

# THE NEURON

WEST VIRGINIA JOURNAL OF SCIENCE AND RESEARCH | FALL 2008

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## WVU RECEIVES FUNDING TO RECRUIT NEXT GENERATION OF MATH AND SCIENCE TEACHERS

The West Virginia University (WVU) Research Corporation has been awarded nearly \$750,000 in federal funds to help recruit freshman and sophomore college students to the teaching profession.

**“West Virginia’s students benefit from motivated and talented teachers. By encouraging the best and brightest minds at our colleges to become skilled math and science teachers they’ll be inspiring a whole new generation of scientists and engineers.”**

U.S. Senator Jay Rockefeller

The funds were awarded through the Robert Noyce Scholarship Program administered by the National Science Foundation. The aim of the program is to recruit college students majoring in science, technology, engineering and math to enter the teaching profession. In exchange for one year of financial aid, recipients agree to teach for two years in rural schools.

Under the proposal titled “Teaching Excellence at College for High Achievement in West Virginia” (TEACH-WV), 20 scholarships will be awarded to students who complete the Benedum Collaborative Five-Year Teacher Education Program. Upon completion, students will earn a bachelor’s degree in science, technology, engineering and mathematics, and a master’s degree in education, qualifying them to teach in West Virginia’s middle and high schools.

“West Virginia’s students benefit from motivated and talented teachers. By encouraging the best and brightest minds at our colleges to become skilled math and science teachers they’ll be inspiring a whole new generation of scientists and engineers,” said U.S. Senator Jay Rockefeller. “I congratulate the WVU Research Corporation on receiving this grant and in particular Dr. Paul Hill, head of the West Virginia Experimental Program to Stimulate Competitive Research, and Dr. Kasi Jackson, who penned the grant, for their leadership.”

Jackson is on the faculty of the WVU Center for Women’s Studies. Co-principal investigators on the grant are Dr.

Jeffrey Carver and Dr. Johnna Bolyard of the Department of Curriculum and Instruction/Literacy Studies; Dr. David Miller of the Department of Mathematics; and Dr. Michelle Withers of the Department of Biology. Other WVU personnel involved with the project are Dr. Michelle Richards-Babb and Dr. Jennifer Robertson-Honecker of the Department of Chemistry; Dr. Jane Caldwell of the Department of Biology; and Dr. Jim Rye of the Department of Curriculum and Instruction/Literacy Studies.



### about the Division of Science and Research

The Division of Science and Research provides strategic leadership for infrastructure advancement and development of competitive research opportunities in science, technology, engineering and mathematics disciplines. The office directs the National Science Foundation’s Experimental Program to Stimulate Competitive Research (EPSCoR) in West Virginia, coordinates scientific research grants to academic institutions from federal and state agencies, and conducts outreach activities to broaden the public’s understanding of science and technology. *Vision 2015: The West Virginia Science and Technology Strategic Plan* is available online at <http://www.wvresearch.org>.



# CYGAAMES

## WHEELING JESUIT TO STUDY HOW VIDEO GAMES CAN HELP STUDENTS LEARN SCIENCE

Imagine conducting scientific research by playing video games. Thanks to a grant from the National Science Foundation, kids can help Wheeling Jesuit University do just that.

In September, the university's Center for Educational Technologies received the \$2 million grant to study how video games can help students learn scientific concepts.

The center's CyGaMEs project will expand on research conducted through a 2006 grant from NASA. The earlier grant activities focused on studying how video games could be used to disseminate NASA science and assessing how well students learned while playing the games. That effort resulted in the creation of "Selene: A Lunar Construction GaME," a prototype online video game in which players learn how the Earth's moon was formed as they create their own moon, complete with impact craters and lava flows.

The NSF funding will allow researchers to continue their studies into educational video games while refining and reengineering "Selene" to make the game more robust.

"CyGaMEs is important because it causes and assesses learning within instructional environments scientifically engineered to make learning intuitive and intrinsically rewarding," said Dr. Debbie Reese, senior educational researcher for the center and principal investigator on the grant. "We want to make science learning more intuitive, and video games designed with sound instructional principles can help us achieve that."

Reese's co-principal investigators include Dr. Chuck Wood, the center's director; Dr. Ben Hitt, director of the university's Schenk International Center for Informatic Sciences; and Dr. Beverly Carter, associate professor of computer science.

