Best Practices in Business-Academic R&D Collaboration

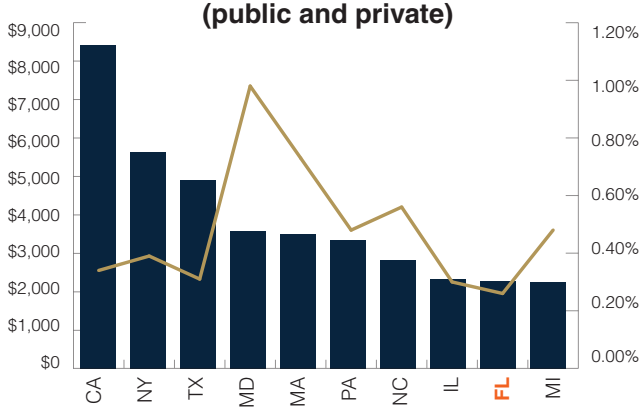
Report No. 2018-01

Along with teaching and public service, research is one of the triad of key responsibilities of higher education in Florida. Through the R&D they generate, Florida's universities play a vital role in our state's economy, building national and international reputations for coordination, collaboration, and innovation. They supply a "highly educated workforce for high-skill, high-wage jobs and companies; employ researchers who tackle some of the most significant [basic and applied research] challenges facing Florida, the nation, and the world; produce intellectual property that can be commercialized through licenses and patents; establish partnerships with industries; promote the creation of startup and spin-off companies; and attract new employers to Florida."

Over the past year, the Higher Education Committee has researched higher education R&D issues, including surveying key institutions and visiting major players to glean barriers to effective business university collaboration and opportunities for improvement. Although this report focuses primarily on the top-5 R&D-producing state universities, we have also included the University of Miami, a private institution, due to the magnitude of its research.

Florida is behind in **HIGHER EDUCATION R&D** & **HIGHER EDUCATION R&D** funded by business.

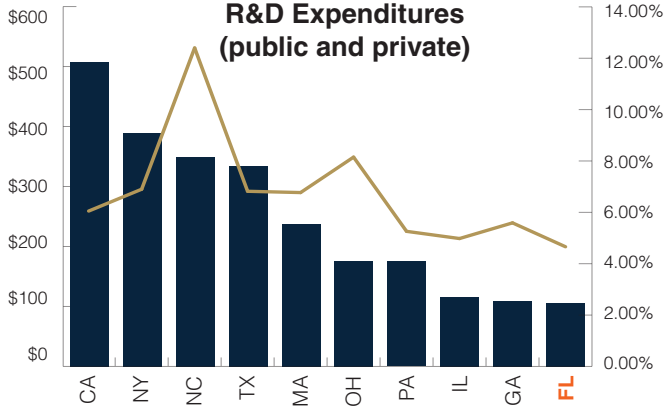
Higher Education R&D Expenditures (public and private)



FL R&D: $2.4 billion **9th**

FL R&D Intensity: **42nd**

Business-Funded Higher Education R&D Expenditures (public and private)



FL R&D: $106 million **10th**

FL % of Higher Ed: **23rd**

Florida's State University System lags only California, Texas, and Michigan for public university research expenditures — and is catching up.

Recommendations

Our recommendations center on three connective themes: (1) the State University System (SUS) as a whole must continue to recruit and empower a successful research team, namely a world-class faculty and staff; (2) Florida must build a robust research & development (R&D) machine; and (3) Florida must enhance the commercialized mission of R&D. Core to these issues remains: how does Florida become number one in R&D by all measures in the world, and what must we do now to equip the system to compete globally? The challenge is to reinvent Florida's R&D model before it becomes obsolete either by being superseded or redundant.

Important to advancing this mission, the SUS should:

1. Continue to enhance the measurement of its successes and return on investment of all sources of funding using metrics that provide tangible, measurable applied results;
2. Continue to develop a better tracking system of the commercialization of our investments. Startups and public and private funding models that foster enterprise level results should be considered if they are determined to be profitable in advancing the overall mission, such as resulting in new economic engines;
3. Refocus to treat all R&D efforts as a statewide endeavor and not solely an individualized university mission. We need to better set unified expectations of the system as a whole;
4. Elevate cooperative collaborations as important measures of results; and
5. Recruit and empower a robust and successful team to perform quality research.

In short, we should always be asking the question, what is the massive transformative purpose of billions of dollars invested through the SUS R&D model?

Overall, it is vital that we strengthen the foundation of Florida's innovation economy. This includes items such as:

Recruit and Empower a World Class Faculty and Staff

Hire and retain (compensating as is required) rock star faculty researchers

Modernize university tenure practices

Recruit high-powered students and cultivate them as researchers

Eliminate barriers to researcher participation in success of R&D

Build a Robust Basic and Applied R&D Machine

Focus on Outcomes

Focus universities on R&D fields in which they have, or can have, a comparative advantage

Foster inter-university collaboration and cooperation

Facilitate innovation by establishing a comprehensive R&D concierge service

Capitalize on existing public and private R&D fixed capital

Continue enhancing R&D measurement

Shift direct and indirect overhead expenditures to primary R&D line operations

Enhance the Commercialized Mission

Create a one-stop online business portal for Florida universities' publicly available research, patents, technologies, and other intellectual property

Greatly increase seed and early stage capital available to university-business partnerships

Bring in the experts! Recruit more business leaders and experienced entrepreneurs to help commercialize public sector research

Bet on winners by focusing new and existing SBIR/STTR matching programs

Go for the game changers

Recreate state as an entire research park of the future

Standardize administrative forms and processes

Consider targeting R&D funding for strategic investment in key sectors

Strategically focus R&D efforts on turbocharging our state economy

Hold formal R&D networking conferences among firms, researchers, and students