



ISSUE BRIEF | April 2026

# The Hidden Innovation Infrastructure: Insights from Estrella Mountain Community College

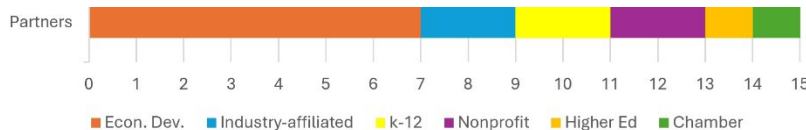
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Community colleges and their technician programs play an important and sometimes overlooked role in supporting regional economic development. In this five-year research study funded by the US National Science Foundation Advanced Technological Education (NSF ATE) program, Rutgers' Education and Employment Research Center (EERC) sought to examine how eight leading colleges engaged in economic development through innovations in technician education programs and to better understand and highlight these models. In addition to the eight college case studies, the project included interviews of 23 NSF ATE awardees, a survey of technician employers, and related labor market research. This brief describes the approach of Estrella Mountain Community College, one of eight colleges to participate in this study.

**PROGRAMS** | The study focused on two of Estrella Mountain's technical education programs:  
*Program 1: Automated Industrial Technology*      *Program 2: Power Systems Technology*

**PARTNERS** | Estrella Mountain's programs of focus benefit from partnerships with many regional employers and a diverse set of regional economic development organizations.

## REGIONAL ECONOMIC DEVELOPMENT PARTNERS



This figure offers a glimpse into the composition of actors in Estrella Mountain's regional ecosystem. The college works

with 15 key partners to accomplish its regional economic development goals. The figure shows the breakdown of those partners by organizational type.

## EMPLOYER PARTNERS

Two employer partners were interviewed, representing the electricity industry and the natural gas industry.



**PROGRAM HIGHLIGHTS** | A regionally coordinated response to industry skill demand.

**Partnering with the state.** Estrella Mountain has a strong partnership with the state-level ED organization, the Arizona Commerce Authority (ACA). The ACA provided Estrella Mountain and other Maricopa County colleges with seed funding for industry-relevant equipment as an incentive to align industry-informed curricula across its system’s schools in the absence of a statewide curricular catalog. The ACA directly supported the Automated Industrial Technology (AIT) program, helping make it cost-neutral.

**Coordinating at the industry level.** With the ACA’s support, Estrella Mountain and other Maricopa County colleges coordinated to equip workers with an industry-recognized credential through the AIT program that would meet ~80% of any one firm’s skill requirements for new employees. Through these collaborations, Estrella addresses the needs of its employer partners at the regional level and prioritizes transferable skills for workers, avoiding redundancies among regional college strategies.

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**PROGRAM STRENGTHS** | Estrella Mountain reflected some best practices for employer engagement at the regional level, inclusive student recruitment strategies, and community college collaboration:



**REGIONAL EMPLOYER  
ENGAGEMENT**

Estrella Mountain strategically engages employers through regional entities, including regional chambers, and through economic development entities like Westmarc, a private-public partnership organization.



**INCLUSIVE STUDENT  
RECRUITMENT**

A designated Hispanic-serving institution, Estrella Mountain intentionally engages underserved student populations, including through the college’s work with the Veterans Program on the nearby Luke Air Force Base.



**COMMUNITY COLLEGE  
COLLABORATION**

Estrella Mountain is part of the Arizona Advanced Technology Network (AATN), which facilitates collaboration among Maricopa County Community Colleges in a coordinated response to industry needs.

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**KEY ROLES AT ESTRELLA MOUNTAIN** | Estrella Mountain’s technical education programs engage senior administrators, program-related faculty, and student advisors.

**Senior Leadership Roles**

1. Dean (instruction-workforce math-science)
2. Dean of Instruction and Occupational Education; interim VP of Academic Affairs, VP of Workforce

**Program Faculty Roles**

1. Manufacturing Technology Faculty
2. Adjunct faculty & SouthWest Gas (employer partner) Customer Service Manager

**Student Advisor Roles**

1. Student Services Supervisor
2. Student Navigator

**ECONOMIC DEVELOPMENT ACTIVITIES** | Through its technical education programs, Estrella Mountain implements many of the activities identified as important for community college engagement in economic development. Strength was demonstrated in education and training, with important complementary involvements in business support and regional engagement activities.