**"We want to make science learning more intuitive, and video games designed with sound instructional principles can help us achieve that."**

Dr. Debbie Reese  
Senior Educational Researcher  
Center for Educational Technologies



## WVU AWARDED TWO NSF GRANTS FOR NANOTECHNOLOGY RESEARCH



Dr. Nick Wu, assistant professor of mechanical and aerospace engineering at West Virginia University (WVU), recently was awarded two grants from the National Science Foundation. The grants, totaling \$600,000, will allow Wu to expand his work in nanotechnology, which involves the design and manipulation of materials on a scale much smaller than the diameter of a human hair.

The first of Wu's two grants will help fund his research to develop a biosensor for detecting toxic metals in drinking water, rivers, oceans, soils and seafood. Currently, Wu said, detecting toxic metals requires large-scale analytical instruments that are labor-intensive, time-consuming and laboratory-based, and that require large sample volumes. In contrast, he and fellow WVU researchers Dr. Larry Hornak and Dr. Michael Shi are working to develop a sensor that will be portable and able to detect heavy metal pollutants in a water source in real time.

Wu's second grant will allow him to investigate the safety of manufactured nanomaterials, which pose uncertainties regarding their environmental impacts and health effects. Nanomaterials are finding extensive applications in cosmetics, paints, high-end sports equipment, cars, airplanes and cell phones, but Wu says little is known as to whether tiny particles are more toxic than large-sized materials or not. Wu is collaborating on the study with Dr. Andrij Holian of the University of Montana, and Dr. Dale Porter and Dr. Krishnan Sriram of the National Institute for Occupational Safety and Health.

## FORESTS MAY YIELD FUEL ALTERNATIVES, WVU RESEARCHERS SAY



*Dr. Jingxin Wang, left, and his colleagues Dr. Joseph McNeel, Tony Goff and Dr. Jinzhuo Wu are conducting extensive research on the sustainability of wood residue as a source of bioenergy.  
Photo by WVU Photographic Services*

With high gas prices and concerns about diverting crops from food to fuel, West Virginia University researchers believe they have found a solution in the forests of the Mountain State.

West Virginia is the third most-heavily forested state in the nation, and the harvesting process yields around 2.4 million dry tons of wood residues each year. These residues include the waste left over from forest operations and management—as well as the sawdust, chips and barks in sawmills.

“These wood wastes are sustainable and can be used as feedstock for biofuels, biogas and green electricity,” said Dr. Jingxin Wang, associate professor of wood science and technology in the university's Division of Forestry and Natural Resources.

Wang and other researchers, including Dr. Joseph McNeel, professor and division director; Dr. Jinzhuo Wu, graduate research assistant; and Tony Goff, research technician, have conducted extensive studies on the sustainability of wood residue as a source of bioenergy.

“With a conversion factor of 50-120 gallons of ethanol from one dry ton of wood chips, West Virginia could produce up to 159 million gallons of ethanol per year,” Wang added. “Even if a small fraction of woody biomass were used, a significant amount of bioenergy could be produced.”

The use of wood residues as feedstock for bioenergy may provide West Virginia a significant opportunity in economic development and energy independence, according to Wang.

# a CLOSER look

## RESEARCHER PROFILE:

### Eric Kmiec Marshall University



A scientist widely recognized as a pioneer of gene repair will join Marshall University in January as the first researcher hired through the state's \$10 million Eminent Scholars Recruitment and Enhancement (ESRE) initiative.

Dr. Eric Kmiec, professor of biology at the University of Delaware and director of applied genomics at the Delaware Biotechnology Institute, has been named the first director and lead research scientist of the Marshall University Institute for Interdisciplinary Research. Kmiec will be responsible for assembling a team of interdisciplinary research scientists who will comprise the core of the institute.

The West Virginia Legislature funded the ESRE program last year to support salaries and startup packages for nationally competitive researchers at Marshall and West Virginia University. The goal of the initiative is to help the two universities compete successfully for a larger share of federal and foundation research funds.

Kmiec said the passage this year of legislation to create a \$50 million "Bucks for Brains" trust fund to be invested in university research was a major factor in his decision to accept the position at Marshall.

"The research endowment and the state support, particularly from the legislature and Governor Joe Manchin, was an important part of the decision to join the team here," he said.

He added that he expects to assemble a strong team of scientists at Marshall.

"We should be able to seriously impact the economic development programs in the state by creating high-paying jobs, by engaging good talent from around the country," he said. "I hope to nucleate a group of people to spend a little more time looking at coming and joining our team. I think that immediately breeds more talent and stronger jobs and higher-paying jobs in the state and for this institution."

