# The History of Research Parks and Their Evolution into Innovation Districts

Exploring U.S. Federal Support for Creating Communities of Innovation





## **Executive Summary**

The world's first research park was founded by Stanford University as Stanford Industry Park in 1951 to bring industry to the then relatively remote Stanford campus. The university research park model evolved into mixed-use communities of innovation serving not only the university, but surrounding community; since that time, the research park model spread across the U.S, and around the globe.

While research parks and innovation districts in other parts of the world have traditionally been supported by government sources, research parks in the U.S. have been built by universities, private sector, plus local and state resources. More recently, the U.S. government through its interest in use-inspired research, spurring economic development across the entire US, increasing the nation's competitiveness, and involving more underserved higher education institutions, is having an important role in catalyzing growth of research parks and regional tech hubs in our country.

AURP was founded in 1984 in Arizona as a non-profit membership association by the directors of Stanford Research Park, Research Triangle Park in North Carolina, Arizona State University Research Park, and others.

Since our founding, our membership has grown as more universities, federal laboratories, hospitals, and communities across the country have built or are building parks and districts to drive knowledge communities and economic growth. (www.aurp.net) This report summarizes the evolution and growth of research parks into innovation districts and the role new federal funding plays in making the U.S. more technologically competitive.

The paper includes an overview of numerous place-based federal funding opportunities from the Economic Development Administration (EDA), the National Science Foundation (NSF), the National Institute for Standards and Technology (NIST), the Small Business Administration (SBA) and others with an assessment of the large gap between appropriated funds in federal budgets and the amounts Congress authorized up to now. The paper includes several federal policy recommendations in the conclusion to help build tech hubs and communities of innovation faster with more local impact.

# **The History of Research Parks and Their Evolution into Innovation Districts**

#### Early history of knowledge communities:

Universities have existed in some shape for a millennium and the emergence of the research university model originally based in Germany, was then developed in the U.S. The Land Grant Act signed by President Lincoln created the outreach mission of public universities in the U.S. to serve local industry, predominantly agriculture at the time the Act was signed.

Outside of colleges and universities, other knowledge communities developed. Since time immemorial societies have gathered whether in bazaars in the Middle East to coffee shops in England where businesses such as Lloyds of London were founded through customers swapping stories on the fate of merchant ships. The increasing urbanization of the world and transformation from an agrarian culture to one based on industry and technology led to the formation of new firms exploiting new business models, commerce, and trade.

In the late 1880s, the famous economist Alfred Marshall developed his agglomeration theory, noting that benefits come when firms and people locate near one another in cities and industrial clusters. Economists Michael Porter from Harvard University and Richard Florida from University of Toronto would explore and expand these concepts towards the

end of the 20th century through identifying principles of national and city competitiveness through adoption of innovation. Research parks, and later innovation districts, incubators, and accelerators, would demonstrate intentional strategies, sponsored first by universities, and later by cities, hospitals, government laboratories and related entities, to form communities of innovation in the U.S. and around the globe.

The U.S. Federal Government did not take a lead on this development in contrast to national governments in other parts of the world, particularly Asia, where supportive national



An Early Knowledge Community: Lloyds Coffee House in London where Lloyds of London was founded by customers sharing information on shipping history.

policies spurred creation of large mega research parks and research cities. Instead, the U.S. government relied on federal funding for basic research to spur economic innovation, but lately has pivoted to added funding for applied research and development and support for technology hubs.

#### Development of the world's first university research park

University research parks have a rich and fascinating history that dates back several decades. The concept of research parks emerged to foster collaboration between academia and industry, promote innovation, and drive economic growth. The idea of research parks can be traced back to the 1940s and 1950s when universities and government agencies sought to establish closer ties with industry to accelerate scientific and technological advancements. One of the earliest examples is the Stanford Industrial Park, established in 1951, which provided land and facilities to companies interested in working closely with Stanford University.

In the late 1940s, California's Stanford University found itself in difficult financial circumstances. Provost and Dean of Engineering, Frederick Terman, proposed using an area of Stanford's excess land (Silicon Valley was still 30 years in the future) to entice industry to locate near the university and its students, and generate tax revenue for the City of Palo Alto. Thus, Stanford Industrial Park was born in a partnership with the City of Palo Alto, and the park later changed its name to Stanford Research Park, situated on 209 acres of former almond orchard. In 1952, Varian Associates moved into the park as its first tenant.



