



5015 PINE CREEK DRIVE
WESTERVILLE, OH 43081
614 . 901 . 1690
SSi.ORG

TOM RIDGE
CHAIRMAN, BOARD OF TRUSTEES

March 16, 2023

Eric Smith
Director, Office of Innovation and Entrepreneurship
U.S. Economic Development Administration

Re: Implementation of the Regional Technology and Innovation Hub Program

Dear Eric Smith:

I am pleased to submit the following comments in response to the U.S. Economic Development Administration's (EDA) request for information (RFI) on implementing the Regional Technology and Innovation Hub program ("Tech Hubs").

SSTi strengthens initiatives to create a better future through science, technology, innovation, and entrepreneurship. Since its inception in 1996, we have worked to share lessons learned from a nationwide network of practitioners and policymakers. SSTi conducts research on common performance standards, identifies best practices, analyzes trends in and policies affecting the innovation economy, and fosters greater connection and cooperation among and between all public, private and nonprofit organizations encouraging prosperity.

The Tech Hubs program has the potential to dramatically strengthen America's global competitiveness in critical technology sectors. The statute's vision of large-scale investments that can rapidly advance regional innovation economies from participants to leaders not only presents an exciting opportunity, but is also necessary in the face of America's social, health, climate, and economic challenges.

Implementation, however, will be crucial to success. Given the scope of the authorization and the duration over which real impact must be measured, EDA's design and administration must encourage bold but realistic planning, make significant investments to ensure the impacts are of scale, and operate with procedures that are both clear and flexible. Incorporating feedback from the TBED field and other stakeholders throughout the process will increase EDA's and the program's chances of success.

To this end, SSTI's comments are informed by a broad perspective of previous federal and state initiatives intended to strengthen regional innovation economies, as well as feedback from prior awardees and applicants for economic development programs from EDA and other agencies.

Advancing regional economies through TBED

Competing in a global economy, regions must have an economic base composed of firms that constantly innovate and maximize the use of technology in the workplace. TBED is the approach used to help create a climate where this innovation economy can thrive. The ecosystems of successful innovation economies are driven by policies that work collectively to: support a research base that generates new knowledge; facilitate the transfer of that knowledge to the marketplace; foster a culture that encourages entrepreneurship, including sources of risk capital; and, develop a technically skilled workforce.

The Tech Hubs program represents a unique opportunity to create a systems-wide impact on regional innovation economies by bringing together individual elements (e.g., research base, workforce, industry, financing) into a cohesive initiative.

Looking to the history of America's successful regional innovation economies quickly clarifies that long-term, significant investment is critical to success. Silicon Valley and Route 128, the two regions that have inspired countries and regions across the globe to emulate, benefitted from decades of federal research and development (R&D) funding, which was concentrated in universities and federal laboratories, as well as industry-conducted R&D.¹ The example of Silicon Valley, Route 128 and Research Triangle Park emphasize how long it took from initial investment to the development of economic powerhouses. This long-term investment and return on the investment should underscore every aspect of the Tech Hubs program—from the amount of time to develop comprehensive proposals to the expectation of results. Even investments on the scale of the Tech Hubs program will not create overnight success in regions even those regions that are most prepared with existing assets, partners and strategies working toward a robust innovation economy.

Many regions throughout the country have been working for decades to leverage municipal, state, federal, nonprofit and industry resources toward global leadership.² The Tech Hubs program will serve as an accelerant from this prior work and help them build world-leading key technology sectors. Two examples of partnerships and recent business successes are:

- *St. Louis, Missouri.* BioSTL leads the region's efforts to support and expand its biosciences cluster, supported by a network of local entities (e.g., Cortex innovation district, Donald

¹ For a detailed discussion, see: Saxenian, A. (1996). *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Harvard University Press.

² For more information on examples in areas as varying as western Pennsylvania, Oklahoma, Milwaukee and northeast Ohio, contact SSTI or see the [testimony of Dan Berglund](#) in: Building Regional Innovation Economies: Hearing before the U.S. House Committee on Science, Space & Technology's Subcommittee on Research and Technology, 117th Cong. (2021).

