RESEARCH CHALLENGE GRANTS

How state funding encourages ***job creation*** and ***private investment***

Research Challenge Grants offer return on investment

$17.3 million

Localized Gas Utilization

External follow-on funding after initial award of $1.3 million over five years

$33.1 million

Center for Cognitive Computing

External follow-on funding after initial award of $1.3 million over five years

$38.6 million

Vaccine Development Center

External follow-on funding after initial award of $1.3 million over five years

Jianli (John) Hu, Ph.D.
Research Challenge Grant recipient, Localized Gas Utilization

"The RCG integrates **collaborations** wherein science & engineering faculty can engage with law, finance and geology to come up with **innovative solutions** to energy and environmental issues in West Virginia. The project has generated specific impacts on the advancement and realization of smart goals in The West Virginia Science and Technology Strategic Plan. The research activities result in a continuing stream of intellectual properties, federal grants and industrial investment to sustain the scientific advancements in energy research. With the help of the RCG, an interdisciplinary team has trained 25 PhD/MS students, 10 BS students and 4 postdocs."

"The RCG grant has allowed me to extend WVU research activities on several critical national security topics as well as collaborating with state commercial and industrial companies. I have been able to advance **state-of-the-art machine learning** on biometrics and face recognition for national security. Due to this RCG, my research group **secured two large grants** and received two consecutive year supplemental grants. The RCG grant has also helped me collaborate on several projects with small businesses."

Nasser Nasrabadi, Ph.D.
Research Challenge Grant recipient, Center for Cognitive Computing

"The Vaccine Development Center (VDC) has acquired $26 million in extramural support from private and federal sources of funding. The VDC has **supported seven faculty-lead projects** over the past four years which has allowed labs to become more competitive for extramural support. Furthermore, the projects have resulted in **publications in high-tier journals**, illuminating research that is occurring in West Virginia. The VDC **partnerships have enabled three potentially lifesaving vaccines** to be moved into human clinical trials."

Heath Damron, Ph.D.
Research Challenge Grant recipient, Vaccine Development Center

Research Challenge Grants (RCGs) are awarded every five years. RCGs support the creation of university-based research centers that can foster economic development and workforce advancement in alignment with the goals listed in the state Science & Technology Plan (S&T Plan). All three current projects were awarded $1.3 million over five years. They have made excellent use of state funding by leveraging the initial investment into further funding from federal sources, supporting scores of graduate students and postdoctoral fellows, and producing hundreds of publications on important research. Increased funding of the Research Challenge Fund would be used for additional RCGs that have been very successful at garnering follow-on funding.

GROW

Grow research programs at institutions to help secure federal funding that will spur economic development

DEVELOP

Develop STEM talent pipeline to increase the STEM-ready workforce in West Virginia

RETAIN

Keep expertise in the state with competitive programs that provide quality experiences to attract and retain students

How further investment in the Research Challenge Fund would *positively impact* West Virginia

SUMMER UNDERGRADUATE RESEARCH EXPERIENCES

The Summer Undergraduate Research Experiences (SURE) program provides stipends to **fully or partially support research for 100 undergraduate students annually**. Marshall University, Shepherd University, West Liberty University, West Virginia University, West Virginia State University, and West Virginia Wesleyan College host these students. The sum of six awards is $300,000 per year, for three years from 2020-2022.

INSTRUMENTATION & INNOVATION GRANTS

Instrumentation Grants provide $20,000 to purchase **modern instruments for advanced undergraduate laboratories**. Innovation Grants provide one-time awards of about $40,000 each for **equipment, supplies and minor renovations of laboratory spaces for undergraduate education and research**.

STEM FELLOWS

STEM Fellows offers **funding for doctoral (Ph.D.) students studying science, technology, engineering and mathematics (STEM)** at Marshall University (MU) and West Virginia University (WVU). This grant provides **significant support** to both schools for their research programs and **helps maintain their respective research classifications**. The total for five years will be $800,000 to MU and $1,675,000 to WVU.

OPPORTUNITY FUND

The Opportunity Fund provides **small, one-time awards** less than $5,000 each to assist faculty and STEM programs with expenses related to development of proposals for federal funding, and for summer student programs. Total funding per year is $40,000.

An external, expert peer review service is provided for STEM faculty. This allows them to develop competitive proposals for funding from federal agencies. Last year, 32 faculty proposals were reviewed, 1 large scale proposal to the National Science Foundation (NSF) was reviewed multiple times, and 50 proposals were reviewed for 9 competitions for about $150,000. Administration and cost share to NSF EPSCoR RII grant was also provided at $255,000.

Learn more at **wvresearch.org** or call us at **304.558.4128**

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WEST VIRGINIA Higher Education Policy Commission