Palo Alto Groundbreaking for Stanford Industrial Park, 1951

In the 1960s and 1970s, based on the Stanford model, research parks started gaining momentum across the United States. The Research Triangle Park (RTP) in North Carolina, established in 1959, became a model for subsequent parks. RTP brought together Duke University, the University of North Carolina at Chapel Hill, and North Carolina State University, along with private industry, creating a collaborative environment for research and development.

During the 1980s and 1990s, university research parks increasingly relied on public-private partnerships to fund their development and operations. This model involved collaborations between universities, government entities, and private companies to build infrastructure, provide resources, and create an environment conducive to innovation. The University of Utah Research Park, established in 1968, is an example of a successful public-private partnership.

In the 21st century, research parks expanded their focus beyond traditional scientific disciplines to include technology, entrepreneurship, and knowledge-based industries. Many parks started offering specialized facilities and support services tailored to the needs of specific industries such as biotechnology, information technology, and clean energy. Research Triangle Park, for instance, began to incorporate more technology-oriented companies.

The concept of university research parks has spread beyond the United States and can now be found worldwide. Countries such as Canada, the United Kingdom, Australia, and China have established their own research parks, often modeled after successful American examples. These parks have become instrumental in attracting talent, encouraging innovation, and driving regional economic growth.

In recent years, university research parks have evolved into innovative ecosystems that foster entrepreneurship and startup creation. Many parks provide incubators, accelerators, and funding opportunities for budding entrepreneurs and researchers looking to commercialize their innovations. These developments have further strengthened the link between academia, industry, and the broader startup community. In the 2000s, AURP adopted the tagline 'Creating Communities of Innovation' to reflect the integration of real estate with entrepreneurial ecosystems.

#### **Collaborative Partnerships and Open Innovation**

As research parks continue to evolve, they are increasingly emphasizing collaboration and open innovation. Universities and companies are working together more closely, sharing resources, knowledge, and expertise to address complex challenges. Open innovation models, where research parks facilitate the flow of ideas and technologies across organizations, are gaining popularity, further enhancing the impact of these parks.

University research parks have a history rooted in collaboration, innovation, and economic development. Over the years, they have evolved into dynamic ecosystems that bring together academia, industry, and entrepreneurs to drive scientific progress, technological innovation, and economic growth. The 2014 Brookings Institution report <u>"The Rise of Innovation Districts"</u> brought attention to this development within the economic development community.

A parallel development with research parks was the development of technology incubators, and later, accelerators. The formal concept



of business incubation began in the U.S. in 1959 when Joseph L. Mancuso opened the Batavia Industrial Center in a Batavia, NY warehouse that was about to close. This early concept of

multi-tenant small business support facilities would morph into technology incubators within universities and university research parks, into co-working space, such as WeWork, and into technology accelerators, providing coaching and support for high growth technology companies. Incubation expanded in the U.S. in the 1980s and spread to the United Kingdom, Europe and Asia through various related forms.

In particular, accelerators have spun out many companies that are large tech firms with multi-million dollar valuations. Pitchbook has analyzed the performance of national technology accelerators, such as Y Combinator (YC), Mass Challenge, 500 Global, and Techstars, that are producing new technology companies across the country and have become important cogs in the U.S. innovation ecosystem. A new report provides insights into their role in supporting the development of emerging technology companies.



Click above



The evolution of research parks into innovation districts with incubation and acceleration as support elements reflects the changing nature of the knowledge economy and the desire to foster collaboration, creativity, and entrepreneurship. While research parks have traditionally focused on providing physical infrastructure and resources to support research and development activities, innovation districts take a more holistic approach to promoting innovation and economic growth.

Here are some key characteristics and factors driving the evolution from research parks to innovation districts:

1. Collaboration and Connectivity: Innovation districts aim to bring together diverse stakeholders, including researchers, entrepreneurs, startups, established companies, government agencies, and educational institutions. The focus is on creating a vibrant ecosystem that facilitates collaboration, knowledge sharing, and serendipitous interactions among these actors. This connectivity fosters cross-pollination of ideas, accelerates innovation, and enhances the overall productivity of the district.



