A STEM Innovation Network for New Mexico

Science, Technology, Engineering, and Mathematics, known collectively as STEM, are of ever-increasing importance in the 21st century economy. According to employment projections from the U.S. Bureau of Labor Statistics, employment in STEM occupations is projected to increase by 10.8 percent between 2022 and 2032, compared to 2.3 percent for non-STEM occupations.

Given the projected growth in STEM occupations, it is vital New Mexico students are prepared for a STEM-driven economy. However, students' access to STEM education resources varies widely across the state, raising equity questions about STEM education in New Mexico.

To address the disconnected nature of the STEM education landscape in New Mexico, advocates in recent years have proposed the creation of a STEM Innovation Network. This entity would serve as a leading facilitator of collaboration between local education agencies (LEAs), industry partners, higher education, and state government in pursuit of high-quality STEM education that is accessible to all students and educators throughout New Mexico, and ultimately supports a robust workforce pipeline.

During the 2024 interim, LESC staff engaged with STEM stakeholders in New Mexico and other states to develop a potential framework for such a STEM Innovation Network. This brief will outline the proposed high-level structure of the network, the accompanying funding picture, and policy considerations for the Legislature.

Why does New Mexico need a STEM network?

New Mexico's STEM Ready! Math and Science standards place a strong emphasis on preparing students for a 21st century economy and society increasingly driven by the impacts of STEM. To support greater student engagement with STEM topics, New Mexico has also launched the Governor's STEM Challenge to encourage students to tackle real world challenges using STEM disciplines.

Despite this emphasis from the state and the projected growth in STEM employment in the coming years, New Mexico students are not adequately prepared for this current and future job market. NM Vistas

Key Takeaways

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data from the 2022-2023 school year finds that just 24 percent of New Mexico students are proficient or above in math, while 34 percent are proficient in science.

In speaking with stakeholders and STEM advocates around New Mexico, LESC staff have heard a common theme: there are a wealth of STEM education resources and programs for both students and educators in our state, but they are operating in silos, and access is often limited.

Importantly, there is an underrepresentation of various groups in the STEM workforce in New Mexico and the broader United States. 2018 data from the Department of Workforce Solutions (DWS) shows males hold nearly 75 percent of all STEM occupations in New Mexico, compared to 50.9 percent in non-STEM occupations. Census data shows that New Mexico's population is 50 percent female.

Along racial and ethnic lines, 2018 data shows that white workers make up 57.2 percent of all STEM workers in New Mexico, well above New Mexico's reported population of white residents (36.8 percent), while Hispanic/Latino, Black, and Native American New Mexicans all made up noticeably smaller percentages of the STEM workforce compared to their representation in New Mexico's overall demographics.

This underrepresentation is especially concerning considering the significant difference in average yearly salary between STEM and non-STEM occupations in New Mexico. According to a DWS data focus report, the average STEM occupation wage ($97,390) is twice that of a non-STEM job ($48,510).