Danforth Plant Science Center, BioGenerator and STEMSTL) and complementary state investments through the Missouri Technology Corp. The impact of this multi-faceted approach can be seen in the success of Benson Hill, a spin out of the Danforth Plant Science Center, that uses artificial intelligence, big data and breeding techniques to create more nutritious and sustainable food. The company tapped into the infrastructure, talent and capital in the St. Louis area, and Missouri Technology Corp invested \$175,000 in an initial seed round in Benson Hill, providing early capital to help grow the company. In less than 10 years, Benson Hill completed a business combination with Star Peak Corp II that valued the new firm at \$1.35 billion.

- *Georgia.* The Georgia Research Alliance is a state-funded nonprofit that recruits eminent scholars to the state’s research universities and facilitates capital access for companies leveraging university-related intellectual property (IP). These efforts have returned more than \$5 billion in competitive research grants and \$1.6 billion in private investment into the state’s innovation economy. One of the Georgia Research Alliance’s approximately 200 portfolio companies is diabetes medical tracking and communications company Diasyst, which grew out of work at the Georgia Institute of Technology, Emory University and the Atlanta Veterans Administration medical center.

The history of TBED strategies and investments indicates that the Tech Hubs program can be successful, with effective implementation and long-term committed funding.

Use of FY 2023 funds

As noted in the RFI, Congress provided EDA with \$500 million in FY 2023 for the Tech Hubs program. SSTI’s recommendation is that EDA fund the strategy development grants at its authorized level of \$50 million and \$450 million for implementation awards.

Strategy development

As we have indicated, some regions are prepared to move quickly and Tech Hub funding will serve as an accelerant for those regions. For far more regions, there is much more work that needs to be done to build a team of trusting partners who can work together to develop a strategy and plan for how they move from excellence to global leadership.

The Tech Hubs program is breaking new ground for the federal government—investing in a systems approach rather than individual elements. Dating back to the end of World War II, initially under Vannevar Bush’s vision and then Congress’ authorization of individual programs, the federal government’s approach has been to invest in individual elements that are required for a technology hub. For example, the Economic Development Administration has invested successfully for decades in projects that among other things encourage entrepreneurship (e.g., incubators), capital (e.g., revolving loan funds), and physical infrastructure (e.g. water and sewer lines). Meanwhile, the U.S. Department of Labor has supported workforce development programs to train people, and the

National Science Foundation (NSF) and National Institutes of Health (NIH) have helped build world-class research.

There is an analogy with the interstate highway system. The federal government provided backbone funding to build an amazing asset, but one that it is now acknowledged as having torn neighborhoods apart. As a result, the infrastructure bill is now funding projects to repair the damage that was caused in that division.

The federal government has never provided significant funding to tie all of a region's economic elements together. Previous attempts (e.g., the Jobs and Innovation Accelerator Challenge) have been well-intentioned and sounded promising, but were underfunded and quickly ran straight into the reality of program and agency authorization that prevented the kind of collaboration they were intended to encourage. In fact, some of those attempts at multi-agency collaboration/silo-busting approaches exacerbated tensions in communities as the promises from D.C. to cut through red-tape and approach economies as a system failed to be realized.

SSTI worked closely with both the House and the Senate in the legislative language for the Tech Hubs program and wants to ensure the success of the program, not only because it is vital for the competitiveness of the U.S., but also because if the design and execution of the competition and the program itself are flawed, it will set back efforts on the federal level potentially decades and reverberate at the state and local level.

To be successful, EDA should pay close attention to the lessons learned in other countries and what has already worked in this country.

In the U.S., attempts that have been successful in addressing economic competitiveness by bringing all of the elements together in a comprehensive way have occurred at the grassroots with state, private sector, foundation, university and other non-profits serving as catalysts for action. We have seen this with the Flinn Foundation in Arizona encouraging the biosciences sector, rival companies coming together to serve as the genesis of The Water Council in Milwaukee, the leadership of the university and non-profit institutions in San Diego, and Pennsylvania funding the four regional Ben Franklin Technology Centers in the early 1980s.