- 2. Mixed-Use Development: Research parks and innovation districts incorporate a mix of residential, commercial, retail, and cultural spaces. This integrated approach aims to create a live-work-play environment that attracts talent, supports a vibrant community, and enhances the quality of life. The presence of amenities such as housing, restaurants, parks, and entertainment venues helps attract and retain creative individuals and businesses.
- **3. Knowledge and Technology Transfer:** While research parks have typically focused on the commercialization of research outcomes, innovation districts take a broader view of knowledge and technology transfer. They actively promote the exchange of ideas, intellectual property, and expertise between academia, industry, and the wider community. This transfer can occur through various channels, including spin-off companies, incubators, accelerators, licensing agreements, joint ventures, and collaborative research projects.
- 4. Entrepreneurial Ecosystem: Innovation districts place a strong emphasis on supporting entrepreneurship and startups. They provide resources, such as incubation spaces, mentorship programs, funding opportunities, and access to a network of investors, to nurture the growth of new ventures. By fostering a supportive ecosystem, innovation districts encourage the formation of innovative companies, job creation, and economic diversification.
- 5. Sustainability and Urban Revitalization: Many innovation districts are in urban areas, often in previously underutilized or distressed neighborhoods. Their development contributes to urban revitalization efforts by repurposing vacant buildings, creating employment opportunities, and attracting private investment. Additionally, innovation districts often prioritize sustainable design, with a focus on energy efficiency, green spaces, walkability, and public transportation, to promote a more environmentally friendly and livable urban environment.
- 6. Policy Support: The evolution of research parks into innovation districts has been supported by policy initiatives at various levels, including local, regional, and national governments. Governments recognize the importance of innovation, economic growth, and job creation, and have implemented policies to foster the development of innovation districts. These policies may include tax incentives, grants, streamlined regulations, and partnerships between public and private entities.

Overall, the transformation from research parks to innovation districts reflects a shift towards a more dynamic and inclusive approach to fostering innovation and economic development. As technology talent becomes more critical, corporations realized setting up pilot facilities in university research parks gave them increased visibility to STEM students and other highly sought after talent, becoming a pathway for recruitment. Having a robust innovation district with housing, childcare and entertainment makes university cities more 'sticky' for recent graduates to stay in the region. In short, innovation districts provide the infrastructure, environment, and supportive ecosystem necessary to drive collaboration, entrepreneurship, and knowledge transfer, with a focus on creating sustainable and vibrant communities.

#### **National Policy Support Groups:**

Research parks, innovation districts, technology incubators and accelerators are integrated into other national technology support organizations groups missions, such as the State Science and Technology Institute (<u>ssti.org</u>), International Business Innovation Association (<u>inbia.org</u>), AUTM (<u>autm.net</u>), University Industry Demonstration Partnership (<u>uidp.org</u>), and International Economic Development Council (<u>iedconline.org</u>).

The emerging role of research parks and innovation districts and linkages to other groups is illustrated by the geographic and institutional diversity of attendees at AURP events as outlined in Appendix 1.







With the growth of CHIPS and Science tech hubs, and sector specific innovation parks and technology clusters of firms within parks, AURP has created several categories of member parks to support specific opportunity areas, including the Bio Health Caucus, Air and Space Caucus, and the Clean Energy and Building Resiliency Caucus. AURP plans to launch a Microelectronics Commons Caucus, given the \$13 billion federal investment soon to be made in microelectronics research in applied university and other research centers across the U.S., through the CHIPS Act, discussed below.

#### **Federal Support for Research Parks and Innovation Districts**

Research parks historically have been supported as initiatives of universities, with additional funding from private sector, city, regional and state government sources.

Federal funding of research parks traditionally has been indirectly through basic research grants to universities by federal agencies such as NIH or NSF Engineering Research Grants, where universities did not have on campus space for new federal funding. More recently the federal government has shown intentionality to applied research through tech hub regions. The federal government recently played a key role in supporting development of research parks, innovation districts and regional tech hubs through various policy and funding mechanisms, including the recent CHIPS and Science Act.

One of the earlier explicit federal funding mechanisms for support of research parks and innovation districts was creation of the Economic Development Administration (EDA) Office of Innovation and Entrepreneurship (OIE). Established by the America COMPETES Reauthorization Act of 2010, the EDA Office of Innovation and Entrepreneurship aims to empower communities so that entrepreneurs can launch companies, scale technologies, and create the jobs of tomorrow.

OIE manages several grant competitions that support high-growth entrepreneurship, create jobs, and drive economic growth. The EDA OIE collaborates across the federal innovation and entrepreneurship policy and program landscape and leads the National Advisory Council on Innovation and Entrepreneurship.

