West Virginia Higher Education Policy Commission
Divison of Science and Research

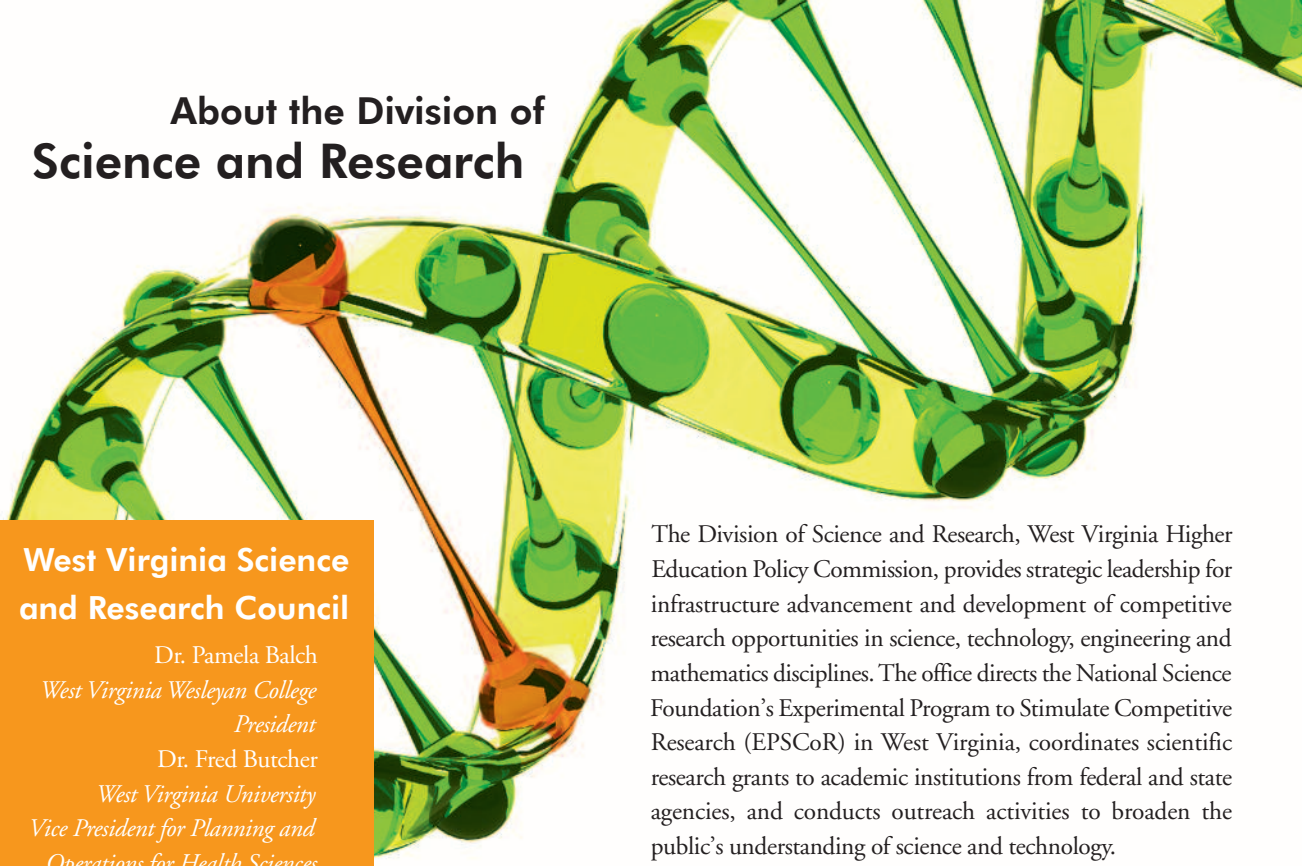
2009-2010

fiscal years in review

July 2008-June 2009

July 2009-June 2010

About the Division of
Science and Research



The Division of Science and Research, West Virginia Higher Education Policy Commission, 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.

West Virginia Science and Research Council

Dr. Pamela Balch
West Virginia Wesleyan College
President

Dr. Fred Butcher
West Virginia University
Vice President for Planning and Operations for Health Sciences

Jack Carpenter
Kicking Stones Inc.

Dr. Bojan Cukic
West Virginia University
Robert C. Byrd Professor of Computer Science and Electrical Engineering

Kelley Goes
West Virginia Department of Commerce, Cabinet Secretary

Kay Goodwin
West Virginia Department of Education and the Arts, Cabinet Secretary

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

Dr. John Maher
Marshall University
Vice President for Research

Dr. Brian Noland
West Virginia Higher Education Policy Commission, Chancellor

Dr. Steven Paine
West Virginia Department of Education
Superintendent

Dr. Curt Peterson
West Virginia University
Vice President for Research

Dr. Gary Rankin
Marshall University
Joan C. Edwards School of Medicine

Dr. Charles Somerville
Marshall University College of Science
Dean

Table of Contents

Photos – West Virginia Department of Commerce, West Virginia University and Alex Wilson

"[STEM] fields set the stage for emerging opportunities in West Virginia and hold the key to innovation. Fortunately, we have a strong population of faculty members and students committed to these areas."

Brian Noland, Ph.D.
Chancellor, Higher Education Policy Commission

The Higher Education Policy Commission has a multifaceted approach to fostering academic achievement and enriching economic growth in West Virginia. Our master plan for higher education sets a public agenda for how to best serve the needs of our state's citizens, and it envisions a vital role for higher education in a more diverse economy.

By focusing on five fundamental areas – economic growth, college access, cost and affordability, learning and accountability, and innovation – we are working to help our institutions provide the best education possible to a growing number of West Virginians.

A crucial piece of our efforts is encouraging learning in science, technology, engineering and mathematics (STEM). These fields set the stage for emerging opportunities in West Virginia and hold the key to innovation. Fortunately, we have a strong population of faculty members and students committed to these areas.

The Commission's Division of Science and Research plays a central role in expanding interest in STEM fields. Through the combination of outreach and coordinating competitive research dollars to our institutions through federal and state programs, we are attracting world-renowned scientists to our state and training the next generation for a high-tech economy. When combined with the Commission's work to increase access to postsecondary education, encourage college completion and leverage opportunities at the new West Virginia Education, Research and Technology Park, you have a formula that will benefit our state for generations to come.

These advancements are only possible because of visionary leadership from our federal and state representatives. I look forward to working with them and all West Virginians as we continue down this exciting path.

Brian E. Noland, Ph.D.
Chancellor, West Virginia Higher Education Policy Commission

The past two years were bolstered by remarkable investments in scientific research in West Virginia. Our work under the 2006 National Science Foundation Research Infrastructure Improvement (RII) grant continued, while we successfully secured more federal funds and issued awards through the state's Research Trust Fund and Research Challenge Fund.

As a result, West Virginia's researchers have been given the green light to do their job – and they're doing it well. Not only are they conducting work that could revolutionize a number of industries, but they are successfully competing for additional support that further fuels innovation in our state.

Faculty members participating in the $9 million RII award alone attracted more than $40 million in additional funds to West Virginia – evidence that our research institutions are catalysts for growth. While we have a great deal of work to do to ensure West Virginia's economy is diverse and prosperous, we know we're making the right kind of commitments to reach that goal.

We took a historic step in early 2010 when the Higher Education Policy Commission accepted the technology park in South Charleston, W.Va. as a donation from The Dow Chemical Company. The new West Virginia Education, Research and Technology Park is a place where we can translate ideas in the higher education research setting into patentable results.

At the Commission, we are working to increase students' access to postsecondary education. We're funding scientific research and student opportunities in STEM fields. And now, we're providing a site for commercialization, which is a final ingredient for higher education-fueled economic growth.

I eagerly look forward to the years ahead. If the current trends continue, I believe our future is very bright.

Paul L. Hill, Ph.D.
Vice Chancellor for Science and Research

"While we have a great deal of work to do to ensure West Virginia's economy is diverse and prosperous, we know we're making the right kind of commitments to reach that goal."

Paul L. Hill, Ph.D.
Vice Chancellor for Science and Research

Highlights FY 2009

July 2008

The West Virginia Higher Education Policy Commission files legislative rules for the Research Trust Fund with the Secretary of State's office. This followed the State Legislature's passage of Senate Bill 287, which established the fund to match state dollars with private donations to encourage research primarily at West Virginia University and Marshall University.

October 2008

More than 120 higher education policymakers, research administrators and faculty members from 25 states meet in Charleston for a workshop, "Building Diversity in Higher Education: Strategies for Broadening Participation in the Sciences and Engineering," hosted by WV EPSCoR and featuring nationally-recognized diversity scholars.

November 2008

Governor Joe Manchin announces that West Virginia University and Marshall University landed world-class cancer and gene repair researchers as the first hires through the state's Eminent Scholars Recruitment and Enhancement initiative – Dr. J. Michael Ruppert at the Mary Babb Randolph Cancer Center at WVU and Dr. Eric Kmiec at the Marshall Institute for Interdisciplinary Research.

March 2009

As part of the annual Undergraduate Research Day at the State Capitol, Governor Joe Manchin presents 12 grants to advance scientific research at West Virginia's colleges and universities. The grants totaled more than $770,000 and were funded competitively through the state's Research Challenge Fund and the West Virginia Department of Education and the Arts.

April 2009

Nearly 150 members of West Virginia's higher education, academic research, high-tech business and government communities gather in Charleston for the statewide biennial Science, Technology and Research (STaR) Symposium hosted by the Division of Science and Research.