Kmiec is an expert in gene repair, a technique in which synthetic DNA molecules are used to patch or repair mutations in human chromosomes. Research in his laboratory is supported through grants from the National Institutes of Health and private research foundations. He owns more than 60 patents and patent applications and has founded several biotechnology companies.

At the University of Delaware, Kmiec runs a research lab that looks at some of the therapies for diseases such as Huntington's disease, spinal muscular atrophy and muscular dystrophy. He is a co-founder and chief scientific officer of Orphagenix Inc., a biotechnology company focused on correcting genes that cause "orphan diseases."

"If you look at Dr. Kmiec's experience in applied research leading to research-based economic development, he has been very successful," said Dr. Stephen Kopp, president of Marshall. "His area of expertise fits exactly what we need in the development of the biosciences. He is a grant-funded scientist who has the ability to build a successful team, leading to discoveries that are patentable and viable."

**"The research endowment and the state support, particularly from the legislature and Governor Joe Manchin, was an important part of the decision to join the team here."**

Dr. Eric Kmiec

# WVNANO UPDATE

## RESEARCHER JOINS INITIATIVE

New West Virginia University (WVU) biology professor Dr. Letha Sooter cites the tiniest of reasons for joining the university—nanotechnology, which is the study and manipulation of matter finer than the hair on your grandfather's scalp.

Sooter's postdoctoral research at Massachusetts Institute of Technology involved the study of glowing peptides on yeast that bind to airplane cracks to prevent crashes, but she said it was the opportunity to do research through the WVNano initiative that drew her to WVU.

"WVNano was a huge selling point for me," said Sooter. "I believe WVU's collaborative environment and state-of-the-art facilities will enable us to be leaders in today's research communities."

WVNano strives to accelerate research and education in the nanosciences and engineering. The initiative has received support from the National Science Foundation, the West Virginia Experimental Program to Stimulate Competitive Research (WVESPSCoR), WVU and the state of West Virginia.



## SHARED FACILITIES GAIN A CRITICAL CAPABILITY



A state-of-the-art device capable of composition and chemical state analysis recently was brought on line at West Virginia University as part of the WVNano initiative's shared facilities equipment suite. The device, a Physical Electronics 5000 VersaProbe, performs photoelectron spectroscopy (XPS), also known as electron spectroscopy for chemical analysis, and ultraviolet photoelectron spectroscopy.

The new equipment will provide researchers with an important tool to address challenges in nanoscale science and engineering. Fabrication facilities in the suite, which are available for use by the on- and off-campus technical community, include more than 2,200 square feet of clean room with wet chemical processing space and a wide variety of device fabrication tools. The facilities also feature several analysis/characterization tools.

For more information about the XPS system or the shared resource suite, please contact [kolin.brown@mail.wvu.edu](mailto:kolin.brown@mail.wvu.edu).

## NSF GRANT TO HELP STUDENTS STUDY IN CHINA

West Virginia University (WVU) faculty members involved in the WVNano initiative have been awarded a \$150,000 grant from the National Science Foundation to allow the university's science and engineering students to conduct research in China.

Each summer for the next three years, a research team of at least 10 graduate and undergraduate students from WVU will travel to Jilin University, located in the city of Changchun in northeast China, to perform interdisciplinary nanoscale materials research. The goal of the program is to help students learn to interact with people from other cultures, and to teach them to adapt to a variety of experimental environments and techniques.

The project is being led by Dr. James Lewis, associate professor of physics, and fellow WVU faculty members Dr. Boyd Edwards, Dr. Peter Gannett, Dr. David Lederman and Dr. Michael Shi.



## MARSHALL HELPS DEVELOP DEVICE TO HELP VISUALLY IMPAIRED



Imagine not being able to read the small screens found on everything from cell phones to iPods or from microwaves to life-saving diabetes equipment. Unfortunately, that is the reality for 20 million Americans who have trouble seeing even with the aid of glasses or contact lenses.

In June, the American Foundation for the Blind Technology and Employment Center (AFB TECH), along with Marshall University researchers and students, unveiled a new device that will help determine the level of contrast necessary to make digital displays usable by people with vision loss.

The device was developed by Marshall physicist Dr. Thomas Wilson and engineered by faculty and students at the university's College of Information Technology and Engineering in conjunction with AFB TECH.