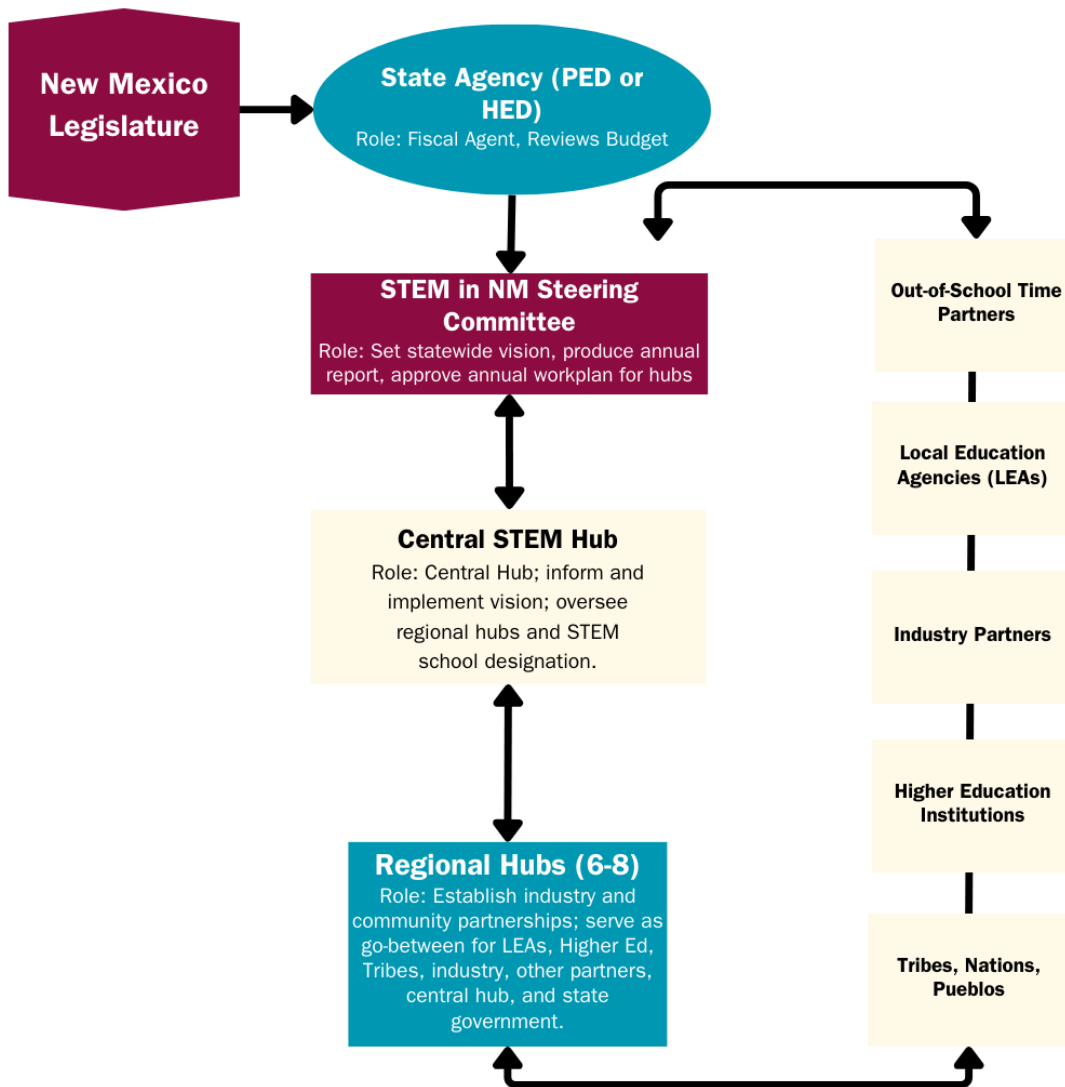# A Design for a STEM network for New Mexico

Structure

The STEM Innovation Network is best understood as the "connective tissue" between the various STEM learning opportunities and resources around New Mexico. At the same time, the network would serve as foundational infrastructure for the development of additional STEM resources in partnership with stakeholders. These efforts could help shape a broader STEM ecosystem in the state.

Leveraging other models in other states, the below graphic outlines a possible general structure of a New Mexico STEM network. This design prioritizes the use of existing entities and resources and ensuring stable funding for the network and its hubs.

New Mexico Legislature → **State Agency (PED or HED)** Role: Fiscal Agent, Reviews Budget

STEM in NM Steering Committee Role: Set statewide vision, produce annual report, approve annual workplan for hubs

Central STEM Hub Role: Central Hub; inform and implement vision; oversee regional hubs and STEM school designation.

Regional Hubs (6-8) Role: Establish industry and community partnerships; serve as go-between for LEAs, Higher Ed, Tribes, industry, other partners, central hub, and state government.

Out-of-School Time Partners — **Local Education Agencies (LEAs)** — **Industry Partners** — **Higher Education Institutions** — **Tribes, Nations, Pueblos**

Fiscal Agent. To ensure state funding is properly accounted for, this proposal would designate a state agency, either the Public Education Department or the Higher Education Department, as fiscal agent for all STEM network funds. It would be responsible for distributing funding appropriated by the Legislature to the central hub for operations and further dispersal to regional hubs.

Steering Committee. The governing body of the New Mexico STEM Innovation Network would be the STEM in NM Steering Committee. This committee would be comprised of representatives from K-12 education, higher education, regional STEM hubs, industry, and state government.