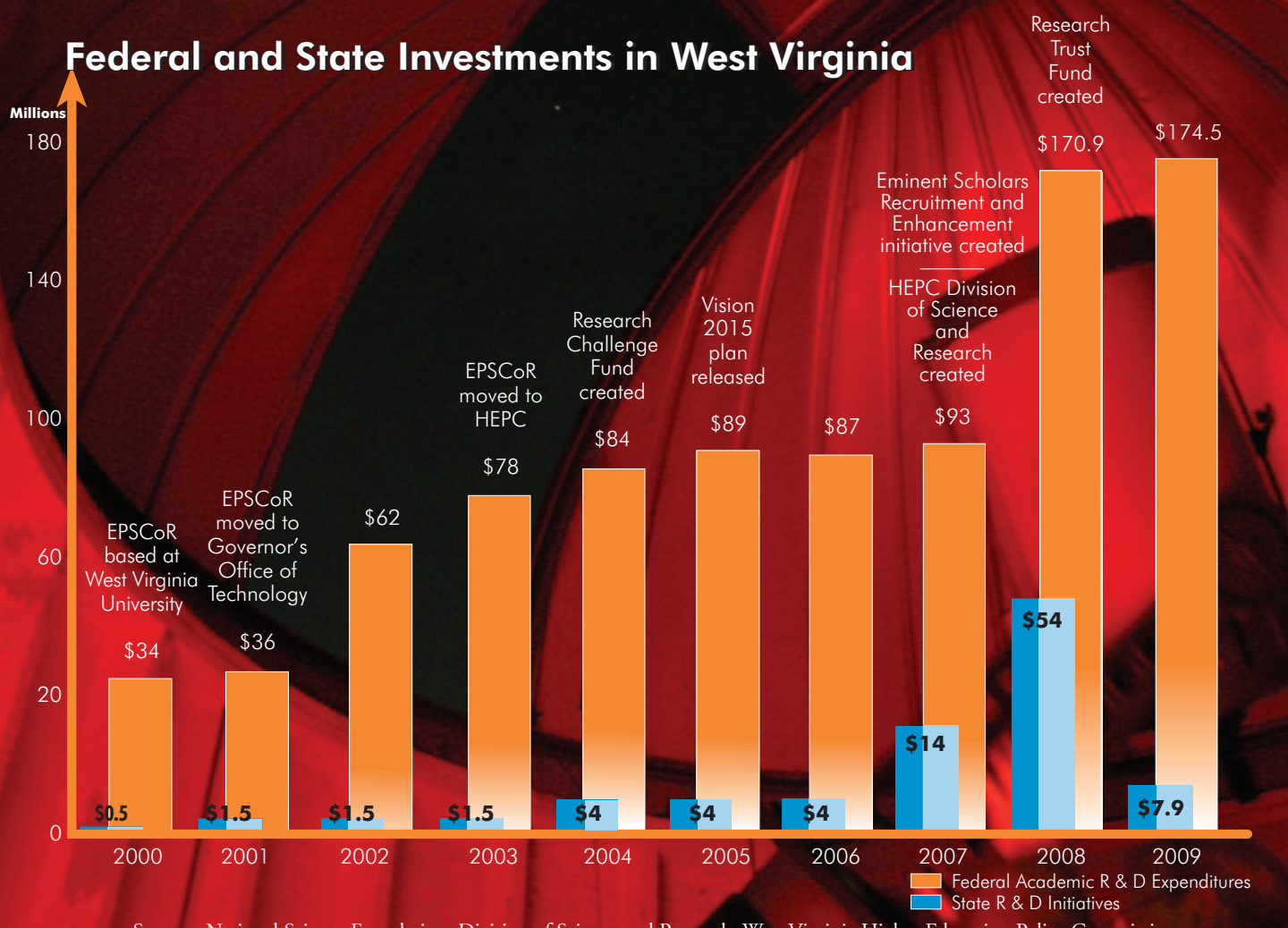
May 2009

Governor Joe Manchin announces that West Virginia is making progress toward its research goals, citing data from the National Science Foundation that revealed expenditures at colleges and universities in the state increased by 24 percent between 2004 and 2007.

June 2009

The Division of Science and Research awards Mini-Grants totaling $27,500 to researchers at Marshall University, the West Virginia School of Osteopathic Medicine and the West Virginia University Institute of Technology to aid in the preparation of research or equipment proposals.

Federal and State Investments in West Virginia



Sources: National Science Foundation; Division of Science and Research, West Virginia Higher Education Policy Commission

Highlights FY 2010

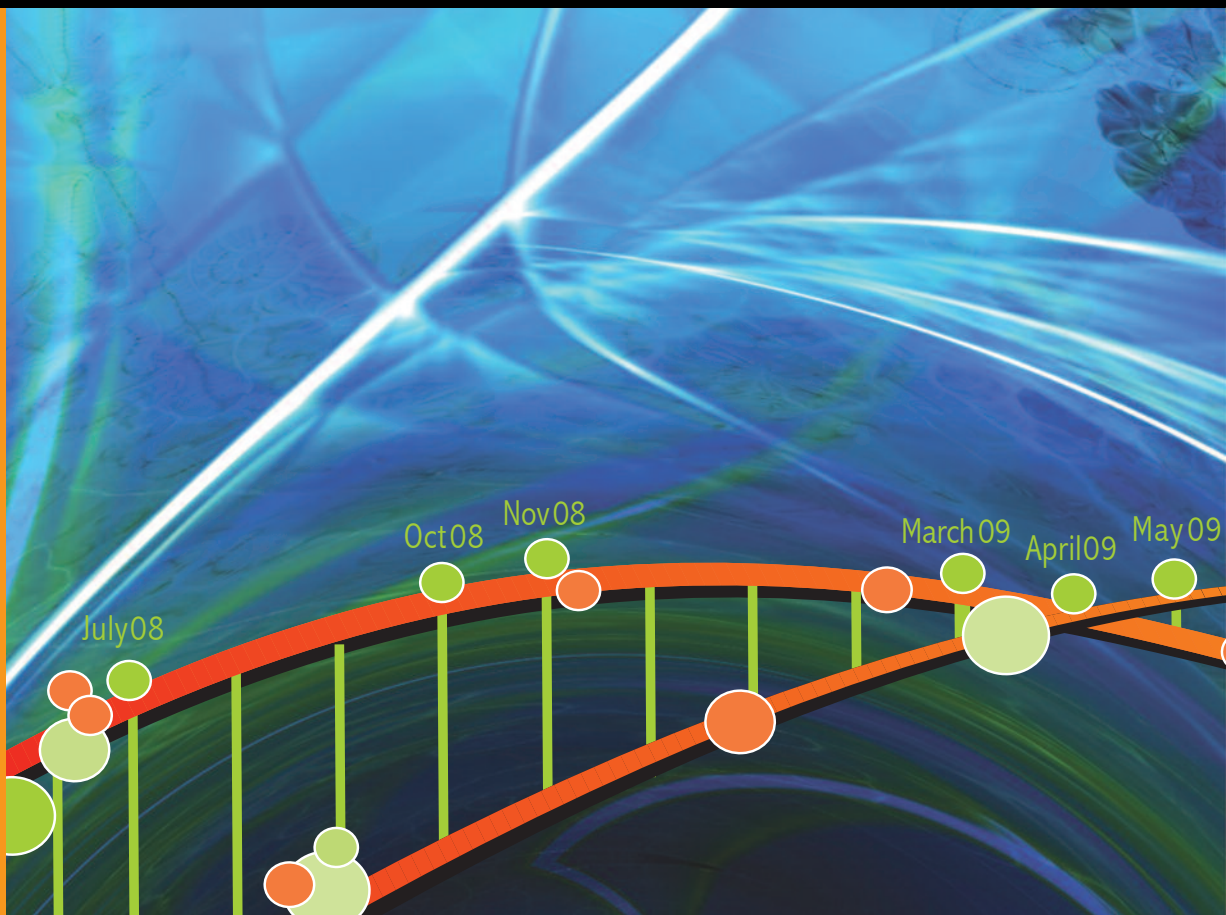
September 2009
U.S. Senator Jay Rockefeller and Governor Joe Manchin announce that the Higher Education Policy Commission received two major research infrastructure grants from the National Science Foundation's EPSCoR program worth more than $4.4 million – one to build up cyberinfrastructure, and a second to extend ongoing biometrics research.

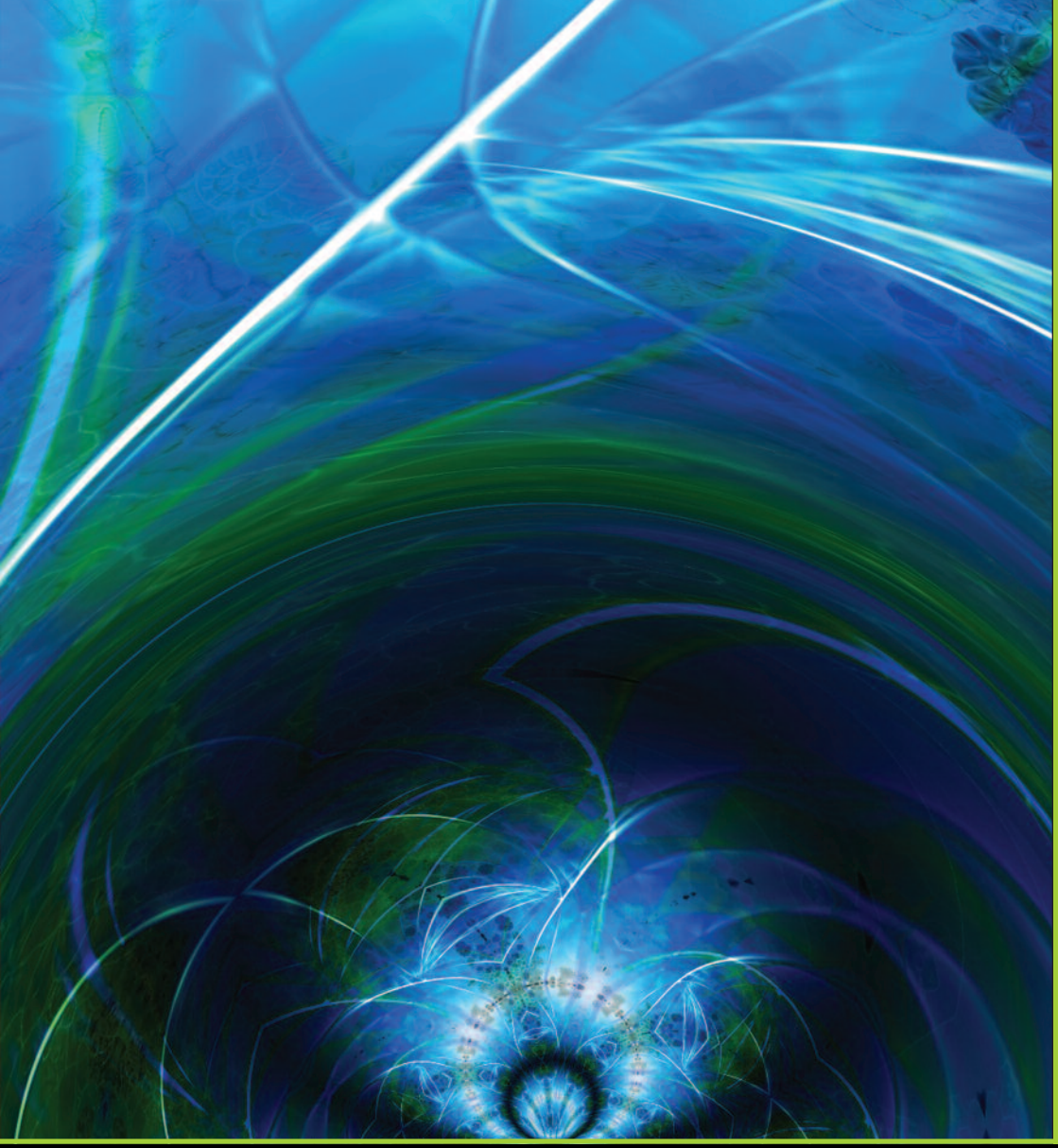
October 2009
The West Virginia Science and Research Council convenes its first meeting in Charleston and approves bylaws. The council was established earlier in the year through the passage of House Bill 3229 by the West Virginia Legislature.

November 2009
The Division of Science and Research awards the first two competitive grants supported through interest earned on the Research Trust Fund to Concord University and West Liberty University. Each university received $100,000 through the program's interest account to be matched by private donations.

January 2010
In conjunction with Undergraduate Research Day, Governor Joe Manchin presents nearly $3 million in state and federal grants to faculty from higher education institutions across West Virginia. The grants were funded through the state's Research Trust Fund and Research Challenge Fund, the West Virginia Department of Education and the Arts and the West Virginia IDeA Network of Biomedical Research Excellence.

