

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

To compete in a global economy, postsecondary education must focus on creating a citizenry that not only has content knowledge in fields of study, but also is comprised of critical thinkers, problem solvers, and innovators. Fostering networks devoted to developing innovative and creative solutions to society's problems and transferring this knowledge by moving intellectual research into the marketplace are vital. Doing so requires a collaborative spirit with and between our institutions, the business community, and government.

For example, discoveries are taking place at our public institutions that solve global problems, from weather and climate data services in western Kentucky, space science and nano-satellite technologies in eastern Kentucky, to medical research across the Commonwealth. These endeavors educate our students, encourage their innovative thinking and are channeled into the private sector as job creation and business development. While resources are limited to provide research funding, Kentucky faces both an opportunity and a challenge. While external research and development funding has grown substantially since higher education reform, we still lag behind many of our benchmarks as well as the national average for all institutions.

### **PROGRESS**

- Even in a severe global recession, leadership provided in collaboration with the Kentucky Science and Technology Corporation (KSTC) has incorporated Kentucky's research, technology, commercialization, entrepreneurial, and economic development efforts. Additionally, Bucks for Brains, Regional Stewardship, and Small Business Innovation Research-Small Business Technology Transfer (SBIR-STTR) have been very effective public investments.
- The Kentucky Science and Engineering Fund (KSEF) builds science and engineering capacity by proactively investing in advanced and application-oriented R&D, to strengthen innovative ideas and shape them to emerging technologies for commercialization. Commercialization investments enable university faculty in commercializing the technologies developed through R&D to create new businesses. Additional programs are designed to aid for-profit Kentucky-based companies to write competitive proposals to receive SBIR

and STTR supported funds from participating federal agencies. These same companies may qualify for additional matching funds as well. This infrastructure works to realize commercial potential of R&D, offering peer review and a follow-up on developing technologies to realize their commercial potential.

- In addition to the investments of the state through these knowledge-based funded programs with our institutions and rural initiatives, are pathways to careers in science and technology. Project Lead the Way is now offering pre-engineering, as well as biomedical sciences curricula, enhanced by both the requirement and commitment of school districts and community businesses. Advance Kentucky has provided professional development for secondary teachers improving Kentucky's ACT scores particularly in math, science and language arts providing additional opportunity for dual credit and college-career ready student achievement. Initiated in 2013 is the Governor's School for Entrepreneurs. Building a pathway for young entrepreneurs, channeling their education into thinking creatively and encouraged innovative ideas may bolster the number of researchers living and working in Kentucky.

## **NEXT STEPS**

Recent presentations before the Chamber of Commerce and the Kentucky General Assembly have helped to raise the profile of research activity at each of our public institutions. As we continue to spotlight researchers and their students, collaborative research and businesses are emerging to investigate state, national and global issues. The universities' vice presidents for research are developing meaningful metrics of R&D efforts on their campuses and within their regions. Regional Stewardship throughout the state, utilizing the knowledge base of Kentucky faculty, students, and entrepreneurs, has gained momentum even in an unstable economy. A communications plan to raise the profile of researchers, and their accomplishments, delineating how interdisciplinary sectors offer true opportunity, is under development. Building institutional partnerships while protecting intellectual property (IP) and determining how best to contain costs are being studied. Highlighting the accomplishments of faculty, entrepreneurs, and mentoring students through expanded opportunities for internships with and for Kentucky companies will foster innovation, creativity and an entrepreneurial culture both within and outside the Commonwealth. The application of original knowledge provides a way to engage the public in academic achievement, help create jobs, and grow our state's economy.

