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## Economic Development Programs and Higher Education

Higher education has long been viewed as a tool of economic advancement and security, particularly at the individual level. For example, the Federal Reserve found that in 2023, 87% of survey respondents with a bachelor's degree or higher reported they were "doing at least okay financially." This compared to 48% of respondents with less than a high school degree answering the same way.

In recent decades, there has been increased interest in the potential place-based economic development benefits of higher education—that is, the advantages that may accrue at a regional, rather than individual, level, in areas surrounding a college or university. Such positive outcomes may result from technological innovation, knowledge "spillovers" from university-based research into the broader business and entrepreneurial ecosystem, and increased levels of human capital and talent development. Prominent examples of regions that have flourished in part due to the presence of universities include California's Silicon Valley and North Carolina's Research Triangle, both of which have played a part in the idea that higher education can contribute to regional economic growth.

Recent Congresses authorized new programs that have been used to leverage higher education assets toward economic development. For example, the CHIPS and Science Act (P.L. 117-167) authorized the Regional Innovation Engines (RIE) program at the National Science Foundation. RIE activities may include facilitating the adoption, development, and commercialization of research results; training graduate students and conducting outreach to broaden participation in RIE activities; and reimbursing the cost of commercialization activities. The entities eligible to receive RIE funding are U.S.-based institutions of higher education (IHEs) and U.S.-based nonprofit and for-profit organizations.

### Research Findings and Frameworks

Some researchers and practitioners have sought to define higher education-based economic development. For example, the Association of Public and Land-Grant Universities' Innovation and Economic Prosperity Program outlines three areas in which colleges and universities can work on "economic engagement":

- talent and workforce development;
- innovation, entrepreneurship, and technology-based economic development; and
- place development, including through public service and community engagement.

One 1995 study identified the following eight areas of expertise that colleges or universities may use to advance regional economic development:

- knowledge creation;
- human capital creation;
- transfer of existing capacities and technologies;
- technological innovation;
- capital investment;
- regional leadership;
- influence on regional milieu (intellectual, cultural, and social contributions to the region); and
- knowledge of infrastructure production (combining a college or university's stock of knowledge with the organizational structures supporting its application).

Researchers have examined the effects of higher education on economic development. Although there are caveats, studies generally show at least some degree of regional economic benefit to having a nearby college or university. For example, a 2019 study looking at the economic impacts of higher education in multiple countries found that a 10% increase in a region's number of universities per capita is associated with a 0.4% higher future gross domestic product per capita in that region. Other studies have similarly found that the presence of research universities can positively affect metropolitan economies, even while accounting for cyclical economic changes.

Some consider IHEs beneficial to regional economies due to knowledge spillovers. This concept of knowledge spillovers holds that colleges and universities, through their research activities, will generate ideas that will transfer outside of university settings to nearby areas. This knowledge transfer may then lead to further innovation and entrepreneurial activity. Some researchers have posited that these knowledge spillovers are the primary way that colleges and universities impact their region's economy.

Colleges and universities may also contribute to regional economic development through a formal process of technology transfer. The Patent and Trademark Law Amendments Act of 1980 (Bayh-Dole; P.L. 96-517, as amended) permits institutions such as colleges and universities to hold the title to patents on inventions resulting from government-funded research and to license the rights to those inventions to businesses and entrepreneurs. This process of technology transfer can be a valuable source of revenue for a college or university. Some have credited Bayh-Dole with increasing interest in commercializing research generated at colleges and universities, and many colleges and universities now have offices dedicated to advancing technology transfer.

Another way colleges and universities may facilitate economic development is through human capital

development. By educating individuals, including a number who may stay in the area following their studies, colleges and universities may increase the productivity of their region. Alongside knowledge spillovers and innovation, some studies have found human capital development to be one of the main ways that higher education may affect economic development.

