

Indiana STEM Ecosystem - STEMx/Battelle Grant Report

June 2020

Who We Are

The Indiana STEM Ecosystem is a collaborative and diverse group of over 450 statewide members who believe in the importance of building the STEM education pipeline across sectors within the state of Indiana. Our mission is to develop, support, and “stand up” regional STEM ecosystems across the state. We believe that through the “standing up” of regional STEM Ecosystems across Indiana, we will improve STEM literacy, ensure a strong workforce & global competitiveness for all Hoosiers, and support diversity, equity & inclusion in a thriving STEM workforce.

Our History

The initial work of the Indiana STEM Ecosystem, originated through a partnership in 2006 between Lilly, Purdue, and the Indiana Department of Education, and was called the I-STEM Resource Network. This team began the important work of bringing attention to Indiana legislators regarding the need for more rigorous professional development for educators within the STEM field. Over the next four years, this team focused on providing high quality math professional development across the state for teachers. In 2010, the work of the I-STEM Resource Network expanded to include the Indiana Science Initiative which focused on ensuring all K-8 Indiana students received regular, high quality science education. In 2012, this group of STEM supporters in Indiana continued to grow and was named the Indiana STEM Action Coalition. Although the work continued within the mathematics and science areas, the main focus of the group began to be to drive the request for state funding specifically allocated to STEM within the K-12 space. Between 2013-2014, through support of the Indiana STEM Action Coalition, the Indiana Department of Education developed an initial STEM education plan for K-12. Various new partners, including the Indiana Afterschool Network, joined the ongoing efforts and supported ongoing asks to the legislature for state funding for STEM. In 2015, HB 1222 passed the Indiana Education Committee in support of providing funding for STEM education, but was struck from the final budget. Over the next two years, the support for STEM funding across the state continued to grow. Business and industry continued to provide a loud voice for this request as well as private funds as possible, in order to keep this important work moving for Indiana. During this time, the group was renamed the Indiana STEM Education Taskforce (now known as the Indiana STEM Ecosystem) and had a statewide presence of over 400 supporters engaged in the work. Through the continuous support of these diverse partners, in 2017, our voices were finally heard and the State of Indiana allocated \$2 million to the Indiana Department of Education in support of STEM efforts. The legislative language outlined various other governmental agencies from workforce development, K-12, and post secondary education to collaborate in the development of a comprehensive STEM plan for the entire state. With these funds, the Indiana Department of Education convened a diverse set of statewide stakeholders,

known as the Indiana STEM Council, and over an 18 month period developed the Indiana STEM 6 year Strategic Plan. This plan, released in November of 2018, outlined an aggressive plan to lay the foundation for a future where all Indiana students (K-12) will graduate with critical thinking skills and be prepared for an innovation-driven economy by accessing quality, world class STEM education every day and that all Indiana teachers will be adequately prepared to provide every student with an evidence-based, effective STEM education by 2025.

Understanding that achieving this vision would require a strong commitment to coordinating and reorienting resources across the state, the Indiana Department of Education with support from the Indiana STEM Education Taskforce (aka: Indiana STEM Ecosystem) made a request for \$20 million in STEM funding to be allocated within their overall education budget during the 2019 biennium session, which represents a 90% increase from the last budget cycle. Although the full ask of \$20 million for STEM was not funded by the legislature, the state did increase the allocation to a total of \$6 million with an additional \$6 million allocated specifically for computer science efforts in Indiana. This increase of \$10 million from the previous budget indicates Indiana's focused legislative priority as well as the efforts of the Indiana STEM Ecosystem and partners to improve STEM education for all Indiana students.