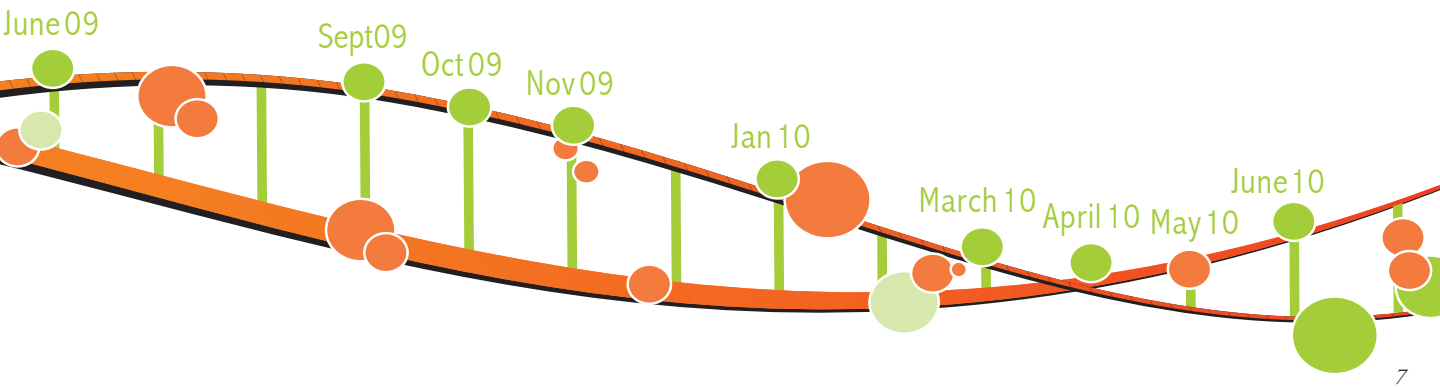
March 2010
With support from Governor Manchin, the Higher Education Policy Commission votes unanimously among participating members to approve a donation of facilities and property at the technology park in South Charleston from Union Carbide Corporation, a subsidiary of The Dow Chemical Company.





April 2010
The Division of Science and Research announces another round of mini-grant award winners. Eight faculty members from West Virginia University, Marshall University the West Virginia University Institute of Technology and the University of Charleston received $5,000 in summer stipends to prepare proposals.

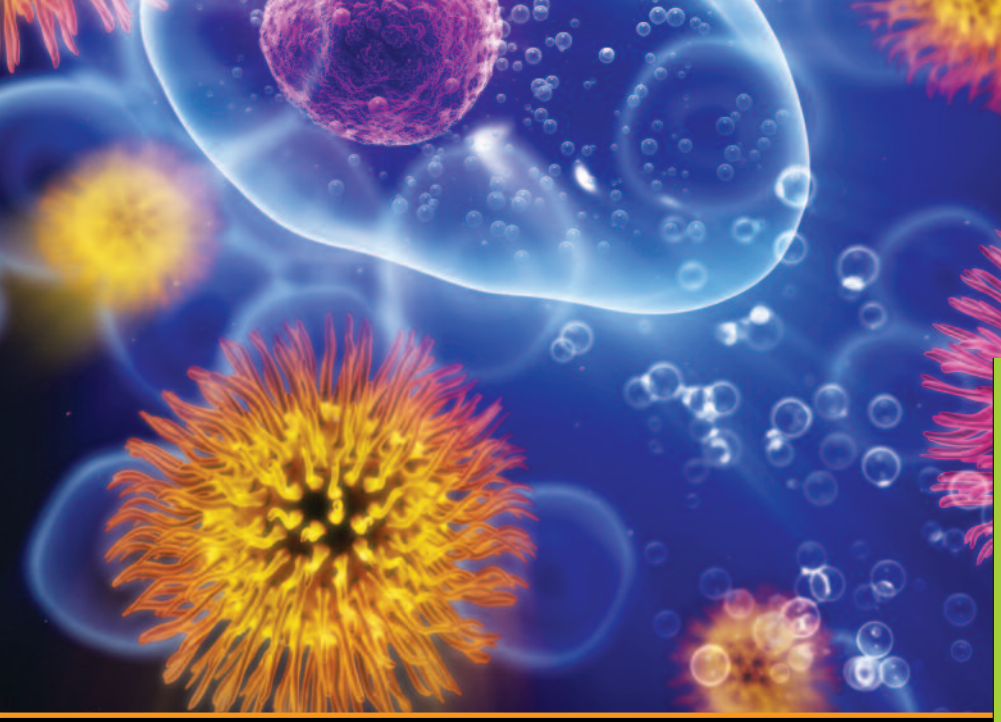
May 2010
The Division of Science and Research receives initial word from the National Science Foundation regarding two upcoming EPSCoR grants: a $20 million Research Infrastructure Improvement award – the largest NSF grant in state history – to boost academic research in bionanotechnology and upgrade infrastructure at West Virginia University, Marshall University, West Virginia State University and other institutions; and, a nearly $1.2 million award through the American Recovery and Reinvestment Act of 2009 to enhance cyberinfrastructure across the state's higher education system.



Selected Researcher Profiles

From studies involving structures one-one thousandth the width of a human hair to research aimed at improving treatments for childhood leukemia, revolutionary 3-D visualization technology and important work on gene modification, West Virginia's leading scientists are working at the forefront of science and technology. Knowing that their work has the potential to better treat diseases, make sources of energy more efficient and diversify West Virginia's economy, these researchers are leveraging state and federal investments to make new discoveries and train tomorrow's high-tech workforce.

The following profiles highlight some of these researchers – faculty members from West Virginia University and Marshall University whose research has been funded through the National Science Foundation's West Virginia Experimental Program to Stimulate Competitive Research (WV EPSCoR), the West Virginia Research Challenge Fund, the state's Eminent Scholars Recruitment and Enhancement Initiative and the West Virginia Research Trust Fund.



Searching for Tiny Discoveries with Far-Reaching Results

West Virginia University's WVNano initiative is comprised of faculty members with various backgrounds interested in the same goal – achieving discovery and innovation in nanoscale science, engineering and education. WVNano was elevated to a statewide initiative through a National Science Foundation (NSF) Research Infrastructure Improvement (RII) award to WV EPSCoR.

As part of West Virginia's RII program, Next Generation Biometrics, and under the recent leadership of Dr. David Lederman, WVNano has honed in on chip-level integrated recognition systems capable of rapid and renewable direct detection of a spectrum of molecular targets. These areas are of great interest to the security, defense and health communities.

Dr. David Lederman

"West Virginians can rest assured that WVNano will continue making a significant impact on the economic well-being of the state by using the laws of nature at the nanoscale to develop new technologies."

Dr. David Lederman
WVNano

Blossoming Careers:

Among WVNano's growing participants are three faculty members, recruited to WVU through the EPSCoR RII program, who have received prestigious NSF CAREER awards since arriving at the institution. Dr. Feruz Ganikhanov, Dr. Xiaodong Michael Shi and Dr. Sergei Urazhdin were recognized as junior faculty who exemplify the role of teacher-scholars through the integration of education and research.

Dr. Joan Wilson

Finding Therapies and Identifying Causes for Genetic Diseases

The Marshall Institute for Interdisciplinary Research (MIIR), created at Marshall University in 2008 through the West Virginia Research Trust Fund, is home to two renowned scientists – Dr. Eric Kmiec and Dr. Joan Wilson – whose work in human genomics has remarkable potential for people suffering from genetic afflictions.

Kmiec and Wilson, both of whom are supported under the state's Eminent Scholars Recruitment and Enhancement initiative, are focused on developing new approaches to genetic diseases, such as sickle cell anemia and muscular dystrophy. Through gene repair, they have been working to discover ways to reverse the mutations inside the cell that cause these disorders and help alleviate some of the symptoms. Through gene modification, the scientists are working to better understand the function of genes in a wide variety of organisms.

"West Virginia has an enormous amount of potential for biotechnology and for innovation in general. We hope to help provide a portal to allow good students and scientists to emerge and grow."

Dr. Eric Kmiec
Marshall Institute for Interdisciplinary Research

Dr. Eric Kmiec

Dr. Scot Remick

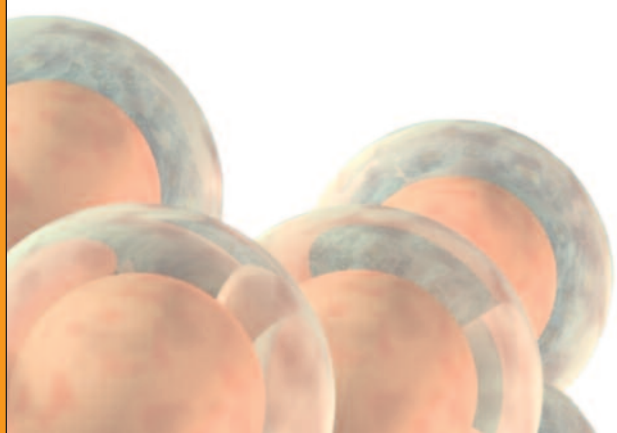
"Americans' hopes and dreams of more effective cancer treatments are especially acute in West Virginia, where the death rate from cancer is fourth in the nation. No one is working harder on the problem than doctors and scientists at the Mary Babb Randolph Cancer Center at West Virginia University."

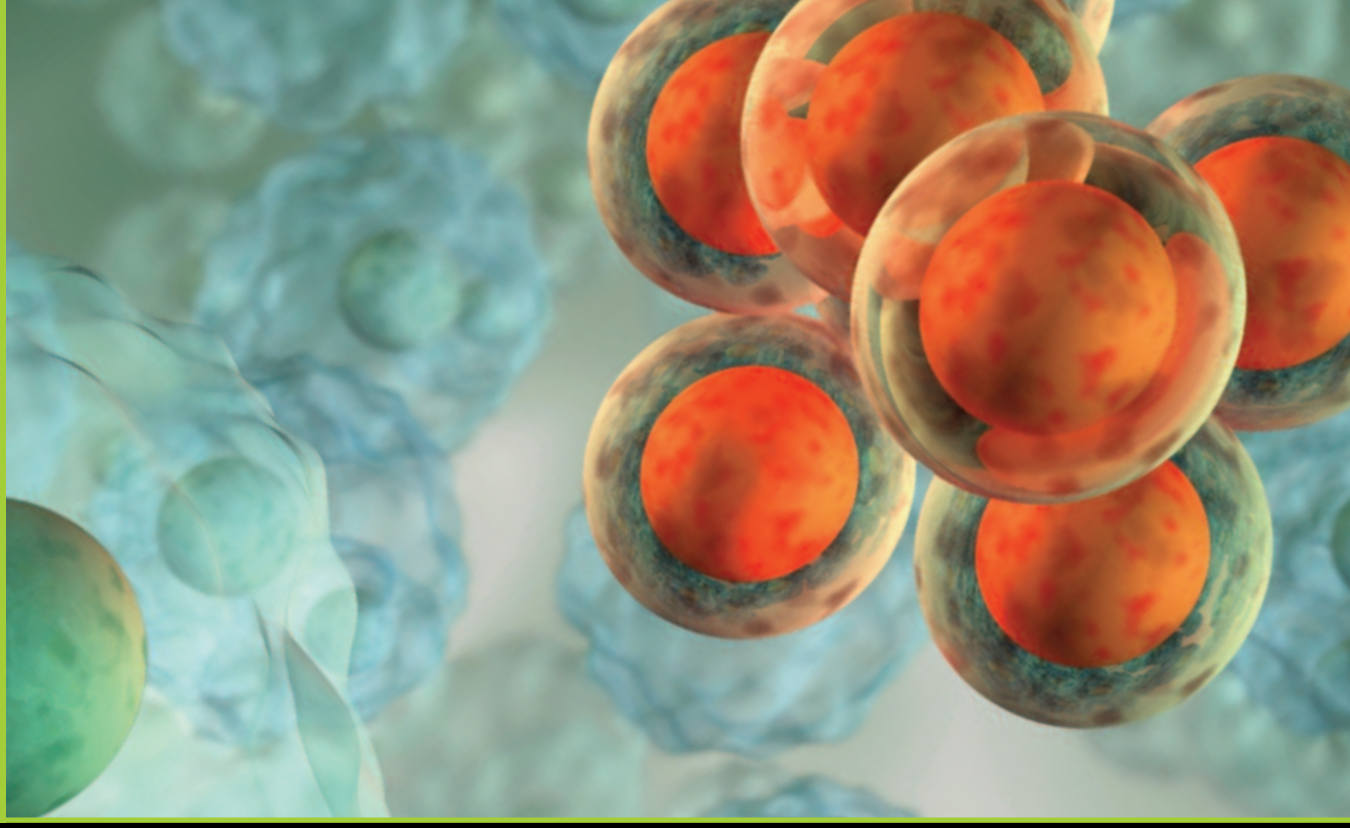
Dr. Scot Remick
West Virginia University