This approach requires years not only for significant results, but also for the development and refinement of the partnerships that make up these collaborations. Experience from Ohio's Edison Technology Centers is instructive. In 1984, the state of Ohio funded six industry-university cooperative research and technology centers; each center received \$11 million (2022 equivalent) and additional funding every two years after for at least a decade. Modeled in some aspects after Germany's Fraunhofer Centers, the state required that industry set the direction for the center and make up a majority of the board with higher education participating and the state being a largely silent funder. The center with the most established relationships at the time of its initial funding, EWI, continues to this day with an approximate budget of \$30 million and 160 employees. Other centers

whose partners did not have a history of working together drifted apart or significantly downsized their vision and activities.

Stephen Covey is credited with coining the phrase, “the speed of trust.” To truly meet the vision outlined in the legislation, Tech Hubs must bring together industry, education (from daycare to research institutions), venture development organizations, workforce development, government and non-profit organizations, and they must ensure that all people and regions benefit. It is the very rare exception where those kind of partnerships and relationships exist. They need to exist, but they are going to take time to develop and to build trust among all of the partners.

We understand that there is, as Dr. King said “the fierce urgency of now,” but where we are right now as a country has been decades in the making—large swaths of our manufacturing capacity moving to countries with cheaper laborer resulting in economically devastated neighborhoods, towns and cities; China accelerating its R&D capacity; growing income inequality in this country with the middle class hollowed out; and, whole regions of the country and people being left behind. We understand that there will be great pressure to make awards as fast as possible. We encourage EDA to:

- take the time to put together a competition process that is clear in what it is seeking,
- issue a proposed draft of the competition, not only so communities can gain a better understanding of what EDA is looking for, but also so EDA can hear questions that will help it better shape a final funding notification (3 months listening tour),
- train all of its staff in the details of the program,
- allow communities the time to bring partners together not in a mad pursuit of the next bucket of money but in a thoughtful, strategic fashion that will have the potential of creating relationships even if they do not receive federal funding (9 months), and
- place heavy emphasis on the Strategy Development Grants to allow communities to develop the best possible proposals.

We encourage EDA to make Strategy Development Grants in the size of \$500,000-\$1,500,000 with awards lasting up to two years. The exact funding levels should be scaled toward regional needs. Funded strategy development activities will, of course, build toward a potential Tech Hubs implementation award, but will also result in a clear vision on how to strengthen a region’s innovation economy and allow regions to develop a plan to pursue other funding sources.

As appropriations allow, EDA should plan on making the development awards across more than one competition. This will allow regional consortia that unsuccessfully pursue a Tech Hubs designation, implementation award, or other funding strategies to compete for development assistance.

Strategy implementation

With the remaining \$450 million, EDA should consider funding five to eight regional consortia with initial implementation awards ranging from \$50 - \$100 million. Making five to eight awards provides

opportunity to invest in a better variety of technologies and strategies than could be achieved by making just three awards at the statute's initial period of performance maximum of \$150 million.

We had hoped that Congress would fund the program at its full authorization level of \$10 billion. Since Congress did not do that, we encourage EDA to be judicious in how the funds are used. Every region is unique, so while it would not be wise to make a proscriptive ban on specific uses, EDA should strongly discourage program funds being used for building construction and renovations. While not true for all regions, in our experience, funding for buildings is more easily secured than many of the other functions the Tech Hub will be taking on. State capital funds and donors eager for naming rights on a prestigious building would be potential funding sources; again, some areas may not have these avenues available to them, so some flexibility should be provided.

As discussed above, a key to the success of the Tech Hubs will be bringing all of the parties together to work cooperatively, or as Karen Mills, the former SBA Administrator, called it "the glue." She observed correctly "no one likes to fund the glue."

It is important, then, that EDA give high priority to ensuring the "glue" is funded and that other aspects that are not readily fundable by other sources in that region be funded first with the Tech Hubs appropriations.

We encourage EDA to be explicit that it will provide additional funding to those that receive Strategy Implementation Grants as appropriations permit. Too often, the federal government provides one-time funding for projects and then walks away as if the project will magically become self-sustaining; the path to self-sustainability for this kind of project is an uncertain one. Based on state experience, it will be longer than a one-time grant.

Should Congress provide additional appropriations in future years, the approach we have outlined would enable EDA to fund new, initial implementation awards and provide subsequent awards to successful awardees from the FY 2023 appropriation.