The STEMx/Battelle Award and Plan

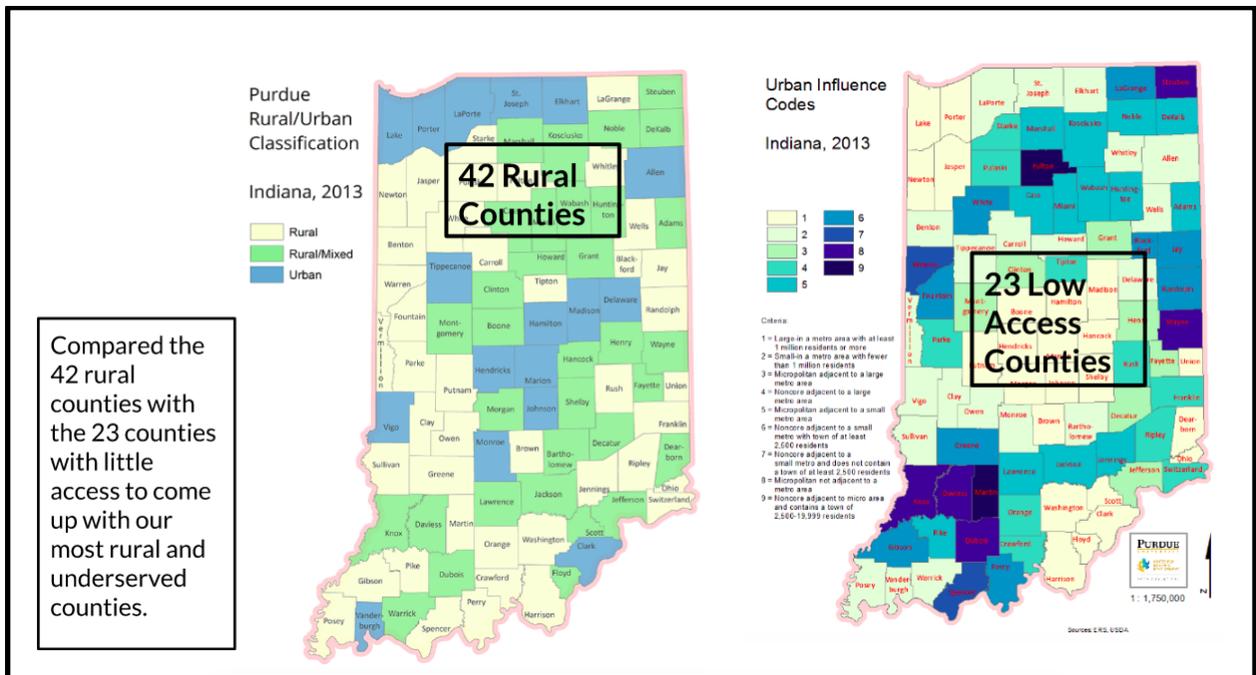
In 2019, the Indiana STEM Ecosystem received a \$15,000 grant from STEMx/Battelle to focus on rural STEM education initiatives in Indiana. With these funds, Indiana was able to convene stakeholders to discuss the unique needs of our rural areas while identifying next steps for engaging rural areas and developing regional and/or local STEM ecosystems to drive the work. Also during this convening, we were able to discuss the needs we have as a larger support organization in order to continue this unfunded work for our state. This generous STEMx/Battelle grant not only funded a single convening, but also has funded ongoing development and support of the tools and resources that were identified within the convening.

The Convening

In November 2019, the Indiana STEM Ecosystem hosted a convening of various stakeholders including 87 members from the Indiana STEM Ecosystem as well as other educators, leaders, business partners and policy makers to discuss the uniquely rural challenges faced in Indiana while formulating a plan to engage, develop, and support rural STEM ecosystems across the state. During this convening, we focused on the following tasks:

1. Identifying target Indiana rural counties in which to provide support
2. Discussing the unique needs of the rural areas of the state and holistic needs of the larger Indiana Ecosystem

In order to select rural areas of the state in which to focus our efforts, we utilized the Rural/Urban Indiana classification system as well as the urban influence codes.



Through discussion groups and feedback from convening participants, the following counties were identified for future rural efforts:

- Blackford County
- Crawford County
- Fountain County
- Franklin County
- Fulton County
- Gibson County
- Greene County
- Jay County
- Jennings County
- LaGrange County
- Martin County
- Orange County
- Parke County
- Perry County
- Pike County
- Pulaski County
- Randolph County
- Ripley County
- Rush County
- Spencer County
- Starke County
- Switzerland County
- Tipton County
- Warren County