In 2014, EDA OIE held a competition for Science and Research Parks Development Grants that went to the following applicants:

- Ann Arbor SPARK, Ann Arbor, MI
- California Polytechnic State University, San Luis Obispo, CA
- · <u>Clemson University Land Stewardship Foundation, Inc.</u> (CULSF), Clemson, SC
- Georgia Tech Research Corporation, Atlanta, GA
- Nevada County Economic Resource Council Foundation, Inc., Grass Valley, CA
- Palm Beach County Board of County Commissioners, West Palm Beach, FL
- Pittsburg State University, Pittsburg, KS
- The Regents of New Mexico State University, Las Cruces, NM
- Rutgers, The State University of New Jersey, New Brunswick, NJ
- St. Louis Economic Development Partnership, St. Louis, MO
- The University of Tennessee Health Science Center, Memphis, TN
- Washington State University, Pullman, WA

More recently, EDA held the \$1 Billion Build Back Better Regional Challenge, and on September 2, 2022, twenty-one regional coalitions across the country were funded with \$25 million to \$65 million in technology areas including advanced manufacturing, biotechnology, and clean energy.



Notably, funding for research parks, incubators, and wet labs were some of the place-based investments that are eligible with this EDA Build Back Better funding:

EDA Build Back Better Implementation grant costs:

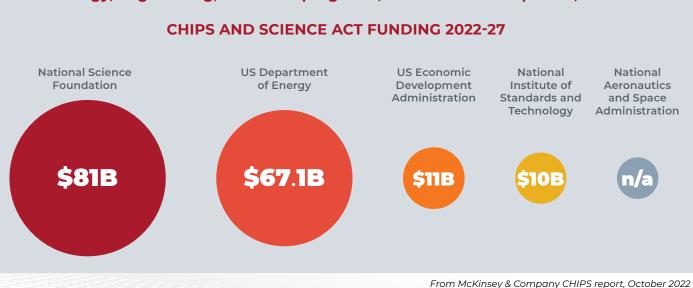
Some other eligible Phase 2 implementation grant costs include construction activities, such as water and sewer system improvements, industrial parks, shipping and logistics facilities, business incubators and accelerators, brownfield redevelopment, technologybased facilities, wet labs, multi-tenant manufacturing facilities, science and research parks, transportation enhancements, and telecommunications infrastructure (e.g., broadband). Eligible non-construction activities can include design and engineering, technical assistance, economic recovery strategy development, market feasibility studies, and the capitalization of revolving loan funds (RLFs).

After implementation of the Build Back Better program through the American Rescue Plan, Congress next enacted a much more ambitious program entitled the CHIPS and Science Act.

The CHIPS (Creating Helpful Incentives for Producing Semiconductors) and Science Act passed Congress and was signed into law by President Biden on August 9, 2022. The Science portions of the Act would authorize the largest five-year investment in public R&D in U.S. history.

One important motive in passing the bill was to spread research and development funding and its impact in more areas of the U.S. than has occurred historically.

Overall, the Science portion of the CHIPS and Science Act authorizes \$174 billion in spending over the next five years. Most of the authorized funding is for scientific R&D and commercialization.



## The CHIPS and Science Act authorizes \$174 billion for investment in science, technology, engineering, and math programs, workforce development, and R&D

The History of Research Parks and Their Evolution into Innovation Districts

Notably, the Act calls for an estimated **\$77 billion for development of technology hubs** across the U.S. funded by the U.S. Department of Commerce (DOC), National Science Foundation (NSF), and U.S. Department of Energy (DOE), that will be explored in detail below.

But this funding has not yet been appropriated by Congress. Nevertheless, research parks, innovation districts, businesses, universities, federal labs, states, regions, and communities should prepare and strategize on how to compete for this unprecedented level of funding.

And <u>in an analysis</u> of the bill just after its passage in Congress, Mark Muro, a senior fellow and policy director at the Brookings Institution's Metro program, said the hubs "are a serious bid to counter excess concentration and nudge new places onto the U.S. growth map."

"In short, these items — mostly unheralded in media coverage — represent a genuine recognition that innovation (and the nation's competitiveness) are increasingly intertwined with and dependent on social and spatial inclusion," Muro continued. "Without those, too much is left aside."

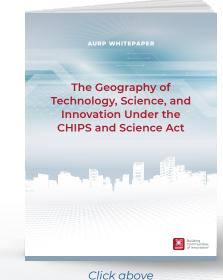
Under the CHIPS and Science Act and as directed by Congress, the DOC is authorized to create a minimum of 20 geographically distributed innovation hubs focused on tech transfer, job creation and expanding U.S. innovation capacity, authorized at \$10 billion over five years.

