

Policy Objective 6: Increase basic, applied, and translational research to create new knowledge and economic growth.

Strategy 6.1. Support the critical role that the University of Kentucky and the University of Louisville play in the creation of new knowledge and recognize universities and faculty members for the advancement of knowledge and enlightenment.

- Campuses are increasing career pathways for young researchers, engaging students in entrepreneurial opportunities, and recruiting international researchers, which is increasing research capacity and new business development in the Commonwealth.

Strategy 6.2. Support collaborative research efforts that leverage university expertise, lead to research investments and commercialization in high-growth or emerging areas, and are aligned with business and industry growth.

- Collaborative research with and between institutions and disciplines has provided opportunities for investments and commercialization in high-growth areas. Coordinated and focused research between physicians and engineers is increasing commercialization in emerging biomedical fields. A number of pharmaceutical discoveries have led to cutting-edge treatments for diseases such as cancer, diabetes and heart disease, which have created both social and economic benefits. The University of Louisville's Spinal Cord Institute, the Frazier Rehabilitation Center, the Brown and Markey Cancer Centers, the Gill Institute and many others are positioned to address some of Kentucky's most serious public health challenges.

Strategy 6.3. Develop and implement a strategic communications plan that highlights campus-based research and development initiatives and the impact of this work on Kentucky's economic and community competitiveness.

- Kentucky's public universities had the opportunity this year to present their work before a number of innovation, entrepreneurial, and business summits and conferences, including the Interim Joint Committee on Education and other state government groups. Promoting the value of university research to the

General Assembly, policy makers, and the public remains a challenge. Many of our institutions post research findings on their campus websites and highlight individual and collaborative work related to R&D activities. UK posts short video clips promoting their research at <http://reveal.uky.edu/>, and UofL provides a link to its innovations center, Nucleus, <http://nucleusky.com/>, which provides business management and consulting services for entrepreneurs engaged in innovation and research. The regional institutions provide links to their research and technology centers as well. A subscription to an external service that would maintain an inventory of all of Kentucky's university research and development initiatives is under discussion. The Council facilitates joint meetings of the Vice Presidents for Research and campus officers of sponsored programs, which have encouraged more collaboration among universities on projects of mutual interest.

Strategy 6.4. Secure additional funding for research matching programs and explore new funding approaches to maximize research, Kentucky Innovation Act investments, and multi-campus collaborations.

- Kentucky's investments in research matching programs have not been sustained in recent years. Sequestration and limited state funds have required our institutions to be very intentional about the human capital invested in research, in order to reap the largest dividends. Bringing researchers to Kentucky and providing career pathways for future researchers requires capital investments in research facilities. Both UK and UofL have made investments in research facilities that have proven effective in attracting researchers who bring federal funding with them, which in turn attracts students to these disciplines. Commercializing these research efforts through the work of the Kentucky Science and Technology Program has been extremely effective. While some of these investments may ultimately result in the sale of companies outside Kentucky, equity holdings continue to contribute to funding for future investment growth.

Strategy 6.5. Advance Kentucky's STEM+H agenda through ongoing leadership, advocacy, and collaborative efforts.

- The growth in STEM+H degrees has steadily increased and now exceeds the Strategic Agenda target for 2013-14. CPE provides funds to the Kentucky Center for Mathematics, which has improved K-12 math instruction and students' aptitude and interest in pursuing careers in mathematics fields. The Council also supports Project Lead the Way, a middle and high school problem-based contextual learning curriculum. Project Lead the Way creates dynamic partnerships with schools and industry in order to prepare an increasing and more diverse group of students for success in engineering and engineering technology programs. Project Lead the Way also has a Biomedical Sciences™ program that provides an introduction to numerous medical fields and the biomedical sciences.

Strategy 6.6. Foster an innovative, creative, and entrepreneurial culture within the postsecondary education community.

- In 2014, the second Governor’s School for Entrepreneurs was held, hosted by Georgetown College. A select group of high school students were chosen to participate in this three-week summer residential program, where they worked in teams to learn the components of a business model and how to give a business pitch. The program engaged these teen entrepreneurs in lean startup methodology, and required them to apply STEM skills to design and build a prototype of their product or service.