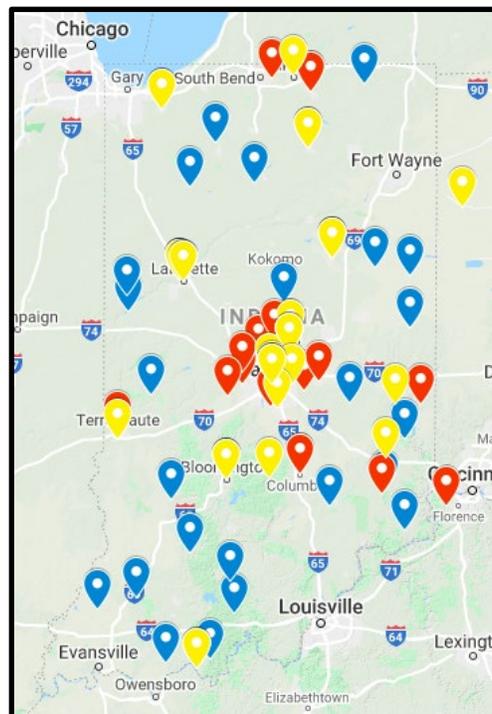


After much discussion around the data used to select the 24 counties outlined above, additional round table discussions were held to gain insight into STEM related work already being done in the identified counties. This discussion was then followed by a larger group analysis of the STEM needs and assets of these rural counties. A few of the rural counties identified, specifically in the South Western corner of the state, already had robust STEM

initiatives being carried out by a team of various stakeholders. Although still able to take advantage of the outcomes of this project, these counties would be offered to serve as exemplars and mentors to the other rural counties.

The participants then completed a digital mapping activity in order to assess where these STEM experts and supporters worked, lived, and played. This exercise assisted in identifying expertise in the room that could be leveraged across the state for this and future projects of the Indiana STEM Ecosystem. Additionally, this information will be used to connect existing participants and members to potential future Ecosystem members in an effort to support the growth and development of local and/or regional STEM Ecosystems in Indiana.

Breakout sessions were then held for smaller group discussions around the following topics: Leveraging our Ecosystem Expertise; Ecosystem Services & Commitments. Participants shared the concern that counties interested in focusing efforts on STEM and developing a robust local STEM Ecosystem may not know where to start this journey, nor have the capacity to support these efforts. Participants shared the desire for an Indiana specific digital tool to be developed in order to determine where a potential STEM Ecosystem may fall on a spectrum of STEM success and opportunity. Discussions were held regarding the development of an Indiana STEM gap analysis tool that would take into consideration Indiana specific legislation, state strategic STEM & Computer Science plans, and other Hoosier specific elements such as STEM certification and the robust Indiana Afterschool Network STEM standards. Additionally, robust discussion was held around the idea of mapping our Indiana STEM assets and the value this could bring to all stakeholders across the state. The combination of these tools would allow for the Indiana Ecosystem to meet developing Indiana regional/local ecosystems where they are and provide direct support while connecting them to existing opportunities across the state.



Project Takeaways & Next Steps

This STEMx/Battelle funded project allowed for pertinent discussions around equity and access to be held which provided an incubation of ideas for future growth of STEM opportunities in Indiana. Delivery points developed throughout this project identified by the participants of the convening included:

- An Indiana specific STEM needs assessment/gap analysis tool

- A digital asset mapping tool
- The development of a digital Indiana STEM “hub”
- Support and resources for developing local/regional STEM Ecosystems

Ongoing Indiana STEM Ecosystem support will be necessary in order for local/regional teams interested in standing up their own ecosystem to be successful, particularly within the identified rural counties. State STEM funding is directed to state agencies, therefore the Indiana STEM Ecosystem will need to continue to apply for private grants and seek private funders in order to continue to support this work. Next steps within this work also include future scaling for impact, as well as piloting and large scale roll out of the needs assessment/gap analysis and digital mapping tool. Additionally, these tools will be shared at two fall 2020 convenings in partnership with the Indiana Afterschool Network’s Million Girls Moonshot project which seeks to inspire and prepare the next generation of innovators. At these additional convenings, teams will receive professional development in project-based learning and have opportunities to learn about and complete the Indiana STEM Ecosystem needs assessment and mapping activities. We are hopeful that these ongoing opportunities will allow for even the most rural areas of Indiana to identify challenges and solutions while working to fully develop a local/regional STEM ecosystem and action plan for next steps in order to continue to move the work forward for Indiana.

Resources

<https://sites.google.com/view/instemeco/home>

www.MillionGirlsMoonshot.org

<https://drive.google.com/drive/u/1/folders/13EPOPqJ0nUAG9foE5kIW3FTFgyOo-7Kd>

<https://www.doe.in.gov/wf-stem/indiana-stem-education-science-technology-engineering-and-mathematics>

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