The consortia

The Tech Hubs statute defines the consortia as the entity that will receive the designation and awards under the program. In practice, there are many ways EDA could implement this language into an actual proposal and funding process. While different regions will find different governance methods preferable, the agency should strive to encourage structures that facilitate shared responsibility for the Tech Hubs' success. Shared responsibility should be easier to achieve when a consortium receives a single award, rather than providing each partner or project its own funding agreement.

EDA can provide leeway in how the consortium partners work together to propose and oversee the Tech Hub. Viable options could include creating a new entity with board members representing each

partner, designating one organization as the lead to oversee the process, or creating an agreement around mutual participation. As part of the Implementation Grants, EDA should require that the governance of the consortium and, if applicable, memoranda of understanding among the partners be spelled out in the application. Developing this should be a requirement for those receiving Strategy Development grants.

EDA should include coalition governance as an evaluation criterion in the designation and implementation award process. This is not to say that EDA should dictate the exact structure a consortium must use to achieve the maximum score. In making its assessment, the agency should ensure that group decision-making processes are defined, that problematic behavior by one entity can be identified and addressed by others, and that one or more entities have defined roles for strategy and evaluation.

Further, EDA should ensure that the leadership of each consortium receiving implementation awards is responsible to EDA for region-wide reporting and outcomes. If awards are made only to individual projects, the agency may find itself without an enforceable agreement with the regional consortium as a whole.

Importance of existing research assets to designation

Given the program's objectives around key technologies, Tech Hubs designation should have a baseline requirement that a significant research and development (R&D) asset is:

- a) located in the region,
- b) represented in the applying consortia, and
- c) has a strength in the technology area that is the focus of the Tech Hubs proposal.

If any of these elements are missing from the Tech Hubs proposal, then the consortium is unlikely to succeed in achieving the legislation's intent. Research assets help create intellectual property (IP) and other innovations, both directly and through spillover effects, that are critical to the growth of a technology industry cluster. The duration and scale of the Tech Hubs awards are insufficient to both create the R&D anchor and a related industry cluster, and so the research asset must be in place prior to designation.

Diversity, equity and inclusion should be embedded throughout the program

The authorizing statute makes clear the program is "to support regional economic development and resilience, including in small cities and rural areas," "to promote the benefits of technology development and innovation for all Americans, including underserved communities and vulnerable communities," and "to support domestic job creation and broad-based economic growth." Consortium members may include "organizations that contribute to increasing the participation of underserved populations in science, technology, innovation, and entrepreneurship" and those

“organizations that promote local economic stability, high-wage domestic jobs, and broad-based economic opportunities.” From this language, we believe that Congress was clear in its intent in making sure the program both involves and benefits all regions and peoples. The funding notice should include language spelling out that diversity, equity and inclusion should be embedded in all activities of the consortium.

Implementation award use of funds

Providing capital to businesses

The statute allows implementation awards to be used for “activities to **provide** or ensure access to capital for new businesses and business expansion” (emphasis added).³

This language permits EDA to make awards to Tech Hubs that will capitalize loan or investment funds that provide capital to companies. As access to risk capital is crucial for entrepreneurs and innovators, EDA should use this authority in designing the Tech Hubs program.

Reasonable restrictions on this authority include: limiting the share of an implementation award that can be put toward fund capitalization; finance activities are responding to an identified need and relate to the Tech Hubs’ goals; requiring that the organization has appropriate financial and conflict of interest controls; and, financial staff have relevant experience with the financial tool.

EDA has experience in managing such requirements through its Revolving Loan Fund program but will likely need to develop new regulations specific to funds used for equity investments.

Flexibility around federal share

Congress has provided EDA with unique flexibility in how the agency may interpret the non-federal share. The wording of the strategy implementation award match is that the federal share shall not exceed a percentage of “the total operating costs of the technology and innovation hub.”⁴ This wording is different from many match requirements, which make the applicant’s commitment part of the same federal project and often subject to many of the same requirements.