***Education & Training  
Activities***

- Hands-on learning
- Club/maker space
- Work-based learning (learn & earn model)
- Grants for equipment
- Dual enrollment
- BA pathway
- Short-term training (<1 yr.)/bootcamp
- Noncredit-to-credit pathways
- Updated curriculum aligned with jobs
- National credentialing/industry certification
- Regionally aligned program with local workforce needs
- Industry advisory boards
- Community job fair/expo
- Program job fairs/online matching with employers
- Hiring majority of program faculty from industry

***Business Support  
Activities***

- Incumbent worker/customized training
- Entrepreneurship training

***Regional Engagement  
Activities***

- Participates in local economic planning/policymaking
- Assists in attracting employers to the region

**DATA SOURCES** | These findings are based on a five-year study conducted by the Rutgers University Education and Employment Research Center in partnership with the National Science Foundation. As part of that study, the EERC team:

***Selected***

**8**

Best-in-class community colleges for intensive study

***Conducted***

**79**

Interviews with college administrators, faculty, and staff

***Conducted***

**31**

Interviews with colleges' employer & regional ED partners

***Surveyed***

**84**

Regional ED partners of the colleges, with a 37% response rate

## About the Authors

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## Acknowledgments

The authors would like to thank Estrella Mountain Community College for participating in our case study. At EERC, Tracy Cangiano and Melissa Quaal skillfully provided research support throughout various phases of the project, and Angel Butts of The Word Angel LLC provided excellent editorial assistance. The authors are solely responsible for any errors. This material is based upon work supported by the National Science Foundation under Grant No. 2026262.

## The Education and Employment Research Center

Rutgers' Education and Employment Research Center (EERC) is housed within the School of Management and Labor Relations. EERC conducts research and evaluation on programs and policies at the intersection of education and employment. Our work strives to improve policy and practice so that institutions may provide educational programs and pathways that ensure individuals obtain the education needed for success in the workplace, and employers have a skilled workforce to meet their human resource needs. For more information on our mission and current research, visit [smlr.rutgers.edu/eerc](http://smlr.rutgers.edu/eerc).

### EERC Areas of Focus

Community College  
Innovation



Student Choices  
and Pathways



STEM and Technician  
Education



Noncredit Education and  
Non-Degree Credentials



Education and Labor  
Market Connections



## Rutgers School of Management and Labor Relations

Rutgers School of Management and Labor Relations (SMLR) is the leading source of expertise on the world of work, building effective and sustainable organizations, and the changing employment relationship. The school consists of two departments—one focused on all aspects of strategic human resource management and the other dedicated to the social science specialties related to labor studies and employment relations. In addition, SMLR provides many continuing education and certificate programs taught by world-class researchers and expert practitioners. For more information, visit [smlr.rutgers.edu](http://smlr.rutgers.edu).

## National Science Foundation

The US National Science Foundation (NSF) is an independent federal agency that supports fundamental research and education across all fields of science and engineering. In Fiscal Year 2022, its budget was \$8.8 billion. NSF funds research in all 50 states through grants to nearly 2,000 colleges, universities, and other institutions. Each year, NSF receives more than 50,000 competitive proposals for funding and makes about 12,000 new funding awards. With a focus on two-year Institutions of Higher Education (IHEs), the Advanced Technological Education (ATE) program supports the education of technicians for the high-technology fields that drive our nation's economy. The program involves partnerships between academic institutions (grades 7-12, IHEs), industry, and economic development agencies to promote improvement in the education of science and engineering technicians at the undergraduate and secondary institution school levels. The ATE program supports curriculum development; professional development of college faculty and secondary school teachers; career pathways; and other activities. For more information, visit National Science Foundation's Advanced Technological Education program: [atecentral.net/about](http://atecentral.net/about)