The following entities could serve as members of a steering committee to ensure diverse viewpoints are incorporated into the statewide vision for STEM education:

- Governor's Office
- Public Education Department (PED)
- Higher Education Department (HED)

- Industry leadership (ex. Los Alamos National Lab, Sandia Labs)
- Legislative Education Study Committee (LESC)
- Legislative Finance Committee (LFC)
- Department of Workforce Solutions
- Hub leadership (LEA leaders, Nonprofit heads, etc.)
- Math and Science Advisory Council (MSAC)
- Teacher representatives (Elementary, Middle, High)
- Higher Education STEM Faculty Representative
- Tribal Education Directors
- New Mexico Partnership for Math and Science Education (NMPMSE)

The role of the steering committee would be to establish and maintain an ever-evolving statewide vision for STEM education in New Mexico. Each year, the central hub, in consultation with regional hubs, would present a work plan to the committee for review and approval. In doing so, the network's governance structure acknowledges the central hub and regional hubs as the subject matter experts with relevant local knowledge critical to the success of the broader effort.

The steering committee, in reviewing and approving the annual work plan, could offer guidance and technical assistance. Other publications from state entities, such as MSAC's annual reports and PED's math framework, could help guide the work of the STEM network. In turn, the network could be a method of delivery for the vision set out in these publications.

Central Hub Creation. The network's central hub would be housed in an institute of higher education. The Legislature could designate a center of excellence, as outlined in Laws 2019, Chapter 60. Under this model, the central hub would be able to seek out and accept both public and private funding for their work. By allowing for the pursuit of philanthropic gifts, federal grants, and other non-state funding sources, the central hub would have greater financial flexibility while also reducing reliance on state dollars.

Regional Hub Creation. Once the Central Hub is designated, the entity would be responsible for overseeing the Request for Proposals (RFP) to identify regional hubs. Central hub staff would develop parameters by which to judge the viability of proposed regional hubs. These parameters could be submitted to the steering committee for final approval. Official designation as a regional network hub would also require the approval of the steering committee.

Different regions of New Mexico will have different resources, approaches, and needs. To ensure that regional hubs are responsive to the unique contexts in which they operate, the envisioned STEM network legislation would not be overly prescriptive in determining what type of entity could operate as a hub.

Possible types of regional hubs include:
- Consortium of industry/nonprofit leaders (ex. Northern New Mexico STEAM Coalition)
- Tribal governments
- Nonprofit organization (ex. Explora)
- Regional Education Cooperatives (RECs)
- Institutions of Higher Education

In the case of New Mexico's Tribes, Nations, and Pueblos, it is critical that education sovereignty is respected. To that end, this proposal would give interested Tribal governments the option to either participate in their regional hub's activities or establish a Tribe-specific hub to meet the needs of their students.

Role of Central and Regional Hubs

Central Hub

Asset Mapping. The network's central hub would be charged with creating and maintaining a record of existing STEM resources and programs throughout the state. This effort serves two purposes. It helps locate potential hubs and identifies gaps in STEM access in various parts of New Mexico. This work will also ensure the STEM network is positioned to serve as a central repository for information of New Mexico STEM resources spanning professional development, project-based learning, out-of-school time programming, and internship/externship opportunities.

STEM School Designation. In some states, notably Tennessee and Ohio, STEM networks provide support to K-12 schools through the STEM School designation process. This designation system provides LEAs with a clear road map to develop a comprehensive STEM education plan for their schools that becomes recognized for its rigor and focus.

In [Tennessee](#), applications for STEM designation are judged on the following areas of focus:
- Infrastructure
- Curriculum and Instruction
- Professional Development
- Achievement
- Community and Postsecondary Partnerships

Schools are scored on a rubric as Early, Developing, Accomplishing, or Model STEM Schools. Following application review by the Tennessee STEM Designation Review Team, schools being considered for designation are scheduled for site visits by the review team.

Final approval authority for STEM designation rests with the Tennessee Department of Education upon receipt of recommendations from the review team. Designation is valid for five years. Designated schools serve as models of high-quality STEM instruction and are given the opportunity to present best practices at the annual Tennessee STEM Innovation Summit.

In New Mexico, the central hub and steering committee could develop standards for STEM schools. The central hub and regional hub leadership (once established) would be responsible for reviewing STEM school applicants and making a formal recommendation to the steering committee. The final decision on designation would be made by the committee.