"With the U.S. population aging and the vision loss numbers expected to increase substantially, more and more people will need for technology to be accessible," said Mark Uslan, AFB TECH director. "We hope this project will ultimately lead to manufacturing standards that ensure small screen displays are readable for everyone."

*Marshall University student Russell Farmer, left, watches as Lee Huffman of the American Foundation for the Blind Technology and Employment Center in Huntington demonstrates a new device for measuring the contrast of digital displays.  
Photo by Rick Haye, Marshall University*

## WVEPSCOR SPONSORS NATIONAL FACULTY DIVERSITY WORKSHOP

“If the U.S. is to improve its scientific and technological competitiveness in the long term, we must be proactive now in tapping into the vast pools of talent across all segments of our society.”

Dr. Paul L. Hill  
WVEPSCoR Director  
Vice Chancellor for Science and Research  
West Virginia Higher Education Policy Commission



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Photo Key: 1) Mary Hofle, College of Engineering, Idaho State University; 2) Dr. Patricia Galloway, vice chairman, National Science Board; 3) Dr. Ed Galindo, director, American Indian Education in Science Program, University of Idaho; 4) Dr. José Ulises Toledo, associate dean, West Virginia State University, and Michael Lee, executive director, Kentucky-West Virginia Alliance for Minority Participation; 5) Dr. Denise Barnes, program director, EPSCoR Office, National Science Foundation, and Steve Borleske, project director, Delaware EPSCoR; 6) Roundtable working session; 7) Dr. Molly Carnes, director, Women in Science and Engineering Leadership Institute, University of Wisconsin-Madison, and Dr. Jesse Thompson, assistant dean and coordinator of diversity programs, College of Agricultural, Consumer and Environmental Sciences, University of Illinois, Urbana-Champaign; 8) Dr. Calvin Mackie, founder, Channel ZerO



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More than 120 higher education policymakers, research administrators and faculty members from 25 states traveled to Charleston in October for a day-and-a-half workshop intended to help them recruit and retain more women, racial/ethnic minorities and people with disabilities for their faculties.

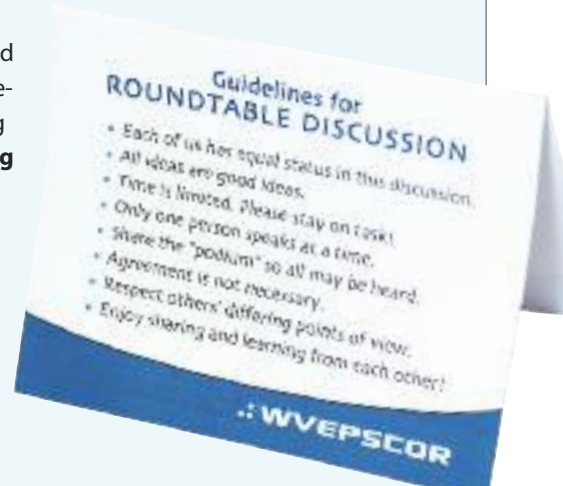
The workshop, "Building Diversity in Higher Education: Strategies for Broadening Participation in the Sciences and Engineering," was hosted by the West Virginia Experimental Program to Stimulate Competitive Research (WVESPSCoR) and featured sessions led by a number of nationally recognized diversity scholars.

According to Dr. Paul L. Hill, WVESPSCoR director and West Virginia Higher Education Policy Commission vice chancellor for science and research, the topic of faculty diversity is important because today's science and engineering faculties do not reflect the changing face of America.

"Studies show diverse work groups enrich academic departments and improve team problem-solving capabilities—a vital element in successful research programs," he said. "If the U.S. is to improve its scientific and technological competitiveness in the long term, we must be proactive now in tapping into the vast pools of talent across all segments of our society."