Projects funded through the program should reside in areas that are not already leading technology centers, with at least three new hubs located *"in each U.S. Economic Development Administration (EDA) regional division."* In addition, Congress has directed that at least one-third of eligible consortia *"significantly benefit small and rural communities"* including EPSCOR (Established Program to Stimulate Competitive Research) states and that one hub should be headquartered in a *"low-population EPSCOR state."* 

A state is eligible to participate in the EPSCOR program if their most recent five-year level of total NSF funding is equal to or less than 0.75% of the total NSF budget. The U.S. National Institutes of Health (NIH) has a similar program for bio research funding targeting states with low NIH funding levels.

Congress is also interested in involving Historically Black College and Universities (HBCUs) and Hispanic Serving Institutions (HSIs) in the development of these technology hubs. Accordingly, communities interested in competing for DOC technology hubs need to analyze which states are in their EDA region, work to connect with EPSCOR states and involve HBCUs, HSIs and other universities in their region.

As a result of the passage of the federal CHIPS legislation, AURP issued a report on the distribution of new tech hubs: *The Geography of Technology. Science and Innovation Under the CHIPS + Science Act* that explores the policy push Congress developed in building tech hubs outside of traditional innovation hot spots in the country.



Specific technology areas were called out in the CHIPS and Science Act related to critical and emerging technologies (CET).

The 2021 Interim National Security Strategic Guidance defines three national security objectives: 1) protect the security of the American people, 2) expand economic prosperity and opportunity, and 3) realize and defend democratic values. This list identifies CETs that the CHIPS and Science Act hopes to develop through implementation of technology hubs and related funding strategies.

#### **Critical and Emerging Technologies List**

The following critical and emerging technology areas are of particular importance to the national security of the United States:

- Advanced Computing
- Advanced Engineering Materials
- Advanced Gas Turbine Engine Technologies
- Advanced Manufacturing
- · Advanced and Networked Sensing and Signature Management
- Advanced Nuclear Energy Technologies
- Artificial Intelligence
- · Autonomous Systems and Robotics
- Biotechnologies
- Communications and Networking Technologies

- Directed Energy
- **Financial Technologies**
- Human-Machine Interfaces
- Hypersonics
- Networked Sensors and Sensing
- Quantum Information Technologies
- Renewable Energy Generation and Storage
- Semiconductors and Microelectronics
- Space Technologies and Systems



FAST TRACK ACTION SUBCOMMITTEE ON CRITICAL AND EMERGING TECHNOLOGIES of the NATIONAL SCIENCE AND TECHNOLOGY COUNCIL

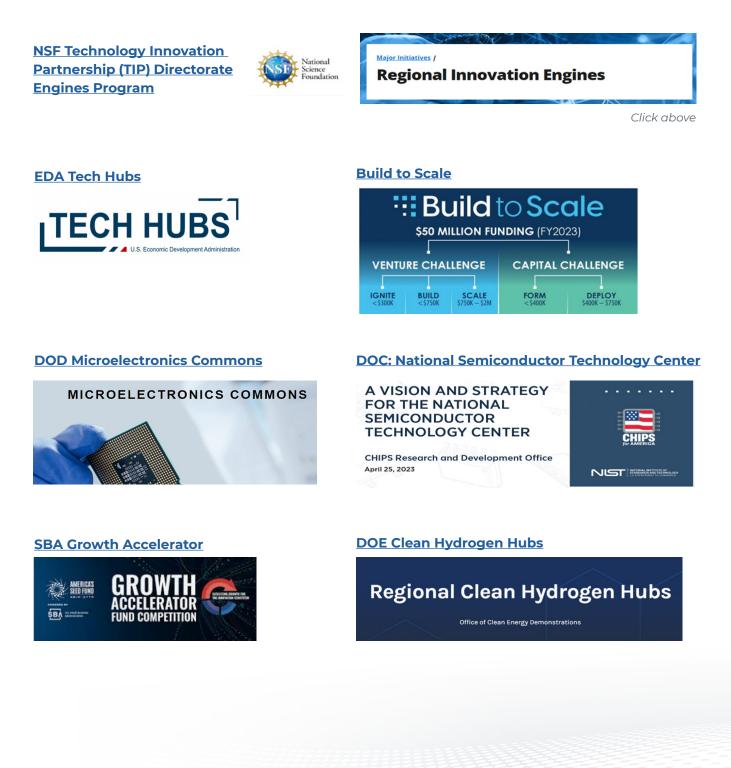
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#### **Current Federal Funding Opportunities**

Listed below are some major programs under the CHIPS and Science Act and related federal funding that will have an impact on research parks and innovation districts that are either active or have a phased approach to funding using current federal appropriations.