Annual STEM Summit and Monthly Network Convenings. The central hub could also be responsible for monitoring the work of regional hubs and ensuring cross-hub communication. In service of this aim, the central hub might organize an annual statewide STEM summit to allow stakeholders to discuss lessons learned and showcase their work in their respective regions. Additionally, internal monthly convenings could be held in which

regional hub leadership would report on their activities and discuss areas of need for their regions.

Statewide STEM Vision Support. As subject matter experts on STEM education and the resources available or lacking in New Mexico, the central hub would be charged with producing an annual report and work plan for the steering committee's review and approval. This will help guide the steering committee's discussions and provide vital information for determining needed next steps in state support for STEM education.

Regional Hubs

Community and Postsecondary Partnerships. As the local arm of the STEM network, regional hubs would be responsible for conducting outreach to develop and maintain partnerships with local industries, nonprofit organizations, out-of-school time programs, and higher education institutions. Through these relationships, regional hubs could facilitate access to professional development, project-based learning, internships/externships, and other STEM education resources for both students and educators.

On-the-Ground Support and Regional Advocacy. The regional hubs would be the point of contact for local entities seeking to interface with the broader network. If a school district is in search of professional development on how to incorporate project-based learning into their STEM lessons or a nonprofit or industry partner is looking to recruit students for an internship program, the regional hub could help in identifying options available in New Mexico and facilitate accessing the resource.

In addition, regional hubs would be advocates for the specific needs of their region. If there is a gap in the STEM education landscape in the region, the hub would be responsible for working with the central hub and the other regions to identify ways to connect students with resources beyond their region.

Cost of a STEM network

This proposal for a STEM network would require an appropriation of $6 million in state funding over a three-year period.

The three-year funding cycle acknowledges the need for the network to have sustained state support as it builds capacity. Each year during this funding window, the central and regional hubs will have clear indicators of progress as set by the steering committee. At the end of the three years of funding, an evaluation of the network's success in meeting these indicators would determine whether recurring funding would be established.

The below table outlines a draft three-year budget for a STEM network:

STEM Innovation Network for New Mexico				
Draft Budget				
Category	FY 2026	FY 2027	FY 2028	TOTAL
Central Hub				
Staffing (*5-7 FTEs, Exec Director)	$500,000	$725,000	$750,000	$1,975,000
Data gathering and program evaluation	$50,000	$55,000	$65,000	$170,000
Support for professional learning	$152,000	$162,000	$197,000	$511,000
Development & Imlementation of STEM Framework & Designation Process	$50,000	$50,000	$50,000	$150,000
Staff Development & Conference Fees	$18,000	$18,000	$18,000	$54,000
Organizing and hosting annual STEM Summit	$100,000	$100,000	$100,000	$300,000
Office Space (or overhead cost for existing entities)	$80,000	$80,000	$80,000	$240,000
Operational Funds (utilities, IT, software, licensing, office supplies, communications)	$50,000	$50,000	$50,000	$150,000
Travel (In-state & National)	$30,000	$35,000	$40,000	$105,000
Regional Hubs				
Support for regional STEM efforts (6-8 hubs) (Local in school/out of school/career programming aligned to STEM Framework and regional needs)	$220,000	$300,000	$475,000	$995,000
Regional Hub Staffing (6 - 8 hubs)	$250,000	$425,000	$675,000	$1,350,000
TOTAL	**$1,500,000**	**$2,000,000**	**$2,500,000**	**$6,000,000**
				Source: STEM Network Coalition

Policy Recommendations

The STEM network is a potential delivery mechanism for current and future investments in STEM education at the state level. This network is not in and of itself a solution to the challenges facing New Mexico students and educators in preparing for a STEM-driven world. Instead, the STEM network would create infrastructure to support and connect resources across the state and ensure students and educators have equitable access to these programs.

To develop a strong foundation for continued investment in STEM education in New Mexico, the Legislature could consider:

- Establishing a Center of Excellence for STEM Education at a higher education institution to function as the STEM network's central hub.

- Designating either the Public Education Department or the Higher Education Department as the fiscal agent of the STEM Innovation Network.

- Creating in statute the STEM in NM Steering Committee (including membership) to oversee the operations of the central and regional hubs.

- Appropriating $6 million in funding over three years to support the development of the STEM Innovation Network and its components.