

Vision 2025: The West Virginia Science and Technology Strategic Plan

Annual Report on progress

August 2019

Vision: By 2025, Science, Technology, and Engineering are WV's Leading Economic Growth Drivers Attracting Investments, Creating Jobs, and Improving Our Quality of Life

Key Objective: Financial Development

Smart Goal: Obtain \$6 MM in state-based funding for HEPC Division of Science and Research and match 3-1 with external funding by July 1, 2017 and grow 5% per year thereafter

Progress: Due to the state's economic troubles, no additional funds have been forthcoming. However, for FY19, the Research Challenge Fund did not suffer any further reductions.

Smart Goal: Dedicate \$10 MM in annual funding with private 1-to-1 match for a Science and Technology Future Fund starting July 1, 2017

Progress: Due to the state's economic troubles, no additional funds have been forthcoming. The success of the Research Trust Fund with \$50M of state funds being matched by private gifts has helped West Virginia University regain its Carnegie R1 -Highest Research status and has helped Marshall University increase its competitiveness for federal grants including gaining status as an R-2 Doctoral University - High Research Activity in the Carnegie Classifications for the first time . Additional funding would increase the likelihood of more research leading to economic development.

Smart Goal: Obtain \$1MM funding for start-up and venture businesses with private 1-to-1 match by July 1, 2017 and grow 10% per year

Progress: During the FY 19 Legislative session, the Legislature enacted and the Governor signed the Small Business Innovation Research and Small Business Technology Transfer Matching Funds Program. House Bill 2550 will provide a \$2,500 "WV Phase Zero" grant to companies or researchers who submit an SBIR/STTR application; award up to \$100,000 to companies who win an SBIR/STTR Phase I grant; and, award up to \$200,000 over two years to companies who win an SBIR/STTR Phase II grant.

Key Objective: Physical Development

Smart Goal: Determine statewide needs for science and technology facilities to enable research and business growth goals at Universities and technology parks by July 1, 2016

Institutions have evaluated science and technology needs. Marshall is constructing a new pharmacy school. WVU is renovating Hodges Hall which will be occupied by the Eberly College of Arts and Sciences and other programs.

Smart Goal: Upgrade and increase science and technology facilities to enable research and business acceleration needs for Vision 2025 at Universities and technology parks by July 1, 2024

Researchers at the Marshall Institute for Interdisciplinary Research (MIIR) are focused on molecular medicine, molecular mechanism of herbal medicine and nutraceuticals. The development of new therapeutics, research in cancer, cardiovascular, herbal medicine and nutraceuticals, and molecular medicine will lead to biomedical advances that can be patented and licensed. At the WVU School of Medicine, recent NIH funding to Dr. Aaron Robart is studying how cells catalyze removal of non-coding “junk” DNA to make sense of the RNA which remains. His findings may lead to more information about disorders like diabetes and cancer that are linked to alterations in gene expression research develops drugs that have potential for treating and reducing the effects of major neurological disorders including Alzheimer’s disease and stroke. Although his research doesn’t address any single disease, what he discovers may lay the foundation for developing RNA-based therapeutics aimed at controlling changes in gene expression found in many diseases.

Smart Goal: Ensure continual upgrades and expansions of broadband infrastructure to meet prevailing FCC and E-rate standards and follow the recommendations of the WV Strategic Broadband Plan for statewide administration, promotion, and development, starting July 1, 2017.

The WV Broadband Enhancement Council (BEC) established by SB488 in 2015 (WV §31-15C-3) to replace the Broadband Deployment Council, which was sunset in December 2014, has unfortunately not updated the 2014 Strategic Plan for Broadband. However, the Appalachian Regional Commission (ARC) has awarded West Virginia \$4.2M in grant funding to development broadband in distressed coal field counties: Boone, Clay, Lincoln, McDowell, Mingo, Webster and Wyoming. These counties may apply for funds to develop broadband that will increase economic and business development and provide service for unserved customers. Earlier, the U.S. Department of Housing provided Community Development Block Grant funds (\$2.4M) to WV that were dedicated to broadband development throughout the state.

The West Virginia Broadband Infrastructure Loan Insurance Program has been developed to expand, enhance and make generally available broadband service throughout the State of West Virginia. The program places a primary emphasis on the development of broadband infrastructure in unserved and underserved areas of the State as outlined in West Virginia Code § Code § 31G-1-1, et seq. House Bill 3093. This program is coordinated by the West Virginia Broadband Enhancement Council and the West Virginia Economic Development Authority.

Key Objective: People Development

Smart Goal: Create and implement a STEM and entrepreneurial-based education and workforce development plan by December 31, 2016

This goal is behind.

Smart Goal: STEM faculty at all WV colleges and universities have opportunities to be rewarded for entrepreneurial activities and innovation in promotion and tenure considerations by 1 January 2017

WVU faculty are rewarded through the promotion and tenure process for entrepreneurial activities.

Key Objective: Cultural Development

Smart Goal: Increase West Virginia public’s understanding of the value of STEM and research by 5% annually starting January 1, 2016

Surveys are conducted after every STEM speaker appearance. It appears that our audience is fairly STEM aware and interested in STEM research. We will do an annual survey in the Fall of 2019 that is a little more extensive and will query their understanding of the value of research.

Smart Goal: Increase external understanding and awareness of West Virginia's STEM strengths and attract new STEM-based businesses by increasing external communication, public relations, and marketing activities starting January 1, 2016

The Division of Science and Research is continuing to host nationally-recognized STEM speakers via the Chancellor's STEM Speaker series. We also highlight West Virginia scientists and their research in brief documentary-style videos hosted on YouTube and promoted through *The Neuron*, Facebook and Twitter.

Key Objective: Innovation Economy Development

Smart Goal: Grow number of technology based businesses by 2% annually starting July 2016

No information available

Smart Goal: Increase research and development public and private expenditures in WV by 6% annually starting January 1, 2016

The latest data from NSF on research expenditure shows that public university research expenditures have grown by 6.5% from 2015 to 2017 and 5.98% from 2016 to 2017. The latest data available are 2017 research expenditures. The 2018 data will be released in late November 2019.