#### **Federal Appropriations Funding Shortfall:**

The amount of federal funding that has been and will be deployed in the next few months to support applied research and technology hubs and regions is unprecedented. For example, the funding for microelectronics research from DOD and DOC that likely will go mostly to universities is \$13 billion. Funding for several NSF Type 2 Tech Hubs, up to \$160 million each supported by NSF, will be announced by year-end 2023. EDA Tech Hubs and Build to Scale competitions are just opening. Research parks, innovation districts, tech incubators and accelerators are central elements in many of the funding proposals.

Funding for these programs in the out years is not so rosy. As Brookings Institution has analyzed, while the authorized amount for these programs is very high, actual funding in the form of appropriations is uncertain and will be made more difficult with the recently passed Debt Limitation Act.

#### Analysis by Brookings Metro of Federal **Appropriations Funding for Selected Programs Under the CHIPS and Science Act**

Program	What It Does	CHIPS and Science Authorizations	Appropriation So Far	FY 2024 OMB Budget	Percent of Authorization Funded To Date
EDA Regional Technology and Innovation Hubs	Planning grants to be awarded to create regional technology hubs focusing on technology development, job creation, and innovation capacity across the U.S.	\$10 billion over five years	\$500 million	\$48.5 million discretionary; \$4 billion mandatory	5%
EDA Recompete Pilot Program	Investments in communities with large prime age (25-54) employment gaps	\$1 billion over five years	\$200 million	\$200 million	20%
NSF Regional Innovation Engines	Up to 10 years of funding for each Engine (total ~\$160 million per) to build a regional ecosystem that conducts translatable use- inspired research and workforce development.	\$3.25 billion <sup>1</sup> over five years	\$200 milion	\$300 million	6%
NIST Manufacturing Extension Partnership	A network of centers in all 50 states and Puerto Rico to help small and medium-sized manufacturers compete.	\$575 million	\$188 million	\$277 million	68%
NIST Manufacturing USA	Program office for nationwide network of public-private manufacturing innovation institutes	\$201 million	\$51 million	\$98 million	53%
Totals (including FY23 authorizat	MEP and M-USA	\$15 billion	\$1.1 billion		8%

<sup>1</sup>The NSF Regional Innovation Engines is assumed to have received 50% of a \$6.5 billion CHIPS and Science Act provision that also authorized the Translation Accelerators program. Note: Dollars rounded to millions. Charges calculated from **Brookings** Metro В

unrounded figures

Source: Federation of American Scientists analysis of H.R. 4346 text

Analysis by Brookings Metro of Federal Appropriations Funding for Selected Programs Under the CHIPS and Science Act

# Conclusion



Around the globe, research parks and innovation districts have become ubiquitous centerpieces for universities, cities, federal labs, and regions to improve their economic performance and integrate technology and innovation into communities. In the United States, recent initial funding by the federal government through the CHIPS and Science Act plus earlier efforts demonstrate the interest of our national leaders in building on the record of research parks and innovation districts.

But the appropriated funding falls well short of needed funding across the research infrastructure. Federal non-defense discretionary funding — which includes scientific research — for the 2024 fiscal year will be limited under the Debt Limit agreement. The agreement also limits all discretionary spending to 1 percent growth in 2025, which is effectively a budget cut since that is likely to be slower than the rate of inflation. Additionally, parts of the NSF budget were in supplemental form, not base budget, so next year's budget will be tighter unless Congress explicitly supports a higher NSF budget.

Discretionary spending on education and research will likely see minimal or no growth for the next two years. The CHIPS and Science Act of 2022 authorized \$10 billion for Regional

#### CONCLUSION

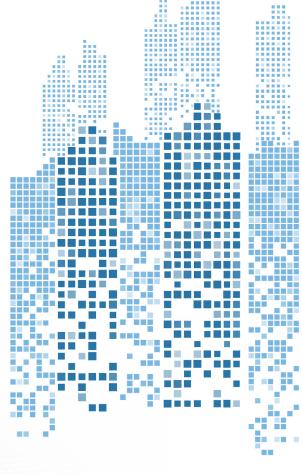
Technology and Innovation Hubs, but Congress appropriated only \$500 million for the first year of the program. Meeting the authorization level for the program and for the \$170 billion authorized for R&D will be difficult without some special budget accounting.