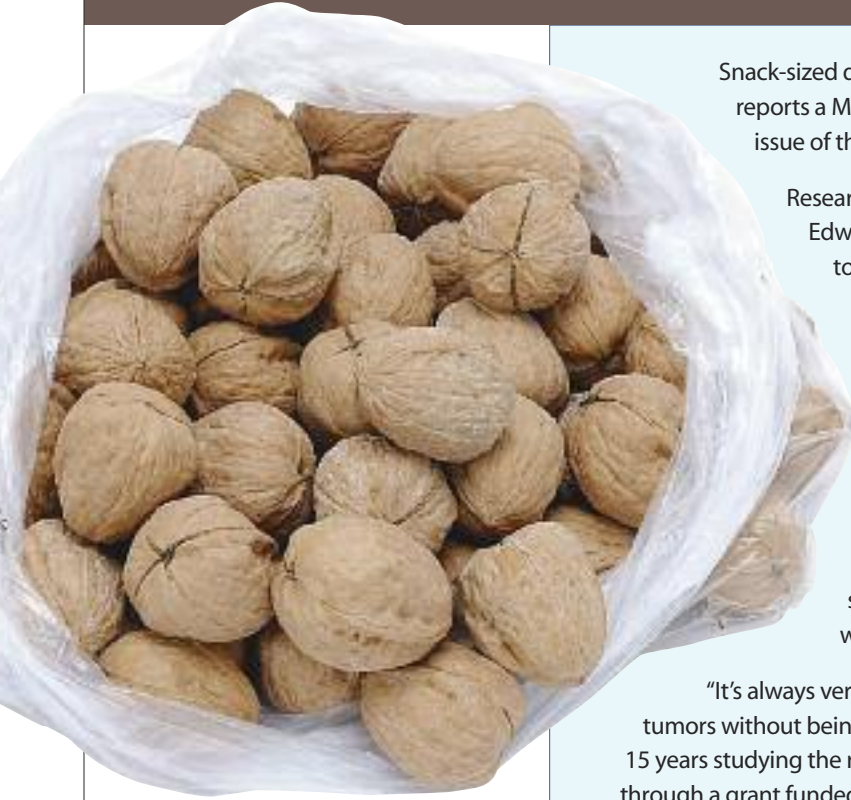
The workshop culminated in a roundtable session during which participants formulated prioritized lists of specific diversity policy and practice recommendations that can be implemented on the department, campus and state or systemwide level. A report summarizing the results of the working session is being prepared and will be made available in the Library at <http://www.wvresearch.org> in the coming weeks. Presentations from the workshop also are available on the website.

Support for the program was provided by the National Science Foundation. Co-sponsors included the Kentucky-West Virginia Louis Stokes Alliance for Minority Participation, the Marshall University ADVANCE program, West Virginia University and the West Virginia Higher Education Policy Commission.



Photos by John Sibold

## MARSHALL UNIVERSITY RESEARCHER FINDS EATING WALNUTS SLOWS CANCER GROWTH



Snack-sized quantities of walnuts slow cancer growth in mice, reports a Marshall University pilot study published in a recent issue of the peer-reviewed journal *Nutrition and Cancer*.

Researcher Dr. W. Elaine Hardman of the university's Joan C. Edwards School of Medicine said the study was designed to determine whether mice that got part of their calories by eating walnuts had slower breast cancer growth than a group eating a diet more typical of the American diet.

The mice ate a diet in which 18.5 percent of the daily calories—the equivalent of two servings for humans—came from walnuts. Tumors in the walnut-fed group took twice as long to double in size as tumors in the control group, the article reports. The study is believed to be the first to look at the impact of walnut consumption on cancer growth.

"It's always very good to find something that will slow the growth of tumors without being toxic chemotherapy," said Hardman, who has spent 15 years studying the role of diet in cancer. She was hired at the university through a grant funded by the state's Research Challenge Fund.

Walnuts have at least three components that could account for their cancer-slowing effect, Hardman said. They are high in omega-3 fatty acids, which have been shown to slow cancer growth. They also include antioxidants and components called phytosterols, both of which have shown cancer-slowing effects in other studies.

Medicine is increasingly looking at dietary changes as a way to reduce cancer, Hardman said.

"We're beginning to understand that your diet probably contributes to one-third to two-thirds of all cancers that develop, and making dietary changes to prevent cancer could do more to reduce the deaths from cancer than chemotherapy to treat cancer," she said.

Hardman's project was funded through grants from the American Institute for Cancer Research and the California Walnut Commission, neither of which had input on the interpretation or reporting of the findings.

## WV-INBRE FUNDS UC RESEARCH THAT COULD LEAD TO NEW TREATMENTS FOR DEPRESSION



Dr. Nina Zivanovic, assistant professor of pharmaceutical and administrative sciences at the University of Charleston, has received a \$10,000, one-year pilot grant from the West Virginia IDeA Network of Biomedical Research Excellence (WV-INBRE) to conduct research that may lead to new treatments for depression.

Her research will focus on how estrogen regulates the key components of the serotonin system in the brain.

