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University of Illinois Response to the OSTP Request for Information on Building a 21st Century Bioeconomy

University of Illinois faculty, staff, and students conduct millions of dollars in biological research every year. This research leads to innovations and technological advances. When this technology is commercialized, it can lead to new jobs and even to new industries. These industries need skilled workers, and universities train those workers to succeed, innovate, and start the cycle over again. Because we are so clearly a part of the Bioeconomy, the University of Illinois appreciates the opportunity to provide comments to OSTP regarding the Administration's Bioeconomy Blueprint.

Indeed, scientists on our Urbana campus are pursuing some of the country's most important biological research in genomics and medicine, looking for critical solutions to drive energy independence, developing cutting-edge materials to enable advanced manufacturing, and pursuing novel solutions to information technology challenges. Our Chicago campus, with its medical school and healthcare system, receives millions of dollars in federal funding to address health disparities by developing novel drugs, innovative treatments, and social programs. Additionally, research at our Springfield campus contributes to the policy and education aspects of the Bioeconomy.

A 21st Century Bioeconomy has many components, but at its heart is a robust, thriving research enterprise that enables the innovation and creative thinking that advances job creation and commercialization activities. Simply put, any "blueprint" for building a Bioeconomy for the 21st century must incorporate an aggressive and robust research portfolio.

In response to Question #5, "What are the barriers preventing biological research discoveries from moving from the lab to the commercial markets?," we believe that the federal government should take an active role in supporting commercialization efforts that move discovery from the lab to the marketplace. The University of Illinois has embraced its role in economic development and has put in place a series of resources and initiatives that demonstrate this commitment. The Research Park, which was just named the 2011 "Outstanding Research Park" by the Association of University Research Parks, is perhaps the most visible. Home to more than 90 companies employing more than 1,200 people, the

Research Park provides internship opportunities for students, resources for faculty to commercialize new technology in conjunction with academic work, and engagement opportunities for companies who want to collaborate with the University of Illinois.

Additional programs that support entrepreneurship and economic development at the University of Illinois include:

Licensing and Commercialization: The University of Illinois is the sixth leading source of patents in the state of Illinois and the only university in the top ten. In fact, our efforts to encourage our faculty to think entrepreneurially yielded a record number of start-up companies in fiscal year 2011. Additionally, the Offices of Technology Management on the Urbana and Chicago campuses have significantly increased revenue from licenses and options over the last several years, to more than \$19.08 million in fiscal year 2011, up from \$9.03 million just five years ago. In 2010 and 2011, both campuses created proof-of-concept funding programs to help advance development and attract licensing partners for our high-potential technologies.

Startup Support: EnterpriseWorks is a small business incubator that helps fledgling companies succeed by providing an array of shared facilities, equipment, and support services (such as the Entrepreneur-in-Residence program and the I-Start professional launch) as well as weekly programming, educational forums, and social networking opportunities to encourage collaboration. Since opening in 2003, EnterpriseWorks incubation facilities have become the launching pad for 127 startup companies, over half of which spun out of a University research lab.

Venture Capital: In 2000, the U of I conceived of a venture capital fund that would invest in companies derived from faculty-based research, and in 2003, IllinoisVentures invested in its first portfolio company. To date, IllinoisVentures has had extensive impact on the vitality of the Illinois economy, investing \$38 million in 69 startups that employ technology from the U of I and other Midwest universities and federal laboratories. These companies have created more than 450 jobs and have raised over \$450 million from other funding sources – an impressive 12:1 leverage ratio.

Additional Activities: The Chicago campus, together with the National Institutes for Health (NIH), became the first in the world to share patents with Unitaid's Medicines Patent Pool, which makes new medicines more affordable in developing countries. The Urbana campus developed a unique label license that will encourage broad industry adoption of a portfolio of technologies that has the potential to greatly enhance the syntheses of many chemically important small molecules, such as pharmaceuticals and natural products.

The University's initiatives as described above each contribute to the evolution of a new university culture – one that invests in and rewards entrepreneurial pursuits, and ultimately fosters economic development and advances the country's global competitiveness. Since 2000, the University has increased its research budget by more than 50% to over \$900 million today, catapulting it to the top Illinois research university. Likewise, the pace of startup company formation, patents and licensing activity, and

collaboration with industry continues to increase over time, providing significant and demonstrable economic impact and serving as a national benchmark. As the University of Illinois looks toward the 150th anniversary of the Morrill Act, we assert that it is time for the reinsertion of the American Research University as the renewable source of innovation and driver of our Bioeconomy.

We would be pleased to answer any additional follow-up questions. Feel free to contact me should you wish to discuss these issues further.

Sincerely,

Lawrence B. Schook
Vice President for Research