

Testimony of Brian E. Noland, Ph.D.
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Submitted to the House Committee on Appropriations
Subcommittee on Commerce, Justice, Science, and Related Agencies
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Mr. Chairman and Members of the Subcommittee, my name is Brian Noland. I am a member of the West Virginia EPSCoR Advisory Council and serve as the Chancellor of the West Virginia Higher Education Policy Commission. Thank you for the opportunity to testify today regarding the National Science Foundation's (NSF) and the National Aeronautics and Space Administration's (NASA) Experimental Program to Stimulate Competitive Research (EPSCoR). For Fiscal Year 2010, we respectfully request \$147.8 million for the NSF EPSCoR and \$25.0 million for the NASA EPSCoR programs.

The \$147.8 million that the EPSCoR states are requesting is the amount authorized for the NSF EPSCoR program for FY 2010 in the America COMPETES Act. This legislation is essential to our nation's security, quality of life and economic prosperity. We also believe in order to maximize the success of this legislation, we must fully fund at the authorized levels, thereby ensuring that the talents and expertise of all states are fully utilized to address our nation's research and innovation needs.

The \$147.8 million authorized for the NSF EPSCoR program would strengthen the role that the 26 EPSCoR states, plus Puerto Rico and the Virgin Islands, play in the national research community. It would help these 28 jurisdictions expand their S&T expertise and research competitiveness and better train our states' young talent to contribute more directly to meeting the scientific and technological challenges facing our nation.

EPSCoR/IDEA states prepare a major portion of the nation's future "high tech" workforce by educating thousands of scientists and engineers each year. We have a wealth of secondary school talent that has often scored quite well on standardized math tests. Additionally, EPSCoR/IDEA states have many Truman and Goldwater Scholars, have growing research capabilities, are among the major energy-producing states, and are in the forefront of ocean and coastal research, fossil energy research and many other areas. Furthermore, many of our institutions are moving forward in the Carnegie Classifications.

Over the past few years, this Subcommittee has been very supportive of the EPSCoR program and for this we are very grateful. However, we believe now is the appropriate time for NSF to be particularly aggressive in increasing support for EPSCoR states and in integrating them more fully into the overall NSF agenda, especially in cyberinfrastructure. In today's tough economic times, it is important to use all of our resources to ensure the US continues to have an edge on its competition. An innovation strategy that ignores half the states and a fourth of the doctoral-granting institutions in our country is certain to fail.

The EPSCoR program at NSF is already making significant contributions to research infrastructure development in EPSCoR jurisdictions through its Research Infrastructure

Improvement (RII) awards and Co-funding. Track-1 RII Awards provide up to \$4 million annually to support academic research infrastructure improvements in R&D areas critical to the state's long-term S&T competitiveness and economic development. EPSCoR states and institutions contribute additional funding. Track 1 RII's are important investment mechanisms for growing a state's research infrastructure. NSF has expanded the number of states that qualify for funds, therefore, creating less funding and awards for individual states. Furthermore, an NSF-sponsored EPSCoR 2020 Workshop, held in June, 2006, identified a number of actions to make the program more effective, including increasing the annual amount of RII awards, expanding Cofunding, and making significant new investments in Cyberinfrastructure. In order to meet the needs posed by the report and the addition of states, we need the increased funding.

EPSCoR states in particular have emerging Cyberinfrastructure networks and capacities that should be significantly upgraded in order to ensure full participation in NSF and other Federal research programs. These needs are outlined in Dr. John Connolly's (from the University of Kentucky) report on the EPSCoR Cyberinfrastructure Workshop, which was funded by the NSF. According to an analysis of the Office of Cyberinfrastructure in 2007, 97% of its funding goes to non-EPSCoR states. Furthermore, many jurisdictions do not have the current standard for Internet2 or NLR connectivity of about 10 gigabits per second. This is required for most advanced research for accessing remote equipment and facilities for utilizing and manipulating larger databases and for collaboration with researchers in other states. EPSCoR states are lagging behind in their research and economic competitiveness because of the lack of Cyberinfrastructure capabilities and funding.

We believe that it is important for our nation to invest in cyberinfrastructure in EPSCoR states. The long-term benefits and return on investment would far outweigh any initial costs. Additionally, cyberinfrastructure is essential for tech transfers and SBIR. Cyberinfrastructure technologies can make EPSCoR states more effective and competitive, creating more jobs around universities and colleges and making significant contributions towards the economic development.

The EPSCoR states continue to make great strides by submitting and winning increasing numbers of awards, securing major engineering and material sciences awards, attracting new faculty and students drawn by quality of life and quality of research and education offerings. EPSCoR is the mechanism at NSF for addressing the geographic imbalance in research funding and for creating a truly national research community in all states. Although EPSCoR states have 20% of the population, they only receive about 6% of the allocations for research. The EPSCoR program should be funded at the authorized level in FY 2010.

For NASA EPSCoR in FY 2010, we are requesting an appropriation of \$25.0 million.

NASA EPSCoR is designed to develop the capacity of those states that traditionally have had limited amounts of NASA R&D funding. The program helps them become more competitive in research areas associated with the NASA centers and enterprises. This laudable goal is accomplished through two primary funding mechanisms: Research Infrastructure Development Awards (RID), and Research Implementation Awards (*Implementation*).

