Some of the students said they spent as much as 30 hours a week on their projects for months. At the end of the capstone course, they presented their projects and were graded on their work.

Chris Nichols and Steve Bowers created the B and N Fire Extinguisher for their project. Their robot, which could aid firefighters, can travel through a maze while checking for a flame. It can detect whether a flame is present and then travel to the flame and extinguish it.

Derek Gilmore and Jonathan Cable built the “Lazy Drinker” Automatic Beverage Dispenser, a machine capable of dispensing preprogrammed amounts of liquid into a cup. The user can program in codes as recipes for certain drinks made from different amounts of liquid and the machine will “mix” the drinks.

Brandon Sickles and Dustin Baker developed the D & B Maze Mapping Robot, which is designed to navigate mazes and communicate with another robot that draws a maze on a computer using Microsoft Paint. The robot that travels through the mazes navigates using infrared and communicates using radio frequencies that are in turn being received by the other robot. The information being received is then deciphered by the robot and it knows which way to draw the path on the computer screen.

“It could explore places that humans couldn’t go, like a building that’s unstable,” Baker told the Times West Virginian.

Kevin Leyh and Chris Campbell built the Power Train Tester for Remotely Operated Vehicles. The goal of the project was to acquire performance data associated with running a remote control car at different speeds and mechanical loads simulating real world driving, but in a controlled and monitored state. This information could help RC hobbyists who race or robotic engineers test their vehicles’ performance before actually hitting the real road.

The robots the students created all have “real-world” applications and could possibly lead to a patent if the students choose to pursue that avenue.

Great Advice

Engineering Technology faculty members Kim Murphy and Tia Richardson have earned recognition from students and faculty colleagues for their advising skills. Kimberly Murphy, Associate Professor of Safety/Environmental Engineering Technology, was honored with the Excellence in Academic Advising Award for 2005.

She succeeds another College faculty member, Civil Engineering Technology faculty member Tia Richardson, who won the 2004 award.

The award is presented to honor demonstrated excellence and commitment to the significant force that academic advisors play in the education, personal development and success of their advisees.

“Kim is dedicated, enthusiastic and extremely accessible to students,” said Pam Stephens, Coordinator of Academic Advising. “As one nomination form states, ‘She keeps her office door open to students all day, every day.’ Most importantly, she makes a remarkable difference in the success, growth and development of students.”

Kim Murphy and Tia Richardson are great examples of advisors who go the extra mile to ensure their students’ success.
New MAT Program
“so flexible that anyone can do it”

Brooke Prickett and Lea Ann Barnes are two of about 30 graduate students at Fairmont State who are currently pursuing the new Master of Arts in Teaching (MAT) degree. The MAT program is an attractive option for people like Prickett and Barnes, who have undergraduate degrees in science-related fields. In addition to Barnes and Prickett, 4-5 other students are currently pursuing MAT degrees with specializations in science or math.

All of the education classes required for the program are online graduate courses, with the exception of three clinicals spent observing and student teaching in public schools. Students take whatever course load they find manageable each semester. As Prickett says, “All of the online classes are so flexible. You can continue with your job, or stay home with your kids while you’re taking classes. You can work at your own pace and take as many classes as you want to at a time. You can take a test at midnight or at six in the morning. It’s pretty convenient.”

In addition to graduate-level education courses, students in the MAT program must complete the undergraduate content courses required for their specific teaching specialization(s). Because Barnes and Prickett had taken most of the content courses for a chemistry specialization as part of their undergraduate degrees, only a few additional undergraduate content courses were required.

Fairmont State offered several graduate courses in science education last summer and more are planned for the summer of 2006 as a way of giving back to the community. The courses are offered as PHSC 5099 Special Topics, 3 credits, for the special cost of $33 a credit. The intended audience is teachers seeking professional development credits for pay raises, re-certification and plus hours. Support for the courses was obtained through the Higher Education Policy Commission and the No Child Left Behind initiative.