States, cities, and the private sector will need to promote funding from local sources, and supporters will need to redouble efforts to avoid the lesson of the American COMPETES Act of 2007. The shortfall between the federal authorized level in that Act and the funding that was eventually appropriated was \$77 billion according to American Association for Advancement of Science. The spigot is open for many projects in the calendar year 2023 and some of 2024 but will be shut off unless new support of the pathway for the CHIPS and Science Act is passed on a bipartisan basis.

To meet the pressing needs of U.S. technology competitiveness, it is also important that new funding for tech hubs from NSF, EDA, DOE, DOD and other sources include the option for funding of applied research and tech development facilities, such as was mentioned in the EDA Build Back Better Notice of Funding Opportunity, including long term leases built by the private sector for public private partnerships with sponsoring universities, hospitals, federal labs and communities. For new tech hubs to be built and organized quickly, alternatives to the long process for a university-owned research facility to be planned, constructed, and opened need to be adopted in favor of robust public-private partnerships in associated research parks, innovation districts, incubators, and communities.

For over 70 years, research parks and its progenies—incubators, innovation districts and accelerators—have served as critical aggregators of talent and technology in urban, suburban, and rural areas across the United States. Expanding their impact and reach is vital in developing a competitive technology and economic development strategy for the country.

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# Appendix

#### **Appendix 1:**

#### **AURP Participating Institutions 2022**

Accelerator Centre Accompany Advant-Edge Aggie Square - University of California, Davis Amarillo Economic **Development Corporation** Ancora Partners LLC ARCO Construction Co. Arizona State University Arrowhead Center, Inc. @ New Mexico State University Assurity Life Group Avison Young Ayers Saint Gross Ballinger BioLabs San Diego Biomedical Research and Innovation Park - University of Louisiana - Monroe BioOhio Black Warrior Capital Partners Blue Origin Boyd Watterson Asset Management Brailsford & Dunlavey Brandywine Realty Trust **Brock University Buffalo Niagara Medical Campus** Bwtech@UMBC Research and Technology Park Canada Foundation for Innovation CannonDesign Catalyst Capital Capital Growth MedVest

**CBRE** Canada Centennial Campus @ NC State Chernoff Thompson Architects City of Markham City of Tempe Clark & Enersen Clark Nexsen **Cleantech Commons** at Trent University Coldstream Research Campus Collaborative Real Estate Colliers Communitech **Cummings Research Park** Danis David Johnston Research + Technology Park **Discovery Partners Institute** DGA Planning | Architecture | Interiors **DIALOG** Design **DLR** Group **ENGIE North America Environmental Chemistry Enwave Energy** EYP, A Page Company Fero International Inc. Fraunhofer USA, Inc. Fusion Pharmaceuticals Inc. George Mason University Gowling WLG Green Project Technologies Greystar HBS, Inc. HDR Architects

HOK **HR&A** Advisors HudsonAlpha Institute for Biotechnology IA Capital Markets Illinois Institute of Technology Indiana Department of Workforce Development Indiana University Innovate Calgary Innovation Place Integral Group Intellimedia LP International Space Station National Laboratory JLL **JMell Communications** JobsOhio **KAUST** Innovation Kinetic Systems Inc. Knowledge Park **KPU** Communities Trust KU Innovation Park Lakehead University Lehigh University MaRS Discovery District MassVenture MCB Real Estate McCallumSather McMaster Children's Hospital McMaster Innovation Park Michigan State University Foundation Moffitt Cancer Center Momentum Labs

#### APPENDIX

Montgomery County, Maryland NASA Langley Research Center National Science Foundation NC State University Nebraska Innovation Campus NEOM Inc. Niagara Global Tourism Institute NIIMBL Nikon Instruments Inc. NJCSIT NORCAT North Carolina State University North Dakota State University NorthWest Healthcare Properties Oklahoma City Innovation District Oklahoma State University **Research Foundation** Partnership for Inclusive Innovation, Georgia Institute of Technology Perkins&Will Peterborough & the Kawarthas Economic Development Pharma Resource Group Inc. Phil Myrick LLC Plum Polytechnique Montreal Prince William County Economic Development Punjabi University Patiala Redwire **Research Facilities Design** Research Park at Florida Atlantic University Research Park at South Dakota State University **Research Triangle** Foundation of North Carolina Rowan University