"The serotonin system is involved in the pathogenesis of major depression, which is twice as prevalent in women as in men. The results of this study could help expand our knowledge of intracellular events involved in estrogen regulation of SERT and 5-HT autoreceptors," said Zivanovic. "This could ultimately lead to new, gender-specific approaches in the treatment of depression."

A program of the National Institutes of Health, WV-INBRE helps sponsor research at undergraduate institutions.

## ECOLOGIST WORKING WITH CHINESE SCIENTISTS TO EXPLORE EFFECTS OF NITROGEN ON PLANT LIFE

A Marshall University scientist has returned from China where he worked with a group of scientists who are studying, among other things, the effects of nitrogen on plant life.

Dr. Frank Gilliam, a professor of biological sciences at Marshall, was invited to visit the South China Botanical Garden in Guangzhou, China's third-largest city. The invitation came after Chinese researchers who had read several of his scientific publications contacted him and asked for his input.

In China, Gilliam was able to study the pristine 400-year-old Dinghushan Forest, a rare tract which, under the supervision of Buddhist monks, has been protected from any kind of agriculture, forestry or other human activity.

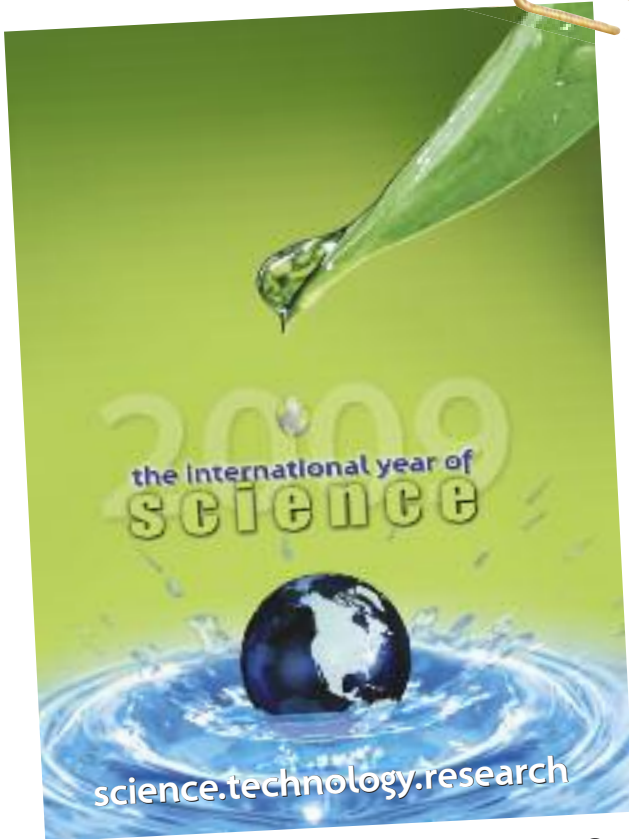
A paper Gilliam wrote last year examined the effect of nitrogen-laced rainfall, snow or fog on plant growth and diversity. He likens the effect to home gardeners over-fertilizing their gardens.

"Excess nitrogen in rainfall is basically pollution," he explained. "It can come from a variety of things, for example, auto exhaust or industrial activity. Nitrogen gets into the atmosphere and falls to the earth as rain with the result that it over-fertilizes the plants. There is less diversity and species are disappearing, not because they're being dug up or destroyed but because they can't handle the extra nitrogen."

As part of his trip, Gilliam presented a research seminar and is collaborating with his Chinese counterparts on a research paper to be published in a major journal.



*Marshall University ecologist Dr. Frank Gilliam, who recently traveled to China to work with scientists there, is shown in front of the 400-year-old Dinghushan Forest near Guangzhou, China. Photo by Xiankai Lu*



## STAR SYMPOSIUM 2009



joining forces 04.14.2009

charleston.wv

[www.wvresearch.org](http://www.wvresearch.org)

## MARSHALL RECEIVES FIRST "BUCKS FOR BRAINS" DONATION

Allied Realty of Huntington has made the first donation to Marshall University through West Virginia's new "Bucks for Brains" research trust fund initiative. The gift of \$100,000, announced in September by Allied Realty CEO/President Lake Polan III, is the first the university has received since the legislature established the trust fund earlier this year. The fund allocates \$15 million to Marshall and \$35 million to West Virginia University, to be matched by private contributions. The Allied Realty gift will support the new Marshall Institute for Interdisciplinary Research.

