

MEMORANDUM

TO: Legislative Oversight Commission on Education Accountability (LOCEA)

FROM: Dr. Juliana Serafin, Senior Director, Division of Science, Technology and Research, HEPC

DATE: October 11, 2021

RE: Research Challenge Fund Annual Report

West Virginia Code §18B-1B-12 requires the West Virginia Higher Education Policy Commission to report to LOCEA annually on the results of the projects and activities funded by the Research Challenge Fund (RCF) appropriation.

Since it was created in 2004, the Research Challenge Fund has been instrumental in helping West Virginia build its scientific research capacity and reputation by attracting and developing top university scientists. Through funding for undergraduate and graduate STEM students, the Research Challenge Fund creates a highly skilled, culturally diverse workforce, leading to new economic possibilities for West Virginia. The Research Challenge Fund is evidence of the state's ongoing commitment to support science and technology research, education, and outreach.

Vision 2025: West Virginia Science & Technology Plan identifies growth of the research enterprise at our universities as one of the key areas of focus for the state. The plan includes a specific recommendation to re-establish the original level of funding of the Research Challenge Fund at \$4.5 million a year. It is now funded at \$1,731,820 per year from the lottery. In Fiscal Year 2021, RCF supported the following grant programs and services:

- **Research Challenge Grants** support the creation of research centers and foster economic development and workforce advancement (\$1.3 million for each of 3 awards distributed over 5 years).

For the period 2018 – 2022, Research Challenge Grants are:

- 1) Advancement of Science and Engineering for Localized Gas Utilization (WVU and Marshall University),
- 2) Foundation of the Vaccine Development Center at WVU (WVU)
- 3) Center for Cognitive Computing (C3): A Multidisciplinary Research Center for Excellence (WVU).

All three projects have made excellent use of the state's investment by leveraging the initial investment into further grant funding from federal sources, supporting scores of graduate students and postdoctoral fellows, and producing hundreds of publications on important research. Project 2 (Vaccine Development Center) has a 25:1 return on investment ratio for the money from the RCG, and has developed several industry-academia partnerships. Please see the detailed reports for each of the three projects which are combined into *Attachment 1: Annual Reports Research Challenge Grants 2020-2021*. These awards will expire at the end of 2022, and new awards will start in 2023.

- **Summer/Semester Undergraduate Research Experience (SURE)** awards for undergraduate research stipends to fully or partially support ~100 students annually at WVU, Marshall, West Virginia State University, West Virginia Wesleyan College, Shepherd University, and West Liberty University. (The sum of six awards is \$300,000 per year, for three years from 2020-2022. Note that due to 2020 summer COVID-19 cancellations, some of these grants have requested a no cost extension to 2023.)
- **Science, Technology, Engineering and Mathematics (STEM) Fellows** grants for STEM doctoral (PhD) students at WVU and Marshall. This grant provides significant support to WVU and Marshall for their STEM research programs and helps maintain their respective R1 and R2 research classifications. Due to COVID-19, the awards have been extended a fifth year, i.e., to 2017-2022. The total for five years will be \$800,000 to Marshall and \$1,675,000 to WVU. Proposals for the next cycle of awards from 2022-2026 will be reviewed later this year.
- **Technical Assistance** provides an external expert peer review service for STEM faculty to help develop competitive proposals for funding from federal agencies. In FY'21, 32 faculty proposals were reviewed, 1 large scale proposal to the NSF was reviewed multiple times, and 50 proposals were reviewed for 9 competitions. (\$150,000)
- **Opportunity Fund** provides small, one-time awards (~\$5000 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). In FY'21, no grants were given although some were awarded, because awardees were unable to spend the money due to COVID-19.
- **Innovation Grants** provides one-time awards (~\$40,000 each) for equipment, supplies and minor renovations of laboratory spaces for undergraduate education and research. Two awards are made per year. FY'21 awards went to Shepherd University and West Virginia Wesleyan College.
- **Administration and Cost Share to NSF EPSCoR RII grant** (\$255,000)