### Selected Federal Programs

The federal government operates a number of programs that incorporate higher education into their economic development strategy. While these programs employ a variety of techniques, they also use a few types of specific approaches. Those include providing technical assistance; enhancing research and development (R&D) and commercialization; and facilitating entrepreneurship and entrepreneurship education.

#### Technical Assistance

Some programs connect IHEs with technical assistance to further business and economic development. For example, the Small Business Administration's (SBA's) Small Business Development Centers (SBDCs) provide free counseling and resources to small business owners. SBDCs operate in partnership with state governments and IHEs. Federal funding for SBDCs is provided through grants to state agencies or IHEs that then operate SBDCs.

The National Institute of Standards and Technology administers the Hollings Manufacturing Extension Partnership (MEP) program, a national network of centers providing custom services to small- and medium-sized manufacturers to improve production processes, upgrade technological capabilities, and facilitate product innovation. One of the statutory goals of MEP centers is to enhance productivity and technology performance in U.S. manufacturing through the participation of individuals from industry and universities (among other entities) in cooperative technology transfer activities. Each MEP center is operated by a state government, college or university, or other nonprofit organization.

The Economic Development Administration's (EDA's) University Centers (UC) program awards grants to IHEs that operate UCs that then provide technical assistance to public and private sector organizations to enhance local economic development. There are 72 UCs covering 47 states and territories.

#### R&D and Commercialization

Other programs provide a role for higher education to assist with R&D and technology commercialization. The Small Business Technology Transfer (STTR) program, centrally administered by SBA but currently operated by five other federal agencies, is designed to facilitate the commercialization of university and federal R&D by small companies. Agencies with extramural R&D budgets of \$1 billion or more are required to set aside a portion of these funds to finance an agency-run STTR program.

EDA also plays a role in connecting IHEs with technology commercialization. EDA's Office of Innovation

Entrepreneurship coordinates interagency activities related to innovation, commercialization, and entrepreneurship. Among the programs OIE administers is Build to Scale (B2S). B2S funds efforts to facilitate innovation and entrepreneurship and increase access to risk capital. B2S awardees are often IHEs. For example, B2S's FY2023 awardees included at least 14 IHEs.

#### Entrepreneurship and Entrepreneurship Education

Another category of programs seeks to give colleges and universities a direct role in building entrepreneurship. The Minority Business Development Act of 2021 (Division K of the Infrastructure Investment and Jobs Act, P.L. 117-58) authorized the Minority Business Development Agency (MBDA) to implement new entrepreneurship education development activities, including some that award grants to colleges and universities. The law also directed MBDA to partner with public and private sector entities and educational institutions to support opportunities for business education, apprenticeships, entrepreneurship training, and related activities for the benefit of socially or economically disadvantaged individuals.

#### Considerations for Congress

As seen with MBDA's increased responsibilities, in recent years, Congress has authorized a number of new federal programs to use higher education to boost economic development. Some Members of Congress have also expressed interest in expanding existing programs. In the 118<sup>th</sup> Congress, H.R. 6130 and S. 3169 would, among other things, require a UC in every state.

Congress could conduct oversight of any new programs' implementation to assess their efficacy and consider findings of previous evaluations in attempts to expand other programs. For instance, a 2014 third-party evaluation of EDA's UC program found that new and smaller UCs may have fewer resources than larger, more established UCs, and, as a result, should have a different set of expectations. Congress may want to consider the resources and capabilities of newly established UCs in any potential legislation establishing goals for the centers.

According to an October 2023 report from the National Science Board, the federal government funded nearly 55% of academic R&D expenditures in FY2021. The report also found that 131 institutions received nearly 75% of federal academic R&D funding, out of 3,733 institutions awarding four-year degrees. There are a number of federal programs intended to address the geographic concentration of federal R&D funding. These include the Established Program to Stimulate Competitive Research (EPSCoR) and EPSCoR-like programs, which are currently active at five federal agencies. Congress could consider expanding such efforts. Congress could also study whether less concentrated federal academic R&D funding is likely to have any impact on regional economic development.

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