EDA can leverage this flexibility to support better proposals in two ways. First, the agency should consider federal share across the entire Tech Hub, not just on proposed activity areas. This has been standard practice among state programs. This will be helpful for consortia, as some activities will have an easier time finding matching resources than others but all will contribute important elements to the consortia’s goals. As we observed earlier, operations and governance, for example, are more difficult to fund locally than construction or education. Second, the agency can consider relevant, complementary expenses that are not proposed for any federal funding as part of the local

³ 15 USC 3722a(f)(C)(iv).

⁴ 15 USC 3722a(f)(5).

share. Examples could include an annual technology conference or pitch event that may be easier for the consortia to fund and scale without taking on federal requirements about meeting expenses.

Application process

Designation of regional technology and innovation hubs

We believe the authorizing language requires recipients of Strategy Implementation Grants to have been designated as a regional technology and innovation hubs. Recipients of Strategy Development Grants do not need to have been designated as a regional technology and innovation hub. The language says “the Secretary shall use a competitive, merit-review process to designate eligible consortia as regional technology and innovation hubs,” but it does not spell out the timeframe of when the process needs to occur (other than a consortium must be designated to receive implementation funding). Significantly, earlier drafts of the bill contained specific language on when the Secretary had to make the designation; in the final bill, Congress chose to remove that language, thus, leaving the timing to the discretion of the Secretary.

We strongly encourage EDA to make the designation process simultaneous with and part of the application for the Strategy Implementation Grant.

We believe that the process for consortia to apply for designation should be meaningful and rigorous; however, that means it will also be time consuming and expensive for the applicant. We see no reason for applicants to go through a difficult application process to receive designation but not receive any funding or tangible benefit from the designation. Congress could have included provisions in the legislation providing special benefits to those that achieved the designation (e.g., priority funding in other programs), but it did not do so. It intended to tie the designation solely to funding of the implementation grants. Congress authorized the implementation grants at \$9.95B and mentioned 20 designations through a process—a process whose timeframe is not defined. It is reasonable to assume that Congress removed the earlier discussed timeframe because it was not sure how much the program would receive in appropriations: why force designation in a certain time period if there is no money to go with the designation?

Congress also does not indicate that the process for designation or awarding of funds was a one-time event. Given the rapidly changing technological and economic environment, it is logical to assume the Secretary has the authority to run a competitive process as the Secretary sees fit.

Therefore, we believe regions should apply for the designation and the implementation awards as part of the same application process both simplifying the application process and the value of the designation.

Budget revisions during application process

EDA should be explicit in its Implementation Grants application on the size of the awards or a narrow range of funding (e.g., \$75-100 million) and should not ask implementation applicants for significant

budget reductions after their proposals have been submitted. Given the nature of establishing trust among consortium members, it would be potentially damaging to relationships among the consortium members for EDA to ask the consortium to substantially cut its proposal after all parties in the consortium had previously agreed to specific funding levels.

In the event that EDA does need to ask for significant cuts to an applicant's budget, then the agency should do so alongside feedback about elements of the consortia's proposal that are viewed as too large to the region's capacity or need, too early in the region's development, or otherwise less competitive. Such information will not only help the applicants advance their regional strategy — which may be useful regardless of success in winning the implementation award — but will also help the region manage the stakeholder relationships.

Flexibility in implementation awards

Tech Hubs implementation awards will see funds spent over a period of years that could see meaningful changes to the relevant technology area or to other aspects of the regional economy. So long as participating consortia are making progress and using funds appropriately, EDA should be open even to substantial shifts in the use of funds.

For example, a Tech Hub may have proposed funding an accelerator program beginning in year three but, upon having a private accelerator open in the region at the end of year one, the consortium comes to believe that coaching existing companies on technology deployment is a more pressing regional need in year three. While this is a substantial shift in programming, and perhaps even in which partner receives funding, the change may be in the best interest of the regional economy.

A formal process requiring the consortia to articulate the new strategy and budget for approval would allow EDA to facilitate flexibility while ensuring that consortia remain focused and strategic.

Complementary assistance

While financial assistance is the most important resource EDA can provide to Tech Hubs through this program, there are other assets and efforts that could advance the regions. These include:

- Supporting public relations and communications efforts, such as coordinating (or funding) earned and social media toolkits, facilitating exposure in earned media, and deliberately hosting press or community events to feature Tech Hubs;
- Integrating the Tech Hubs into plans for international travel and other initiatives focused on facilitating research, trade, or other investment in relevant technology areas; and,
- Assistance with agencies overseeing relevant technology areas, such as energy or transportation, to facilitate demonstration projects for innovations, complementary research, business or project funding, and the implementation of appropriate regulations.

