

# Executive Summary

Scientific advancement. Growing the economy and creating jobs. Improving the quality of life. These are the rewards that are reaped from “innovation” - the search, development and commercialization of the next great idea, process, product or technology.

While New Jersey has been historically a national and global leader in innovation, from the first U.S. manufacturing facilities on the Passaic Falls, to being the home of the telecommunications and pharmaceutical industries, the state now has greater competition for industrial research and development (R&D) investment. As the early center of the country’s research-based industries, the private sector was able to support New Jersey’s innovation economy with little assistance. These innovator companies had the capital to invest in hiring their own researchers, building their own laboratories, and conducting all their research in-house. In fact, these industries did not just do market driven research but they conducted research for the sake of advancing science. Likewise, there was little competition from other states and emerging economies that did not have the benefit of an embedded industrial base. Thus, there was little need for R&D support from New Jersey’s government or its academic institutions. Consequently, they took a laissez-faire approach to New Jersey’s innovator industries and a chasm grew between industry and the academic communities.

In comparison, over the past 30-40 years, in their crusade to compete for the economic benefits that are generated by industry’s R&D investment, other states’ governments have been aggressively developing their “innovation ecosystems”- the marrying of the R&D efforts and resources of government, academia and industry. Most notably, these states have learned how to leverage their academic resources (i.e., talent, facilities and equipment) to jump-start their innovation economies. They recognized the trends that collaboration between academia and industry could advance their economies, and collaboration between academic institutions could further leverage resources to attract industry partnerships and build their states’ innovation ecosystems. As innovator companies outsource an increasing level of their research and seek to work with the leading experts in their fields, states that are using their academic resources as economic development tools have gained an

advantage in attracting industry investment by being able to meet the varying R&D needs of mature and emerging research-based companies.

Utilizing their academic resources for economic development purposes has proven to be highly successful for competing states in attracting and retaining industry investment, ratcheting up the pressure on New Jersey state government and its academic institutions to meet this challenge and provide a competitive level of support.

This report builds upon the work of NJPRO’s July 2010 report, *Building Bridges Between Academic Institutions, Business and Government to Bring Innovation to the Marketplace* (<http://www.njprofoundation.org/pages/bridges.htm>) That report proposed that New Jersey’s universities and colleges now serve as a cornerstone for the state’s innovation economy to attract increased industry investment and be a catalyst for economic growth.

For this follow-up report, *Building Bridges II: Breaking Down Barriers: Perspectives from Academia and Industry on Building a New Jersey Innovation Ecosystem*, NJPRO partnered with InnovationNJ to conduct a series of eight industry-specific focus groups consisting of industry and academic participants, to discuss how to foster an environment for greater collaboration between industry and academia in New Jersey. Five challenges emerged from the focus group discussions as to what is inhibiting greater industry collaboration with New Jersey academic institutions:

- The need to alleviate the administrative burdens associated with partnering with a New Jersey academic institution.
- The need to improve the coordination of State, industry and academic R&D efforts and resources.
- The need to bridge the clashing cultural differences between industry and academia.
- The need to raise awareness throughout the business community of New Jersey’s academic assets.
- The need to have the State, industry and academia work together to secure increased R&D funding, especially from federal government sources.

To address these five challenges, the focus groups also generated 15 recommendations, each of which will be discussed in this report:

- To encourage greater collaboration, the State, industry and academia should collectively work to reform their IP protocols and investigate the feasibility of a uniform IP agreement for our State colleges and universities.
- Academic institutions should employ Master Agreements to avoid repetitive negotiations and to increase the efficiency of the execution of collaboration agreements.
- The State needs to identify within its institutions of higher education the expertise and resources that could form the basis for Centers of Excellence. Designation of a single center of excellence for a specific research topic would target resources and provide guidance to interested parties searching for a research partner.
- Academia, industry and the State should form consortiums dedicated to producing innovative ideas, products, and services and to attract increased federal funding.
- The State, industry and academia should work together to bring thriving and productive professional conferences to New Jersey.
- In an era of reduced and increasingly competitive government funding, academia, industry and the State must combine their resources and efforts to attract increased federal dollars.
- The State should establish a Council on Innovation to advise the Governor, Legislature and other officials on ways to promote innovation and manage the innovation ecosystem.
- The State and institutions of higher education should review their tenure policies to incentivize and reward tenure-track faculty members for conducting industry research.
- Academia and industry need to work together to design internship/co-op programs that provide maximum benefit to all stakeholders.
- Academia should emphasize the teaching of interpersonal skills and provide basic business training for STEM majors to facilitate the translation of research from the lab into commercialized applications.
- Academia should design user-friendly websites, to make it easier for business to find the resources they are seeking and to facilitate potential collaborations.
- New Jersey should more aggressively promote its academic assets to attract potential collaborators and research dollars.
- Academia, industry and the State should establish a comprehensive resource directory that includes existing research areas, capabilities and talent and publicly available assets and facilities at New Jersey colleges and universities.
- Each college and university should publicly promote its own chief administrator to serve as a one-stop-shop for business to access university information and resources.
- The State, academia and industry should find ways to improve co-ordination of their efforts to secure increased federal funding.

This report is intended to serve as a catalyst to get the State, industry and academia to work together to meld their respective R&D assets to build out the State's innovation ecosystem and reassert New Jersey's position as a global leader in innovation.