Leading the Way in Cancer Research

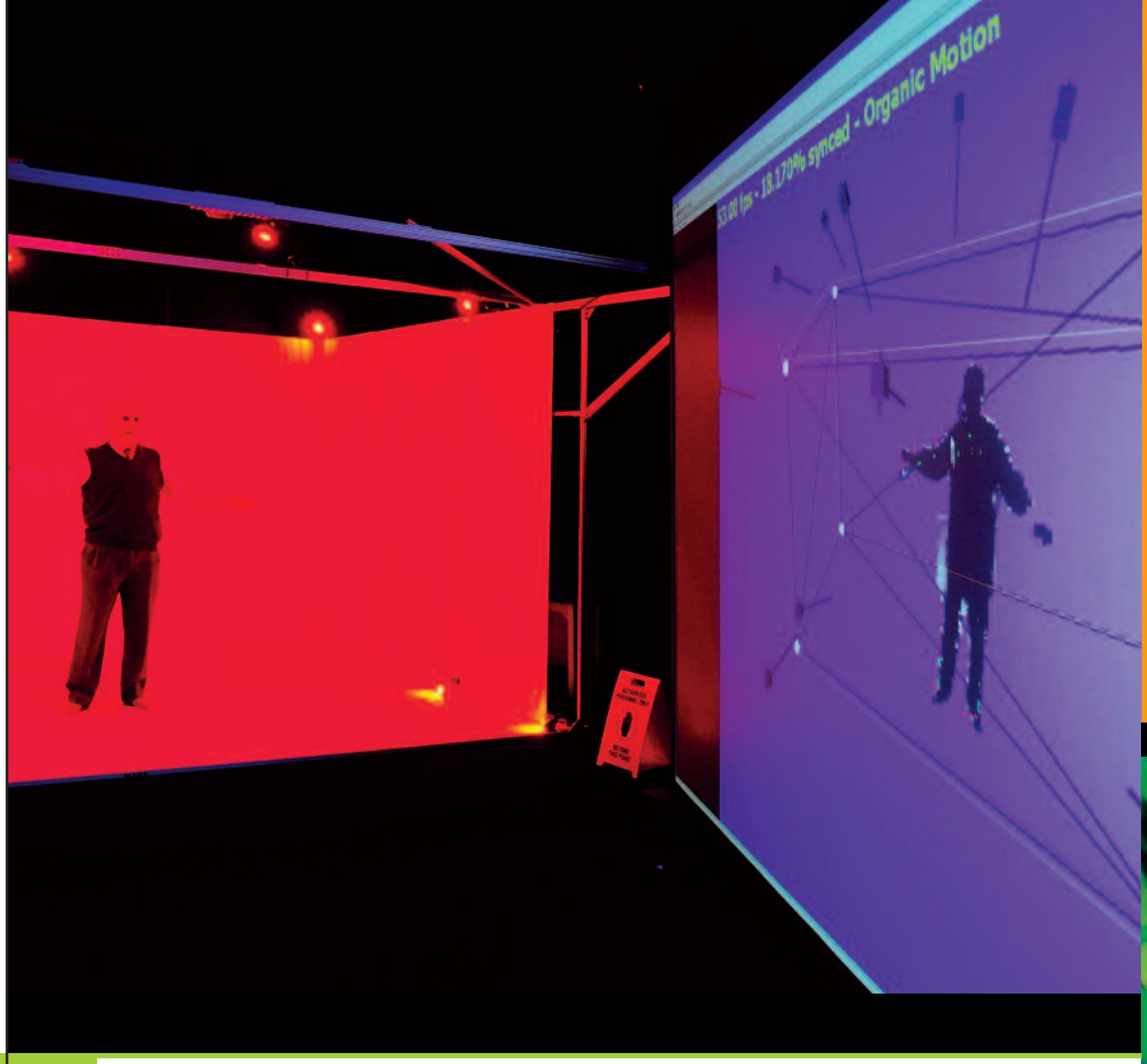
Under the leadership of Dr. Scot Remick and Dr. Laura Gibson, West Virginia University's Mary Babb Randolph Cancer Center is expanding its research portfolio – which includes studies on enhanced care for breast cancer, ways to improve treatment for childhood leukemia and bettering the survival rate in patients with recurring lung cancer.

Remick was hired under the state's Eminent Scholars Recruitment and Enhancement initiative, while Gibson was named the first Alexander B. Osborn Distinguished Professor in Hematological Malignancies Research in 2009. Her professorship was made possible by a donation from the Alexander Bland Osborn Trust and a match from West Virginia's Research Trust Fund.





Dr. Laura Gibson



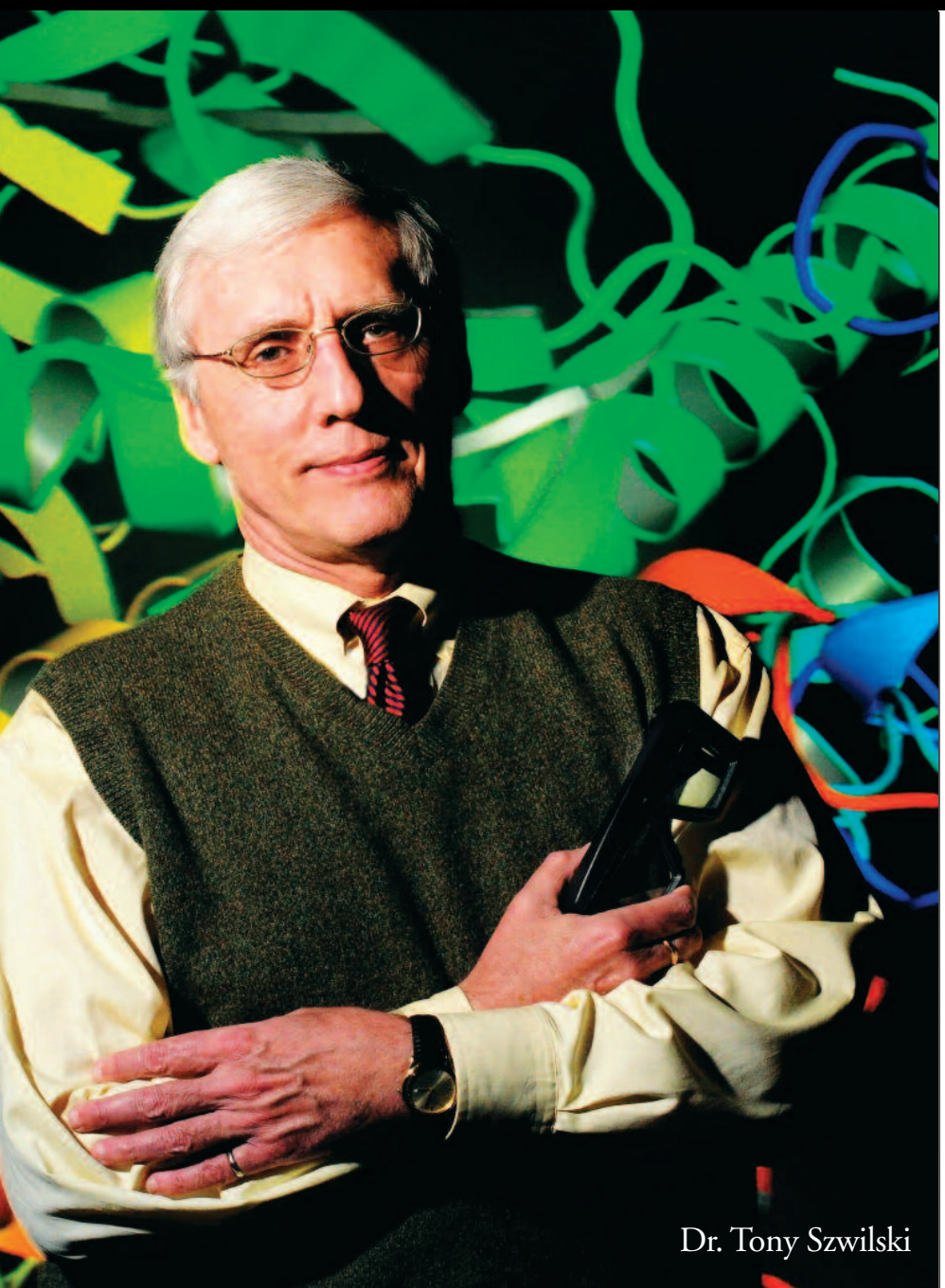
Expanding Technology to Achieve Visualization

The National Science Foundation awarded WV EPSCoR a $2.6 million grant in 2009 for a project, the Cyberinfrastructure for Transformational Scientific Discovery in West Virginia and Arkansas (CI-TRAIN), to promote advanced supercomputing at higher education institutions.