Tech Hubs evaluations

The authorizing legislation indicates that the Secretary shall carry out a program to “conduct ongoing research, evaluation, analysis, and dissemination of best practices for regional development and competitiveness in technology and innovation.” To determine the success of the program and share lessons learned, EDA must use this authority to conduct a robust evaluation of the program that is embedded in the program from the application on to its implementation.

Measuring what matters

As much as possible, EDA should encourage its grantees and evaluators to incorporate measures of the social, health and climate impacts of the Tech Hubs, as well as market impacts. The metrics will depend on the technology area, of course, but could include energy consumption savings, introduction of new therapeutics, or decreases in share of income going toward housing.

Among the economic measures to be considered, one that speaks most directly to the program’s goal would be the increased share of the global market in relevant tech sectors attributable to companies based in America.

Due to the nature of tech and startup development, some of the most important impacts may not be observable until well into the operations of the Tech Hubs. Intermediary measures could include increased spending on regional R&D (by businesses as well as total), technology transfer activity (licenses, revenue), new business formation, hiring, wages paid, and sales. However, as much as possible, EDA’s plans and requirements around Tech Hubs evaluations should strive to capture the more important, long-term outcomes of these investments.

Self-evaluation and reporting

The Tech Hubs program is a new initiative for EDA that seems likely to have a different scale, structure and goals from most of the agency’s other programs. With this in mind, it seems likely that EDA would want to encourage grantees to provide metrics, reports and evaluations different from those provided by other EDA awardees.

The agency should strive to identify these requirements and processes — which may include participation in evaluations conducted by third parties — in advance of publishing the notice of funding opportunity for the implementation awards. This timing will allow consortia to plan for these requirements in their staffing and budget plans.

Rigorous, external evaluation

EDA should not rely on self-reported metrics and reports as the sole measure of the Tech Hubs program and should instead plan to hire a third-party evaluator. This evaluator should conduct its work well beyond the end of each wave of implementation awards (at least an additional five years) to ensure that more of the long-term impacts of technology investment are captured in this

assessment. Ideally, this evaluation will incorporate both real economic data (e.g., actual wages paid to employees in the target technology sectors) and participant surveys (such as the Manufacturing Extension Partnership surveys conducted by the National Institute of Standards and Technology's evaluator⁵), and compare Tech Hub performance against the performance of similar-tech companies in other regions (see, for example, the Small Business Administration's evaluation of its Regional Innovation Clusters program⁶).

Beyond assessing the Tech Hubs program as a whole, EDA's evaluation process also should attempt to understand the effectiveness of different strategies in the various regions and technology areas. This effort should aim at improving the practice of TBED for both future iterations of the Tech Hubs program and in the context of other private, regional, state and federal investments. Such an evaluation will not only include a deeper dive into the data discussed above, but also a qualitative understanding of each region's and technology cluster's context and how various investments did (or did not) contribute to the overall outcomes.

We appreciate EDA's interest in receiving community input about the implementation of this program and would be happy to provide additional information about any of these comments. We are excited to work with EDA to help more regions of the country become globally-competitive tech hubs.

Sincerely,

A handwritten signature in black ink that reads "Dan Berglund". The signature is fluid and cursive, with the first letters of "Dan" and "Berglund" being capitalized and prominent.

Dan Berglund
President & CEO

⁵ Robey, Jim, Kathleen Bolter, Natalie Patten, and Edison Rolle. 2021. "The National-Level Economic Impact of the Manufacturing Extension Partnership (MEP): Estimates for Fiscal Year 2020." National Institute of Standards and Technology. <https://research.upjohn.org/reports/254>.

⁶ Optimal Solutions Group, LLC. (2014). *The Evaluation of the U.S. Small Business Administration's Regional Innovation Cluster Initiative: Year Three Report*. SBA. https://www.sba.gov/sites/default/files/2020-11/Evaluation_of_the_SBA_Regional_Cluster_Initiative_Year_3_Report_2014_11.pdf.