Faculty for the graduate courses travel to the teachers’ home counties to offer the week-long courses, and then make follow-up visits during the school year to see how the participating teachers implemented the courses with their K-12 students. During the summer of 2005, “West Virginia Geology for Teachers” was offered in Logan, Brooke and Preston counties. Partners in offering the course included Deb Hemler (Fairmont State), Jack Renton and Bob Belhing (West Virginia University) and Tom Repine (West Virginia Geological and Economic Survey).

“Introduction to GPS and GLOBE” was offered in 2005 in both Harrison and Monongalia counties. Course faculty included Todd Ensign and Cindy Keeling (NASA ERC), Tom Repine, Deb Hemler, and Tom Berlin (Alderson Broadus College). As part of the course requirements, teachers had to implement GPS and GLOBE protocols with their students and post the data on the GLOBE web site (http://www.globe.gov).

For the summer of 2006, “Introduction to GPS and GLOBE” will be offered to the teachers of the northern panhandle counties. This course has truly become a WV higher education partnership. The course faculty from the previous summer will be expanded to include Tina Cartwright (WV State University), Rico Gazal and Bruce Edinger (Glenville State College), and Rick Landenberger (WVU).

Another workshop sponsored by the ERC for the summer of 2006 will be “Aeronautics Materials for Elementary with Literature Integration Activities (AMELIA).” AMELIA is offered in collaboration with Fairmont State Geoscience Education and Marion County Schools and will provide elementary teachers an opportunity to work on the integration of science content and literature. This course is pending funding from the Higher Education Policy commission and No Child Left Behind. For information about the summer courses, contact Dr. Deb Hemler at (304) 367-4393 (dhemler@fairmontstate.edu).

Graduate Courses in Science Education

Teacher Stefan Smolski, from Oak Glen High School in Hancock County, enters data on the GLOBE website during an advanced atmosphere workshop at the ERC.

Stay Connected to Fairmont State

NAME: ____________________________________________________________

GRADUATION: Year ______ Major _________________________________

ADDRESS: ______________________________________________________

E-MAIL: __________________________________ PHONE: ________________

I am interested in (check all that apply)
___ Joining the SciTech Student Alumni Forum (electronic forum)
___ Finding out more about the Mentoring Program
___ Obtaining an Alumni Spotlight form
___ Other (specify) ________________________________________________

E-MAIL INFORMATION TO: eharvey@fairmontstate.edu
OR MAIL TO:
College of Science & Technology
Fairmont State University
1201 Locust Ave.
Fairmont, WV 26554

March 2006
Mentoring Program

We are currently planning a mentoring program to link entering students in science and technology with upperclass students and alumni from their home counties. The goal is to provide new students with support, advice and positive role models as they first encounter the substantial expectations of college coursework in science, math and technology. The program will start in the fall of 2006. If you are interested in learning more about this program, please contact Erica Harvey by email at eharvey@fairmontstate.edu or by phone at 304-367-4498.

New Electronic Forum for Alumni

All Science, Math, and Technology alumni are invited to join the new electronic SciTech Student and Alumni Forum. The forum provides a great opportunity to get in touch with friends and classmates from your days at Fairmont State, as well as faculty members and current students. You can email people privately in the forum and/or make public discussion posts. You can also post and/or find information about internships, job, or other professional opportunities.

To join, you will need to activate (or re-activate) your unified campus account (UCA). Detailed instructions for doing so can found by following the “SciTech Alumni” link on the College web page (http://www.fairmontstate.edu/academics/CollegeofSciTech).

Alumni Spotlight Needed

We’d like to hear what you are up to! Happy, successful alumni are one of our strongest recruiting features and we now have a way to feature alumni profiles on the web (http://www.fairmontstate.edu/admissions/undergraduate/spotlight/spotlight_archive.asp). Don’t hesitate to send us a profile, whether or not you are working in a field related to your undergraduate major. Current and prospective students need to hear how many different paths there are to success. To obtain a profile form, please contact Erica Harvey by email at eharvey@fairmontstate.edu or by phone at 304-367-4498.

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