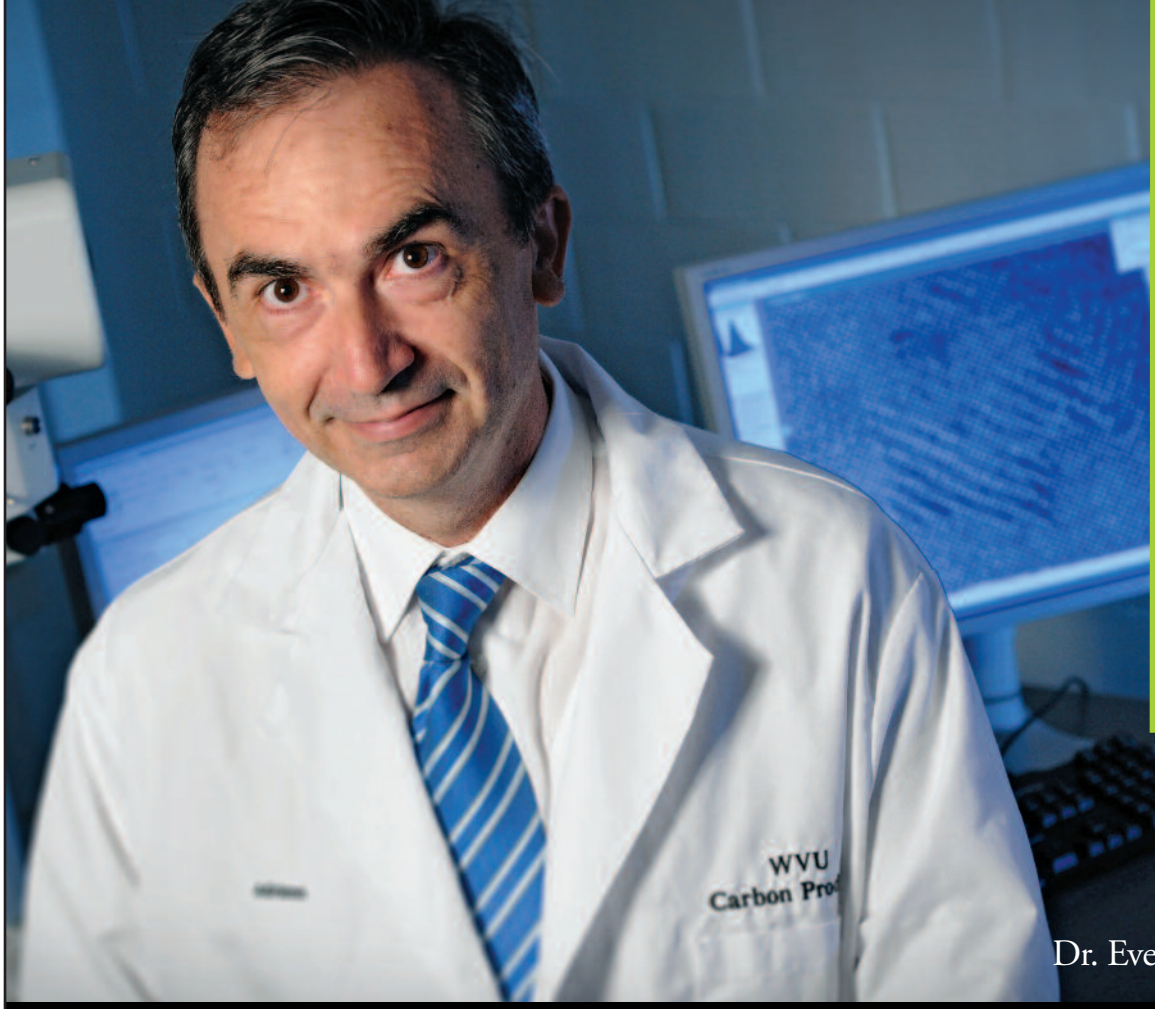
As part of this award, key hardware, connectivity and software totaling approximately $534,000 were added to the visualization lab at Marshall University's Center for Environmental, Geotechnical and Applied Sciences, led by Dr. Tony Szwilski. This state-of-the-art lab has a large screen worth $470,000, two high-end projectors and a full supply of 3-D glasses. With stereo sound and high-definition images, users experience an immersive virtual research, conferencing and training environment that can accelerate innovation and foster regional economic growth.

"The bottom line in this economic development project is to help businesses, create new businesses and, in the end, create new jobs."

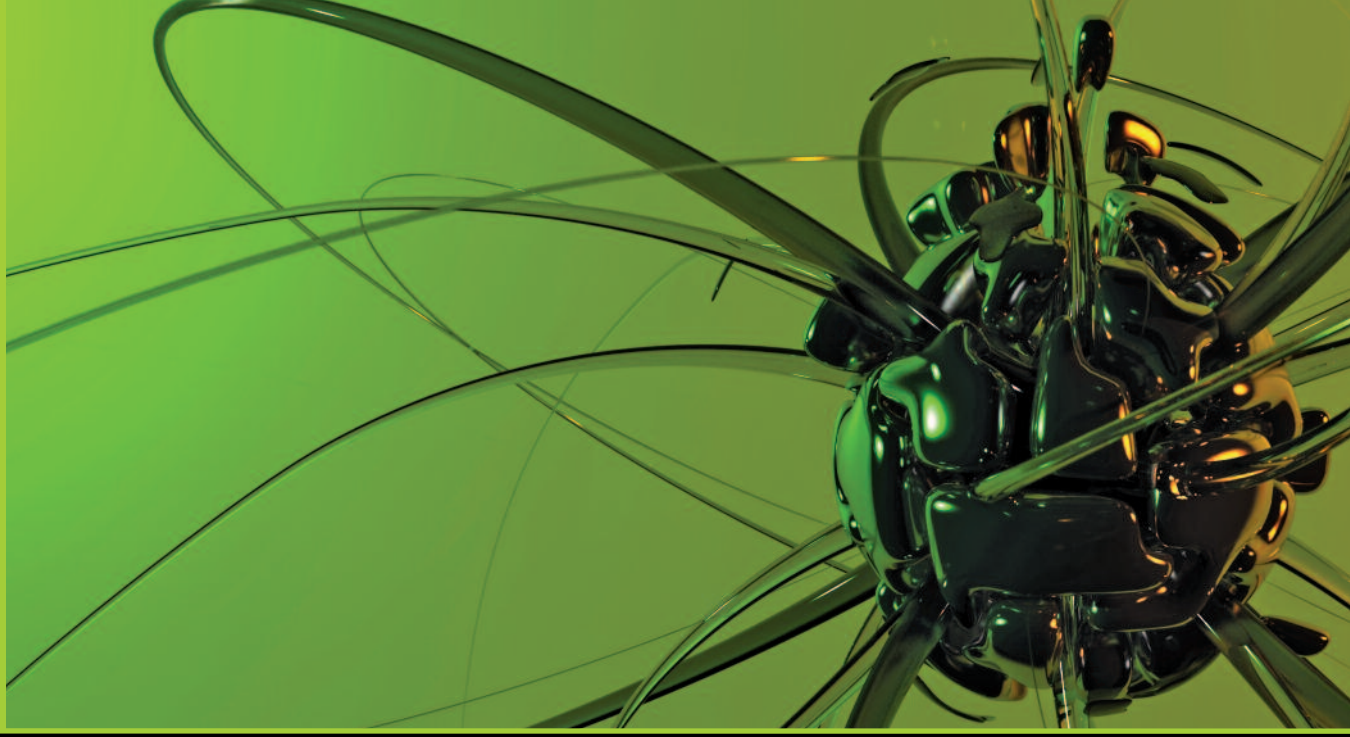
Dr. Tony Szwilski
Marshall University



Dr. Tony Szwilski



Dr. Ever Barbero



Tackling Today's Global Energy Problems

Through a five-year Research Challenge Grant worth $499,840, Dr. Ever Barbero of West Virginia University's College of Engineering and Mineral Resources established the university's Energy Materials Science and Engineering Program.

Energy materials are materials for energy conversion, utilization, saving, efficiency and storage. The research group is developing energy efficient materials for everything from fuel cells to turbines, batteries, window coatings and insulation. The program's objective is to develop a self-sustaining research and graduate education program in energy materials, complemented by industry support, intellectual property development and technology transfer activities.

"Today's global energy challenges make this a critical area of investigation. Our aim is to develop improved materials to enhance the efficiency of energy generation and usage."

Dr. Ever Barbero
West Virginia University

Goals

- Sponsor and maintain world-class research
- Develop academic resources, a skilled workforce and a competitive research infrastructure
- Encourage the transfer of technology to support economic growth, jobs and life enhancement
- Encourage participation of K-12, women, rural under-served and minorities in science, technology, engineering and mathematics
- Maintain a focus within state government to attain these goals statewide

Experimental Program to Stimulate Competitive Research

West Virginia is one of 27 states and territories that participate in the National Science Foundation's Experimental Program to Stimulate Competitive Research (EPSCoR) initiative. In West Virginia, EPSCoR is administered by the Higher Education Policy Commission's Division of Science and Research and overseen by the West Virginia Science and Research Council.

The National Science Foundation established EPSCoR in 1979 in response to congressional concerns about the geographic concentration of federal support for academic research. The program is intended to enhance the research capability of scientists in states that traditionally have lacked strong university-based research efforts and help them compete more successfully for a portion of the federal academic research and development budget.

The program helps eligible states improve their competitiveness largely through Research Infrastructure Improvement (RII) awards. These awards, of up to $4 million annually for up to five years, support academic research infrastructure improvements in areas selected by the state as critical to its long-term science and technology competitiveness and economic development.

West Virginia's second RII award, received from the NSF in May 2006, spanned through June 2010. This project aimed to propel West Virginia researchers toward greater competitiveness in cutting-edge nanoscale science. Upon its conclusion, the state received its third RII award worth $20 million – the largest NSF award in state history – to boost academic research in bionanotechnology over the next five years.

The primary institutions participating in the RII programs are West Virginia University, Marshall University and West Virginia State University.

American Recovery and Reinvestment Act of 2009

On February 13, 2009, Congress passed the American Recovery and Reinvestment Act (ARRA) of 2009 at the urging of President Barack Obama, who signed it into law four days later. A direct response to the economic crisis, the ARRA has three immediate goals:

- Create new jobs and save existing ones
- Spur economic activity and invest in long-term growth
- Foster unprecedented levels of accountability and transparency in government spending

As part of this, the ARRA works to stimulate the economy by supporting higher education and scientific research. Higher education and research initiatives in West Virginia have received 80 awards under the ARRA, totaling more than $43 million.