Recently, NASA made two key programmatic and administrative changes to its EPSCoR program. First, it increased the number of eligible jurisdictions from 20 to 28 (26 states, plus Puerto Rico and the U.S. Virgin Islands) to be consistent with the NSF EPSCoR designated states. Second, it changed its funding mechanism for *Implementation* awards.

In the past, *Implementation* grants, which are competitively awarded research grants, provided up to \$750,000 spread over a 3-year period (i.e., \$250,000 per year). Under the new system, instead of allocating research dollars on an annual basis, NASA is now fully funding *Implementation* awards in the first year. This policy change is resulting in fewer awards to the states in any single year. Such a move is counterproductive especially when NASA is to accelerate climate research, aeronautics, and exploration activities.

Now, let me turn to West Virginia.

As one of the five original EPSCoR states, West Virginia has benefited greatly from its participation in this important program.

In 2001, West Virginia EPSCoR received a \$9 million NSF Research Infrastructure Improvement grant. With the grant, academic leaders were hired to attract high-quality research faculty at our two primary research universities. Between 2002 and 2005, nine new faculty members were hired and have emerged as research leaders on their respective campuses.

In May 2006, West Virginia EPSCoR was awarded a new three-year research infrastructure grant, allowing us to build on the capacity established by the 2001 grant and providing 12 additional research faculty members.

One of the indicators of the resulting research capacity is that successful applications to Federal grant programs have shown a steady increase. In just six years, between 2001 and 2007, Federal awards in West Virginia rose from approximately \$36 million to \$93 million. In addition, *total* research expenditures at our colleges and universities rose from just over \$79 million to more than \$167 million over the same six-year period. And we expect these upward trends to continue.

The successes of the research initiatives seeded by these EPSCoR infrastructure grants have persuaded policymakers at the state level to significantly increase the state's investment in research. More than ever, a true State-Federal partnership has been formed in this regard.

Since 2004, state legislators have dedicated a portion of racetrack video lottery revenue to the State's Research Challenge Fund. Over the past five years, the \$8.4 million the State has invested in this program intended to support the creation of research centers and foster economic development and work force advancement has resulted in a substantial return on investment. In fact, the first six scientific research projects funded through the Research Challenge Grant program have leveraged external funding of more than \$20 million and have resulted in five startup companies with five-year projected revenues of \$124 million, 10 patent applications and five patents. Two of the startup companies—Protea Biosciences LLC in Morgantown and Vandalia Research Inc. in Huntington—estimated they would be hiring 295 additional

employees in the next five years. In addition, two university research centers with industry partners were formed and one production facility is under development.

We could not be more pleased with the positive and significant impact the Research Challenge Grant program has had. We were able to exceed our initial expectations for this program, sponsoring innovative research at our two research institutions and greatly improving their ability to be competitive for Federal funding on the national level. These are the kind of results that help policymakers justify a continued investment in research.

And that is not nearly all. Over the past two years, Governor Manchin and the state legislature worked together to provide \$60 million in *additional* funds to help West Virginia University and Marshall University attract top scientists and their labs. These appropriations—\$10 million for the Eminent Scholars Recruitment and Enhancement initiative in 2007 and \$50 million for the “Bucks for Brains” West Virginia Research Trust Fund in 2008—are truly momentous developments that will give us opportunities to expand our research efforts in ways we could have only imagined just a couple of years ago.

The goal of the trust fund, which is similar to successful programs in other states, is to strengthen the most-promising research departments at Marshall and WVU, ultimately leading to business spin-offs, new patents and job creation. Both universities have begun raising the money required to draw down an equal amount of this “Bucks for Brains” funding, and report that they have each raised more than \$3 million in just the past few months.

None of this significant progress in our state would have been possible without the initial support received through NSF’s EPSCoR program. Without question, the Track 1 RII grants were the catalyst for these recent commitments to improving our state’s research capacity and, ultimately, ensuring a brighter future for all West Virginians.

Every state, their students and their citizens have important contributions to make to the nation’s competitiveness. The 26 states and two jurisdictions that make up EPSCoR community represent 20 percent of the U.S. population, 25 percent of the research and doctoral universities, and 18 percent of the nation’s scientists and engineers. We believe in the value and power of EPSCoR—both as a catalyst for improvement within our respective states and as a contributor to America’s increased competitiveness in the global economy.

I want to thank you for the opportunity to address the Subcommittee today. Thank you.

Brian Noland, Ph.D

Dr. Brian Noland was appointed chancellor of the West Virginia Higher Education Policy Commission in May 2006.

Dr. Noland's professional career has been primarily focused in higher education and higher education policy. Prior to joining the commission's staff, he served as the associate executive director for the Tennessee Higher Education Commission, and was a faculty member in the Peabody College of Education at Vanderbilt University. His scholarly focus has been in the areas of access, accountability and governance, with articles published in *The Journal of College Orientation and Transition*, *The Journal of Social Indicators Research*, and *The Handbook of Political Science Literature on Interest Groups*.

Dr. Noland received his bachelor's and master's degrees in political science from West Virginia University, and holds a doctorate in political science from the University of Tennessee, Knoxville.