## LI SERVES AS PANELIST AT NANOMEDICINE PROGRAM

The Northern Virginia Technology Council invited Dr. Bingyun Li, assistant professor of orthopaedics at the West Virginia University School of Medicine, to be a panelist at its Cool Tech Nanomedicine event on Nov. 18 in McLean, Va. Li is a participant in WVNano, a statewide initiative aimed at advancing nanoscale science, engineering and education. The research in his group focuses on nanomedicine, infection prevention and nanotechnology sorbents.

## WVU STUDENTS SWEEP INTERNATIONAL COMPETITION

A trio of West Virginia University students took first place in their respective divisions at the recent annual research meeting of the Poultry Science Association held in Ontario, Canada. Graduate students Nancy Buchanan and Amanda Rack, along with undergraduate student Kelley Lilly, competed against others from around the world. All three are students in the university's Davis College of Agriculture, Forestry and Consumer Sciences. Lilly participated in the West Virginia Experimental Program to Stimulate Competitive Research (WVEPSCoR) Summer Undergraduate Research Experience the last two years.



Allied Realty Company CEO/President Lake Polan III, left, presents the first "Bucks for Brains" donation to Marshall University president Dr. Stephen Kopp. Looking on are Dr. John Maher, Marshall's vice president for research, second from left, and Dr. Ron Area, CEO of the Marshall University Foundation Inc., far right.

## NILES RECEIVES INTERNATIONAL AWARD FOR NUTRITION AND CANCER RESEARCH

Dr. Richard Niles, chairman of the Department of Biochemistry and Microbiology at Marshall University, received the international award Sebetia-Ter in May in Naples, Italy. The award is given to internationally renowned scientists and other professionals in the fields of aeronautics, medicine, biotechnology, engineering, politics, military service, architecture, literature, music and philosophy. Niles was recognized for his achievements in nutrition and cancer research.



## GRADUATE STUDENT TO RECEIVE NATIONAL AWARD FOR FORENSICS RESEARCH

West Virginia University graduate student Heidi Nawrocki is being recognized for her discovery of how to trace shards of glass back to a crime scene. She will receive the 10th annual Emerging Forensic Scientist Award at the American Academy of Forensic Sciences meeting in Denver in February 2009.

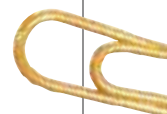
Nawrocki's research focuses on the differentiation of forensic glass samples using a technique called cathodoluminescence, which means the emission of light by an electron beam. She uses a scanning electron microscope to view the glass samples and a cathodoluminescence detector, which is capable of detecting the light given off by the glass.

## WVU TECH RECEIVES GRANT FOR RENEWABLE ENERGY RESEARCH

The West Virginia University Institute of Technology has received a \$25,000 grant from PPG Industries to allow continuation of the institution's research in clean coal and renewable energy. The funding, the first installment of a \$50,000 contribution, is part of a \$1.7 million campaign for the institute's new biochemical teaching and laboratory initiative.

## MARSHALL PROFESSOR RECEIVES DREYFUS FACULTY START-UP AWARD

Dr. Laura McCunn, an assistant professor in Marshall University's Department of Chemistry, has been named one of eight national recipients of a Camille and Henry Dreyfus Faculty Start-up Award. The unrestricted five-year grant provides McCunn \$30,000 to begin her research program. She began teaching at Marshall this fall, and is one of only five faculty members from a public institution to receive the award in the past five years.



## MARSHALL AND WVU DEDICATE NEW RESEARCH FACILITIES



The planned accreditation of Marshall University's engineering program moved closer to reality in August with the dedication of the **Arthur Weisberg Family Engineering Laboratories** on the university's Huntington campus. The \$4.2 million, 16,000-square-foot facility is named in honor of philanthropists Arthur and Joan Weisberg, owners of State Electric Supply Company. The new facility will house laboratories to support courses in material testing, soil mechanics, hydraulics and environmental engineering. The building also will have an electronic classroom, a balance room and a visualization lab.

On Aug. 13, West Virginia University dedicated the **Erma Byrd Biomedical Research Center**, named for the late wife of U.S. Senator Robert C. Byrd. The \$42 million center will house research laboratories for the university's Sensory Neurosciences Research Center, Center for Interdisciplinary Research in Cardiovascular Sciences and School of Pharmacy. It is also the future location of the Multiple Sclerosis and Neurodegenerative Diseases Research Center.