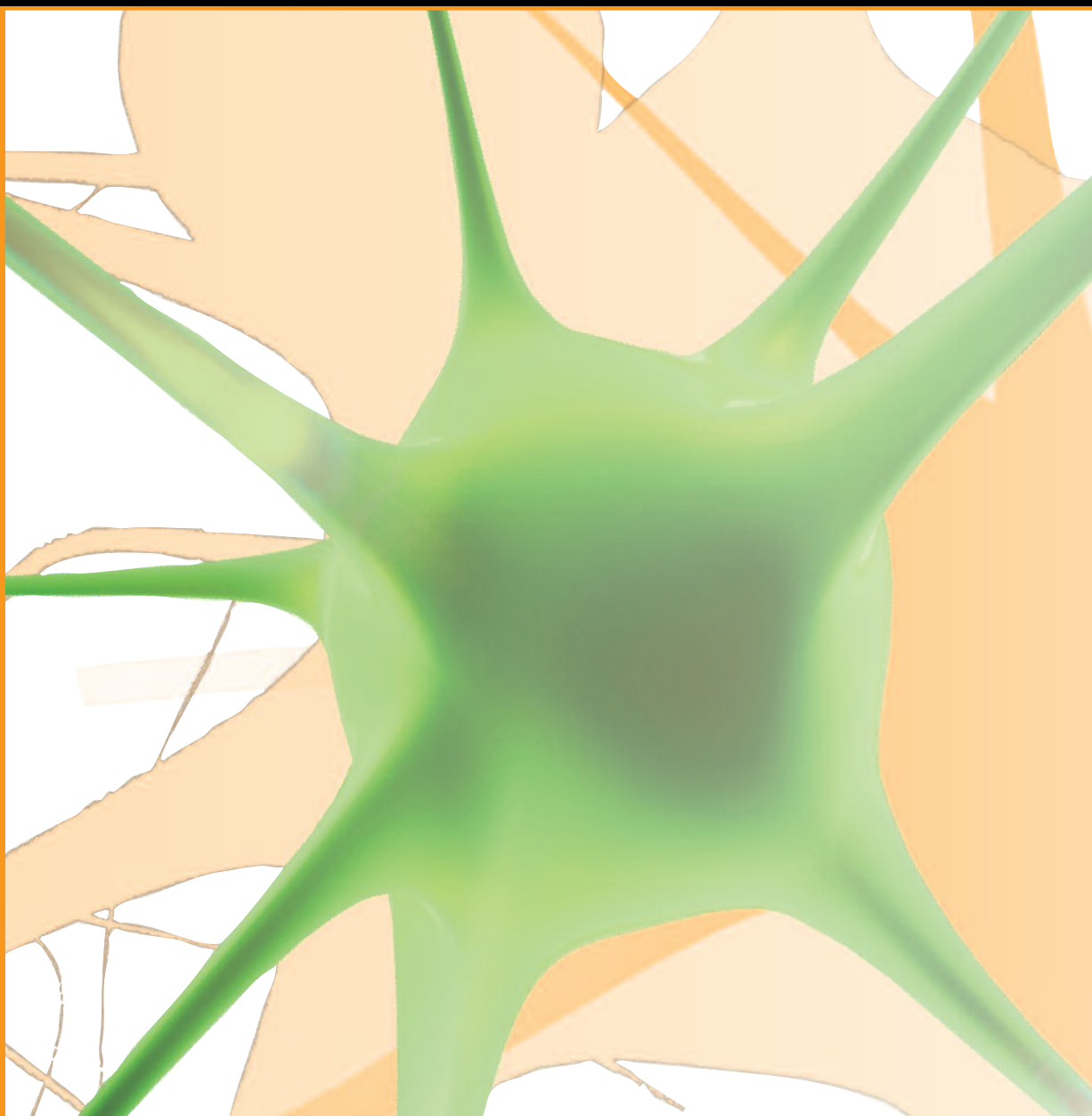
With funding filtering through the National Science Foundation, National Institutes of Health, Department of Energy, Department of Labor and other federal agencies, supported areas in West Virginia include major facility upgrades, including a $14.5 million biomedical research facility at West Virginia University; equipment, including a $930,058 Confocal/Multiphoton Microscope to advance cellular and physiological research at Marshall University; and research expansion, including $1.2 million at WVU to develop geothermal energy research and $3 million for Marshall to expand biomedical research.

West Virginia Research Challenge Fund

The State's Research Challenge Fund provides the foundation for many of the competitive grant programs administered by the Division of Science and Research. The fund's establishment in 2004 by the West Virginia Legislature is evidence of West Virginia's ongoing commitment to supporting science and technology research and education.

The largest awards the Division sponsors through the fund are Research Challenge Grants, which support the creation of research centers and foster economic development and workforce advancement at the state's two research universities, West Virginia University and Marshall University. Among other programs supported by the fund are Instrumentation Grants, which fund scientific equipment for advanced undergraduate laboratories; Innovation Grants, which fund creative improvements in scientific equipment and facilities, curriculum, classroom instruction or delivery; and Mini-Grants, which provide summer stipends for faculty members to prepare research or research equipment proposals.

More than $22 million was awarded from the Research Challenge Fund over fiscal years 2005-2010, supporting 19 institutions across West Virginia.



Goals

- Secure a larger share of federal and foundation research funds
- Increase the institutions' volume of intellectual property creation, patenting and licensing
- Enhance the stature of West Virginia University and Marshall University as vibrant, world-class research institutions
- Attract other talented faculty and graduate students to West Virginia
- Foster new companies and create new collaborations with industry to commercialize technologies
- Create new economic opportunities and jobs for West Virginians

Eminent Scholars Recruitment and Enhancement Program

Governor Joe Manchin and the West Virginia Legislature set aside an additional $10 million for research in fiscal year 2008. This one-time funding was in addition to the state's ongoing commitment through the Research Challenge Fund and has been used to further the goals of the state's strategic plan for building research infrastructure.

The funding supports an Eminent Scholars Recruitment and Enhancement initiative aimed at increasing the doctoral-level workforce at the state's two research universities. The program allowed the institutions to hire a total of 12 scholars with demonstrated research competitiveness in specialties that help the universities build on their core research strengths.

The institutions received $5 million each and were required to match the state funds with private donations, for a net investment of $20 million in the state's research infrastructure.

Goals

- Expand the economy
- Create jobs
- Patent new ideas
- Keep the state's best and brightest in West Virginia

West Virginia Research Trust Fund

On March 8, 2008, the West Virginia Legislature passed Senate Bill 287 to create the "Bucks for Brains" West Virginia Research Trust Fund, which matches state dollars with private donations to encourage university research and leverage private giving. Governor Joe Manchin proposed the initiative in his State of the State Address, saying the investment is necessary for West Virginia to stimulate world-class research and development and to reap the related benefits of high-tech, high-wage industries. The $50 million for the fund came from surplus state revenue.

The goal of the trust fund, which is similar to successful programs in other states, is to strengthen the most promising research departments at West Virginia University and Marshall University – ultimately leading to business spin-offs, new patents and job creation. The West Virginia School of Osteopathic Medicine and the state's four-year colleges and universities also benefit from the program through competitive grants for research supported by interest earned on the trust fund.

The trust fund supports research in energy and environmental sciences; nanotechnology and materials science; biological, biotechnical and biomedical sciences; biometrics, security, sensing and related information technologies; and gerontology.

West Virginia Education, Research and Technology Park

On February 25, 2010, Governor Joe Manchin announced that the State of West Virginia is committed to revitalizing the technology park in South Charleston and urged the Higher Education Policy Commission to move forward on a donation from Union Carbide Corporation, a subsidiary of The Dow Chemical Company, of buildings and property at the 258-acre campus. The Commission voted on March 4, 2010 to approve the donation. The vote was unanimous among participating members.

The donation approval effectively saved more than 450 existing jobs and the park, and is expected to create hundreds – and possibly thousands – more.

The primary goal of the park, the new "West Virginia Education, Research and Technology Park," is to help transform the state's economy by spurring job creation and technology-based business development. With existing infrastructure, including lab space, offices and high-tech business tenants, the park will serve as a business incubator for bringing the ideas and discoveries made in the higher education research setting to the marketplace.

The three core research focus areas will be energy, chemicals and materials, and biotechnology.

The Commission received a $250,000 grant from the federal Economic Development Administration in November 2009 to assist with planning for the park's future. This award, matched with funds from the state, supported a contract with Battelle Memorial Institute, a leader in the development, commercialization and transfer of technology for industrial and governmental clients, to plan for the long-range development of the park.

Outreach and Education Initiatives

The Neuron

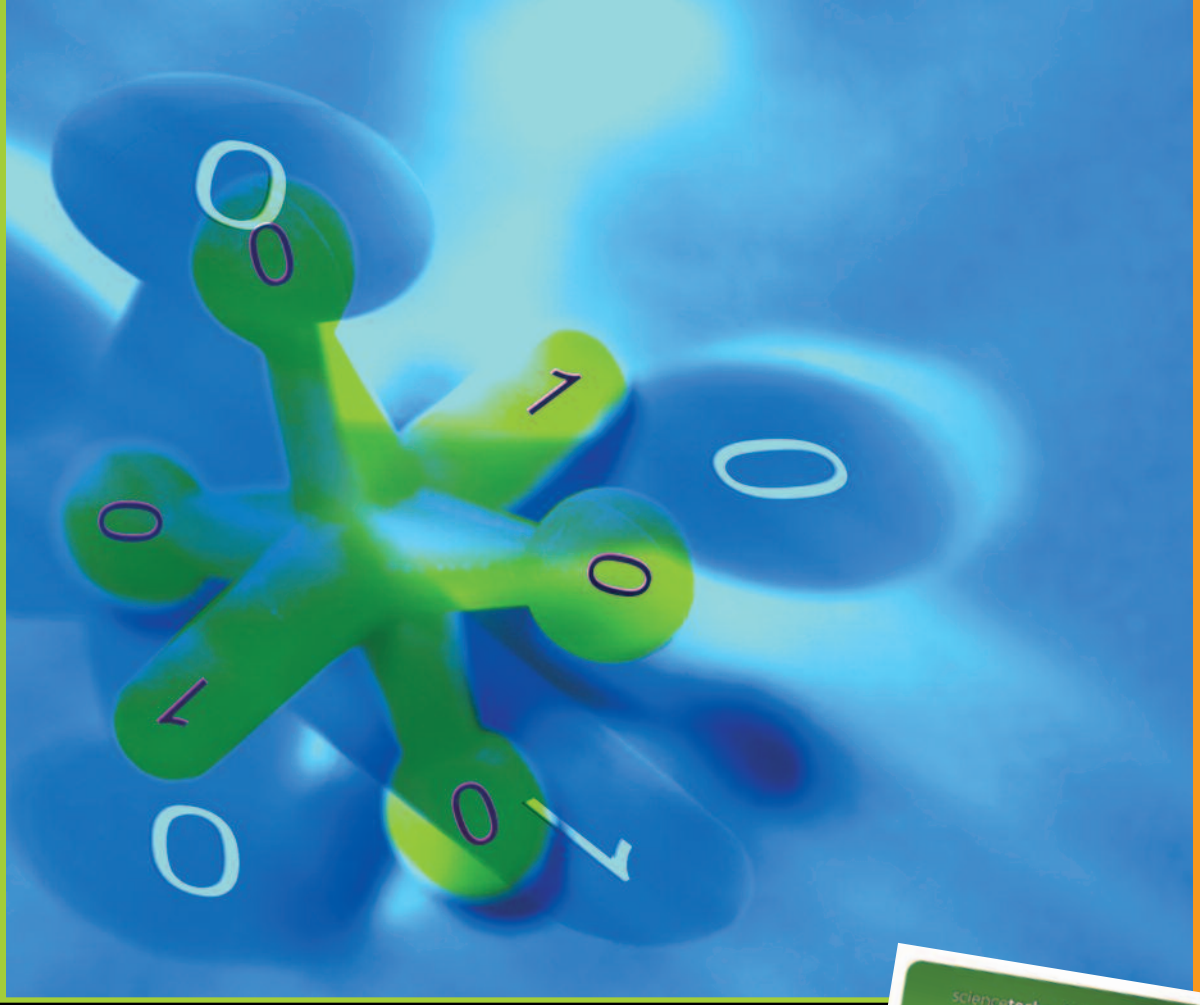
The Neuron, West Virginia's quarterly journal of science and research, is produced by the Division of Science and Research. The publication, which features faculty achievements, university technology transfer initiatives and other news, is mailed to nearly 2,000 people and available online.

Website

The Division's website, **www.wvresearch.org**, features the latest information for the state's research community, including grant opportunities, news and a library with pertinent materials.

Twitter

In 2010, the Division began utilizing Twitter, the social networking and microblogging service, to disseminate short updates on science and research and related news and events to a growing number of West Virginians engaged in new forms of online media. "Tweets" from the Division's page, **www.twitter.com/researchwv**, also feed into the Division's website.