SageGlass / Saint-Gobain Saint-Hyacinthe Technopole San Diego State University Saskatchewan Polytechnic Scientific Equipment & Future Association Sierra Space Shaw University Smartpark Research & Technology Park SMUD SSTI STAR Park, Texas State University Sterling Bay Stiletto: Make a Point Strang, Inc. Synapse Life Science Consortium Team NEO Tech Center Research Park Tech Parks Arizona **Technology Park TEConomy Partners LLC** Texas Tech University The Boyer Company The City of Calgary The Research Triangle Park The University Financing Foundation Inc. The University of Arkansas Collaborative The University of Texas at San Antonio Institute for Economic Development The University of Western Ontario Research & **Development Park** The Whiting-Turner **Contracting Company** TTP - Technology Transfer Platform **Tulane University** U3 Advisors **UBC** Properties Trust UC San Diego

UCPG UIDP, Inc. Universidad de La Frontera University City Partners University of Arizona University of Arkansas Technology Development Foundation University of Calgary **Properties Group** University of Delaware University of Guelph University of North Carolina at Chapel Hill University of South Alabama University of South Florida **Research Park** University of Toronto University of Utah University of Windsor University Research Park, University of Wisconsin-Madison **UNLV Research Foundation UNO Research & Technology** Foundation, Inc. Utah Tech University Varcity Ventas, Inc. Viridi Parente, Inc. Washington University in St. Louis Waymaker Group WE-SPARK Health Institute West Virginia Regional Technology Park Corporation Western Sarnia-Lambton **Research Park** WEXFORD Science + Technology Woodbury Corporation ZGF Architects LLP

UC Innovation Center



#### APPENDIX

#### **Appendix 2:**

#### **For Further Reading**

Gruber, Jonathan and Johnson, Simon, Jump Starting America, Public Affairs Press, 2019

Moretti, Enrico, New Geography of Jobs, Harper Collins, 2012

Case, Steve, **Rise of the Rest: How Entrepreneurs in Surprising Places are Building the New American Dream**, Simon and Schuster, 2022

Spirou, Costas, Anchoring Innovation Districts, Johns Hopkins University Press, 2021

Darmody, Brian, **Power of Place**, **Power of Place 2.0**, and **Creating Life Science Communities of Innovation in the U.S.**, Association of University Research Parks, 2008, 2021 and Journal of Commercial Biotechnology, March 2021, vol. 26, all available at <u>aurp.net/publications</u>



#### **APPENDIX**

### **CONNECT & CREATE at the AURP 2023 Programs**

### **Registration Open!**

### INNOVATION REVOLUTION The Power of People, Places & Purpose

STAR Campus holds a rich history and a bright future in the community of Newark, Delaware. Partnering with the University of Delaware

and Delaware Technology Park, STAR Campus includes 1M square feet of real estate and more than \$13 million in venture capital funding for UD start-ups. This vibrant community is driven by its mission to become an intellectual intersection and a commitment to advance knowledge in service to others. Experience this hub of talent and innovation for yourself this fall! **international.aurp.net** 



Hosted by STAR Campus









#### **12RP** | December 12 - 14 at Aggie Square, University of California, Davis, Health

Join us this fall to see all the community has to offer and what's to come at our next Insights into Research Parks. This 2 day program will deep dive into the past, present and future of Aggie Square at UC Davis Health and best practices you can bring back to your institutions.



#### March 3-7, 2024 at Tempe Mission Palms, Tempe, AZ

Mark your calendar for next year's master class program! **springtraining.aurp.net** 



#### Communities of Innovation 101 On-Demand, Digital Series

Over 10 education modules plus additional case studies to advance your knowledge.



#### AURP Clean Tech and Building Resiliency Caucus

Linking clean tech firms and developers who are building energyefficient facilities and communities of energy innovation. *Learn more*.



#### Regional Partnership Development Program

Member-nominated scholarships for HBCU/MSI/HCI institutions to building diverse and inclusive communities of innovation.

#### WATCH FOR MORE INFORMATION ON THESE NEW AURP PROGRAMS!

The History of Research Parks and Their Evolution into Innovation Districts



#### **AURP MISSION**

### Fostering innovation, commercialization and economic growth in a global economy through university, industry and government partnerships.

Since 1986, AURP has been the pioneer guiding leaders to cultivate communities of innovation at global anchor institutions such as universities, municipalities, federal labs, and corporations. AURP is a non-profit organization that promotes the development and operations of research parks that foster innovation, commercialization and economic competitiveness in a global economy through collaboration among universities, industry and government.

#### www.AURP.net

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