### The **Blanchette Rockefeller Neurosciences Institute** at

West Virginia University, founded in honor of the mother of U.S. Senator Jay Rockefeller, opened its doors to the public on Oct. 17. The 78,000-square-foot, \$30 million building provides state-of-the-art laboratory space and supports research activities for nearly 100 scientists and researchers working to find treatments for Alzheimer's disease and other neurological disorders. The institute is the only non-profit, independent institution in the world dedicated to the study of human memory and memory disorders.



Looking for Grant Opportunities?

If you are interested in receiving regular updates regarding grant opportunities from a variety of funders, including EPSCoR, the National Science Foundation, NASA, National Institutes of Health and others, contact Dr. Jan Taylor at [jan.taylor@wvresearch.org](mailto:jan.taylor@wvresearch.org).

## COMMENTARY

By Joe Manchin III  
Governor of West Virginia



### OUR YOUTH HAVE GREAT ENTHUSIASM FOR MATH AND SCIENCE

I imagine that most of us have great memories of lazy summers while growing up. We recall sleeping in, summer camps, family vacations, fishing and swimming, all while enjoying a few weeks off from school.

But recently, I was fortunate to meet a group of rising ninth-grade students from across the state who decided they'd spend part of their summers in a different and educationally enriching way. I met them at the Governor's School for Math and Science as part of their two-week session at the National Radio Astronomy Observatory (NRAO) at Green Bank.

The Governor's School for Math and Science was started by former Gov. Bob Wise for students who have completed the seventh or eighth grade. Today the program continues through sponsorship by the West Virginia Department of Education and the Arts, the West Virginia Experimental Program to Stimulate Competitive Research (WVESCO) and the West Virginia Department of Education.

Talented students apply to work with mentors and faculty on a specific research theme in a hands-on laboratory or field setting. Seventh graders apply to attend a nine-day session at West Virginia University (WVU) in early July, while the eighth graders may be selected to attend a 12-day WVU session or the 14-day session at NRAO.

While in beautiful Pocahontas County, I caught up with the nearly 60 students who were taking part in the program. I learned as much from them about our future as I hope they learned from me about our plans to create opportunities for them right here in the Mountain State. I was impressed by their eagerness to grasp new science and research concepts, which is essential if we expect our state to compete in the global economy.

Children from nations with booming populations, especially China and India, will be competing with our youth for jobs. Our kids face tougher competition than the generations before them. As leaders responsible for our children's growth, we must do a better job of encouraging those students who have interest or special skills in math and science to build upon those skills.

Placing them in a fantastic research setting like Green Bank and giving them an opportunity to learn from great scientists and professors does just that. It builds on their enthusiasm and encourages these bright young people to excel.

I also saw the same enthusiasm in their mentors. The scientists and instructors, along with me, sensed the energy of these kids, and we enjoyed the opportunity to see them blossom in such a fantastic setting.

There is no cost to students or their families for the program's tuition, room, meals, activities, books or instructional materials. For more information, visit <http://www.wvgovschools.org>.

*This article was previously published as the "Governor's Weekly Column."*



Photo by Steven W. Rotsch, Governor's Office

## FROM THE VICE CHANCELLOR FOR SCIENCE AND RESEARCH: *Valuing Diversity*



The statistics are eye opening.

By the year 2020, it is projected there will be a 77 percent increase in the number of Hispanics in the U.S., a 32 percent increase in the African-American population, and a less than one percentage point increase in the white population (U.S. Census Bureau). By 2050, 85 percent of entrants into our country's workforce will be people of color and women (Bostonworks.com).

Think about these statistics and what they mean. If we do not find a way to engage more women and underrepresented minorities in our nation's science and technology enterprise, it will be impossible for our institutions to succeed and for our country to be competitive in the new world order.

As this issue of *The Neuron* goes to print, we are just wrapping up a national workshop, "Building Diversity in Higher Education," hosted by our own West Virginia Experimental Program to

Stimulate Competitive Research (center spread). Our guests came from many different states, from Alaska to Maine, but we quickly found we all share the same challenges in recruiting and retaining diverse faculties and students in the sciences and engineering.

We heard from some of the leading scholars in the field of diversity, and worked together to come up with a list of policy and practice recommendations for departments, institutions and statewide higher education systems. A full report is forthcoming.

I can assure you that at the state level we will be looking at how to further address the need to build diversity in our research enterprise, and challenge you to take a leadership role in the issue at your own institution.

Carpe Diem,

Paul L. Hill, Ph.D.

Vice Chancellor for Science and Research  
West Virginia Higher Education Policy Commission

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