STaR Symposium

Hosted by the Division, the biennial Science, Technology and Research (STaR) Symposium serves as a forum for the state's science and technology enterprise. Higher education faculty members, researchers, students, state policymakers and members of the business community gather at the event to share research developments, ideas and collaborations. The 2009 symposium drew approximately 150 people to Charleston.

Project with West Virginia Public Broadcasting

The Division sponsored a series focusing on science, technology and research that aired during West Virginia Public Broadcasting's news and public affairs television program. "Lab 304," which ended in December 2008, included segments on cancer research at Marshall University and alternative fuels research at West Virginia University. Beginning in July 2009 with a feature on the Blanchette Rockefeller Neurosciences Institute, the project entered a new phase and continued with profiles of well-known scientists from West Virginia.

Louis Stokes Alliance for Minority Participation (LSAMP)

The Kentucky-West Virginia LSAMP supports the long-term goal of increasing the number of students who earn doctorates in STEM (science, technology, engineering and mathematics) fields, particularly from populations underrepresented in these fields, including women, racial/ethnic minorities and people with disabilities. The Division supports the alliance by reserving up to $40,000 from its Underrepresented Research Scholars Program, funded through the Research Challenge Fund, for grants to LSAMP students.

Grant Programs

Grants to Institutions for Research Infrastructure

Eminent Scholars Recruitment and Enhancement Program

This program builds research infrastructure at the state's two research universities, primarily funding salaries and startup packages for nationally competitive researchers in targeted specialties. The program has allowed the universities to hire a total of 12 scholars with demonstrated research competitiveness, supported research infrastructure and provided graduate fellowships.

Eligibility: West Virginia University and Marshall University are eligible.

West Virginia Research Trust Fund

This program allows the state's two research universities to double private gifts that support expansions to research faculty and infrastructure in key areas linked to economic development, health care and job growth. This "Bucks for Brains" fund supports research in energy, biotechnology, biomedicine, identification technology, materials science and engineering, environmental science and gerontology. Private gifts are matched dollar-for-dollar.

Eligibility: West Virginia University and Marshall University are eligible. The state's other public four-year institutions of higher education, as well as the West Virginia School of Osteopathic Medicine, are eligible to apply – by responding to specific requests for proposals – for matching grants supported by the interest earned on the trust fund.

Federal Grant Matches

The Division of Science and Research provides state matching funds to research institutions for the National Science Foundation's Research Infrastructure Improvement program, the Department of Energy EPSCoR grants and shared facilities at West Virginia University.

Eligibility: Institutions must have received one of theses awards to be eligible for cost-sharing funds from the state.

Grants to Institutions for Student Programs

Governor's School for Math and Science Grants

These grants provide funding to support residential summer programs for middle school students to explore scientific research. The program is jointly supported by the West Virginia Department of Education and the Arts and the Division of Science and Research.

Eligibility: All four-year institutions of higher education and non-profit educational organizations in West Virginia are eligible.

STEM Fellows Program

This grant program helps recruit and support outstanding graduate students in STEM (science, technology, engineering and mathematics) fields. Block grants are awarded to institutions for the purpose of providing fellowships to graduate students.

Eligibility: Full-time faculty, deans and academic administrators at West Virginia University and Marshall University are eligible.

SURE Program

These grants help colleges and universities provide Summer/Semester Research Experiences to undergraduates in STEM fields. Block grants are awarded for the purpose of providing small research stipends to undergraduate students.

Eligibility: Full-time faculty, deans and academic administrators at all four-year institutions of higher education in West Virginia are eligible.

Underrepresented Research Scholars Program

This program supports the meaningful involvement of outstanding underrepresented students in STEM research at the undergraduate level. Women, underrepresented racial/ethnic minorities (Hispanic/Latino; American Indian or Alaskan Native; Black or African American, and Native Hawaiian or other Pacific Islander), people with disabilities and first-generation/low socioeconomic status students may participate.

Eligibility: Tenure-track or research faculty at all four-year institutions of higher education in West Virginia are eligible.

Grants to Faculty Members

Innovation Grants

These grants fund improvements in scientific equipment, curriculum, minor renovations, classroom instruction, delivery and pedagogy. The program targets innovative, cohesive and/or comprehensive projects in laboratory/classroom settings that encourage undergraduate students to continue careers in science, mathematics and engineering.

Eligibility: Full-time faculty at the primarily undergraduate institutions in West Virginia may apply; West Virginia University and Marshall University faculty are not eligible.

International Innovation Grants

This program supports development of an international component in one or more STEM programs. The program encourages STEM faculty and students to think globally about research, collaboration, grant opportunities and exchange programs. Grant funds may be used for a variety of innovative purposes and activities, including curriculum, scientific equipment and travel.

Eligibility: Tenure-track faculty at all four-year institutions of higher education in West Virginia are eligible.

Instrumentation Grants

This program purchases scientific equipment for advanced undergraduate laboratories to help encourage undergraduate students in West Virginia to continue careers in science, mathematics and engineering.

Eligibility: Full-time faculty at the primarily undergraduate institutions in West Virginia may apply; West Virginia University and Marshall University faculty are not eligible.

Mini-Grants for Proposal Preparation

These grants aid faculty members in the preparation of research or research equipment proposals for submission to external agencies or foundations. This program may support the applicant in collection of preliminary data, idea development or dedication of time to focus on a larger research program and proposal.

Eligibility: Tenure and tenure-track faculty at all four-year institutions of higher education in West Virginia are eligible.

Research Challenge Grants

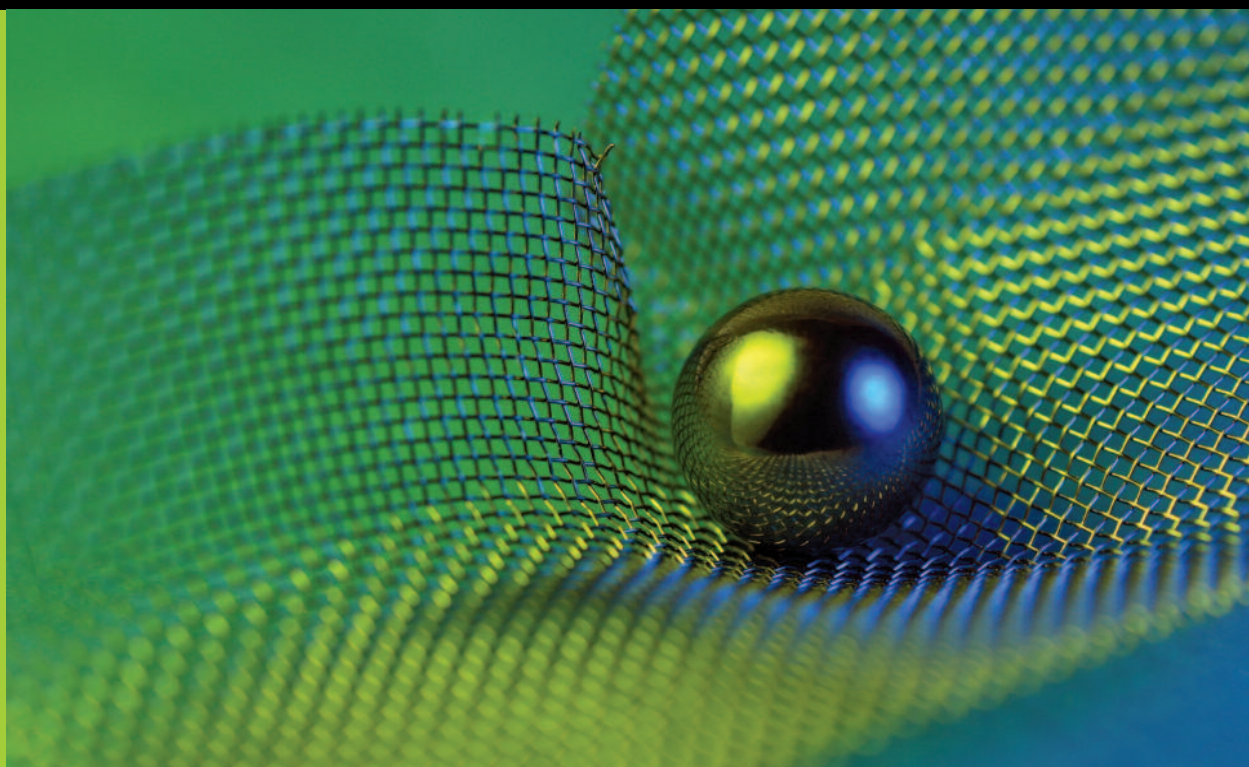
This grant program supports large, focused STEM research projects that may lead to research centers and economic development. Projects should assist the institution in its ability to successfully compete for external funding on a national and international basis by providing incentives to significantly increase capacity.

Eligibility: Full-time faculty or research professors at all four-year institutions of higher education in West Virginia are eligible.

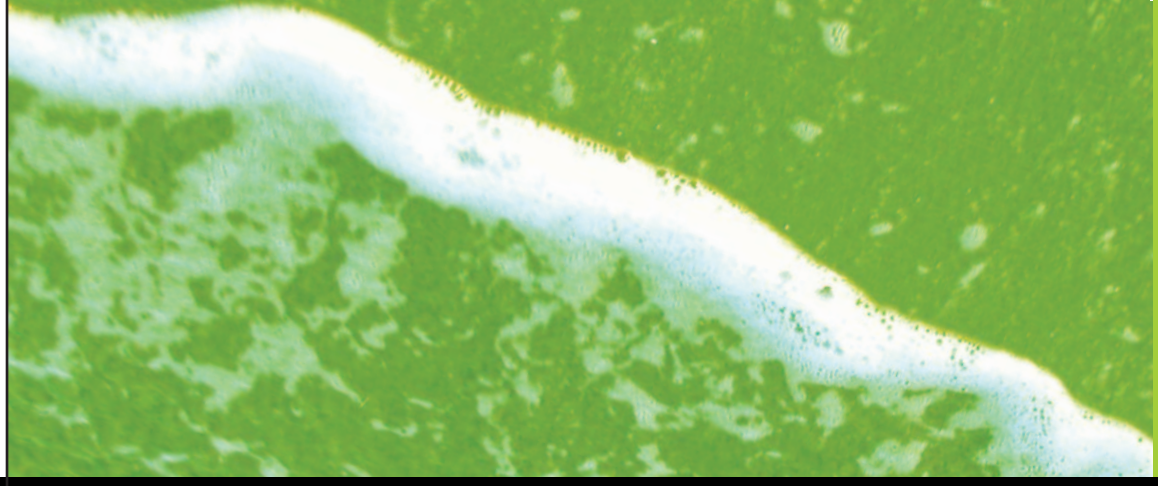
Grants Awarded

Fiscal Year 2009

Federal Energy Grant Match		
Richard Bajura	*West Virginia University*	$250,000
Innovation Grants		
Ufuk Tureli	*West Virginia University Institute of Technology*	$39,504
Edward Wovchko	*West Virginia Wesleyan College*	$40,000
Instrumentation Grants		
Dana Alloway	*Concord University*	$20,000
Thomas Ford	*Concord University*	$18,618
Didem Kivanc-Tureli	*West Virginia University Institute of Technology*	$10,283
Bryan Raudenbush	*Wheeling Jesuit University*	$14,485
Andrew Schedl	*West Virginia State University*	$10,000
Joseph Wiest	*West Virginia Wesleyan College*	$20,000
International Innovation Grants		
Luke Huggins	*West Virginia Wesleyan College*	$36,880
Opportunity Grants		
Michael Castellani	*Marshall University*	$9,000
Lisa DeFrank-Cole	*West Virginia University*	$2,300
Linda Vona-Davis	*West Virginia University*	$1,500
Michelle Poland	*Fairmont State University*	$1,000
Research Challenge Grant Program		
Ever Barbero	*West Virginia University*	$400,000
Eric Blough	*Marshall University*	$275,527
Julio Davalos	*West Virginia University*	$400,000
Maura McLaughlin	*West Virginia University*	$213,504
Arun Ross	*West Virginia University*	$298,306



Research Proposal Mini-Grant Program		
Brian Day	*Marshall University*	$4,500
Frank Gilliam	*Marshall University*	$5,000
Brian Griffith	*West Virginia School of Osteopathic Medicine*	$4,500
Derrick Kolling	*Marshall University*	$4,500
Jay Wiedemann	*West Virginia University Institute of Technology*	$4,500
STEM Fellows		
Peter Gannett	*West Virginia University*	$300,000
Richard Niles	*Marshall University*	$199,977
SURE Grants		
Stephen Brown	*West Virginia University Institute of Technology*	$25,000
Keith Garbutt	*West Virginia University*	$75,000
Katherine Harper	*West Virginia State University*	$60,060
Melinda Kreisberg	*West Liberty State College*	$34,000
John Maher	*Marshall University*	$69,000
Jeanne Sullivan	*West Virginia Wesleyan College*	$16,600
Technical Assistance Grant		
John Maher	*Marshall University*	$144,000
Trust Fund Distributions		
John Maher	*Marshall University*	$465,000
Underrepresented Research Scholars Program		
David Miller	*West Virginia University*	$22,086
William Woodrum	*West Virginia State University*	$5,000



Grants Awarded

Fiscal Year 2010

Federal Grant Match		
Richard Bajura	*West Virginia University*	$250,000
John Maher	*Marshall University*	$10,000
Curt Peterson	*West Virginia University*	$90,178
Innovation Grants		
Warren Calderone	*Shepherd University*	$40,000
Timothy Troyer	*West Virginia Wesleyan College*	$40,000
Instrumentation Grants		
Harold Cook	*Wheeling Jesuit University*	$16,988
Sara Sawyer	*Glenville State College*	$19,980
Jeanne Sullivan	*West Virginia Wesleyan College*	$20,000
Nan Wang	*West Virginia University Institute of Technology*	$19,909
Opportunity Grants		
Michael Castellani	*Marshall University*	$10,000
Linda Vona-Davis	*West Virginia University*	$1,000
Venkat Gudivada	*Marshall University*	$4,195
Majid Jaraiedi	*West Virginia University*	$10,000
James Lewis	*West Virginia University*	$2,000
Thomas Wilson	*Marshall University*	$3,871
Research Challenge Grant Program		
Ever Barbero	*West Virginia University*	$300,000
Eric Blough	*Marshall University*	$256,949
Julio Davalos	*West Virginia University*	$300,000
Maura McLaughlin	*West Virginia University*	$308,032
Arun Ross	*West Virginia University*	$311,926
Research Proposal Mini-Grant Program		
Vagner Benedito	*West Virginia University*	$5,000
Derrick Kolling	*Marshall University*	$5,000
Daryl Reynolds	*West Virginia University*	$5,000
Kaushlendra Singh	*West Virginia University*	$5,000
Suzanne Strait	*Marshall University*	$5,000
Xiaoping Sun	*University of Charleston*	$5,000
Wendy Trzyna	*Marshall University*	$5,000
Ufuk Tureli	*West Virginia University Institute of Technology*	$5,000

STEM Fellows		
Peter Gannett	*West Virginia University*	$300,000
Richard Niles	*Marshall University*	$199,977
SURE Grants		
Stephen Brown	*West Virginia University Institute of Technology*	$25,000
Keith Garbutt	*West Virginia University*	$75,000
Katherine Harper	*West Virginia State University*	$30,000
Melinda Kreisberg	*West Liberty State College*	$34,000
John Maher	*Marshall University*	$69,000
Technical Assistance Grant		
John Maher	*Marshall University*	$144,000
Underrepresented Research Scholars Program		
David Miller	*West Virginia University*	$11,450
Trust Fund Distributions		
Gregory Aloia	*Concord University*	$100,000
Robin Capehart	*West Liberty State College*	$100,000
John Maher	*Marshall University*	$277,100
Curt Peterson	*West Virginia University*	$6,672,717

FINANCIAL STATEMENTS

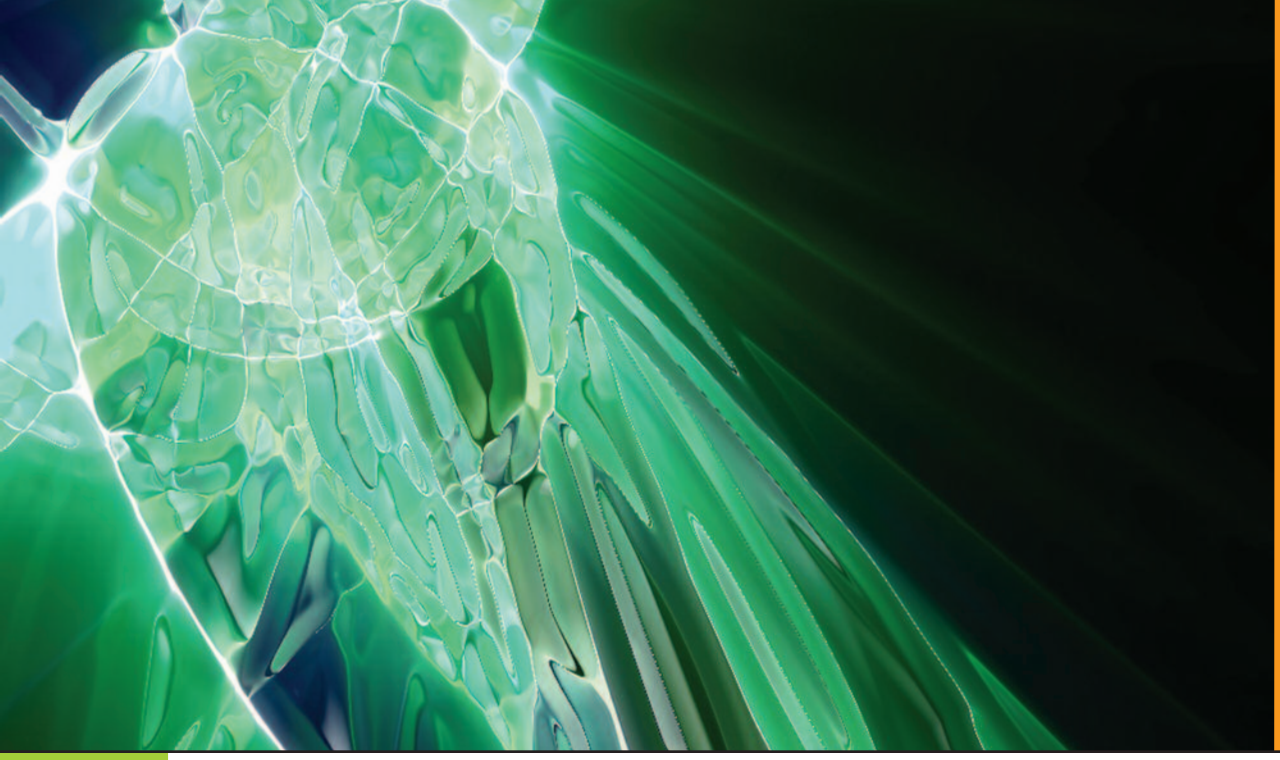
The following analysis of the Division of Science and Research financial statements provides an overview of its financial activities for the years ended June 30, 2010 and June 30, 2009.

Summarized Financial Information (unaudited)
Assets, Liabilities, and Net Assets

June 30,	2010	2009
ASSETS		
Cash and cash equivalents	$ 45,641,620	$ 52,916,900
Interest receivable	7,180	12,240
TOTAL CURRENT ASSETS	45,648,800	52,929,140
NONCURRENT ASSETS		
Investment in plant, net	8,433	12,447
Total noncurrent assets	8,433	12,447
TOTAL ASSETS	$ 45,657,233	$ 52,941,587
LIABILITIES:		
Current Liabilities		
Accounts payable	$ 9,384	$ 17,471
Amounts due to Institutions	292,340	825,155
Accrued liabilities	19,815	17,400
Compensated absences, current portion	37,981	40,752
Total Current Liabilities	359,520	900,778
Noncurrent Liabilities:		
Compensated Absences	19,934	20,375
Accrued liabilities OPEB	75,350	14,454
Total Noncurrent Liabilities	95,284	34,829
TOTAL LIABILITIES	454,804	935,607
NET ASSETS:		
Invested in capital assets, net of related debt	8,433	12,447
Restricted for:	-	-
Expendable:	-	-
Sponsored projects	42,585,183	49,547,240
Capital projects	-	-
Nonexpendable	-	-
Unrestricted	2,608,813	2,446,293
TOTAL NET ASSETS	45,202,429	52,005,980
TOTAL LIABILITIES AND NET ASSETS	$ 45,657,233	$ 52,941,587

Summarized Financial Information (unaudited)
Revenues, Expenses and Changes in Net Assets

June 30,	2010	2009
OPERATING REVENUE		
Contracts and grants		
Federal	$ 3,336,932	$2,387,903
State	-	-
Local	-	-
Private	24,500	17,250
Miscellaneous-registration fees	-	24,230
TOTAL OPERATING REVENUE	$ 3,361,432	$ 2,429,383
OPERATING EXPENSES		
Salaries and wages	$ 479,148	$ 434,081
Benefits	153,390	113,276
Supplies and other services	271,713	366,459
Utilities	-	-
Research sub awards	13,190,348	7,054,100
Depreciation	4,014	4,829
TOTAL OPERATING EXPENSES	$ 14,098,613	7,972,745
OPERATING INCOME (LOSS)	$(10,737,181)	$(5,543,362)
NON OPERATING REVENUE (EXPENSES)		
State appropriations	$ 3,866,540	$54,238,718
Investment income	$ 67,090	$ 762,797
Payments on behalf of EPSCoR	-	7,407
NET NONOPERATING REVENUE	3,933,630	55,008,922
INCOME BEFORE OTHER REVENUE, EXPENSES, GAINS OR LOSSES	(6,803,551)	49,465,560
(DECREASE) IN NET ASSETS	(6,803,551)	49,465,560
NET ASSETS-BEGINNING OF YEAR	52,005,980	2,540,420
NET ASSETS-END OF YEAR	$ 45,202,429	$ 52,005,980



Division of Science and Research
West Virginia Higher Education Policy Commission
1018 Kanawha Blvd E Ste 1101
Charleston WV 25301

phone 304.558.4128
fax 304.558.2321

www.wvresearch.org