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The Hidden Innovation Infrastructure: Insights from Daytona State 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 their 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 Daytona State College, one of eight community colleges to participate in this study.

PROGRAMS | The study focused on two of Daytona State's technical education programs:
Program 1: Engineering Technology *Program 2: Computer Engineering Technology*

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

REGIONAL ECONOMIC DEVELOPMENT PARTNERS



Daytona State College works with five key partners to accomplish regional economic development goals. These include

business, industry workforce development, and K-12 organizations. One interview was conducted with Daytona State's economic development partner, Volusia Manufacturing Association.

EMPLOYER PARTNERS

Daytona State College works closely with many regional employers across a variety of industries. Three key industries include high tech lab equipment, defense manufacturing, and boat building.



Labs & Facilities



Defense



Boats

EMPLOYER PARTNERS, CONTINUED

The FAME program : Daytona State’s regional partnership with local manufacturers

FAME (Federation for Advanced Manufacturing Education) is a national program adopted by community colleges in partnership with local industry. Through FAME, Daytona State operates a two-year program sponsored by area manufacturers to recruit, hire, and retain workers; it recruits most of its students from local high schools into advanced technical roles at regionally based companies.

A graduate of the FAME program and now an industry partner to the program in their role at a local boat manufacturer said Daytona State, through FAME and its other programs, is motivated by the question: “What does our community need?”

PROGRAM HIGHLIGHTS | Coordinating locally and connecting nationally.

Daytona State and its workforce-oriented programs under study are key vehicles for coordination between the college and regional industry as well as among regional industry actors; the college also acts as a bridge between their local manufacturing industry and useful national and state networks, programs, and funding opportunities. This coordination work has helped to bolster the region’s economic development ecosystem and its manufacturing potential.

Coordinating the local manufacturing cluster. Daytona State coordinates actively with regional manufacturers through the college’s FAME program; they were also given credit for facilitating firm-to-firm connections in the regional industry and working with local chambers of commerce.

Connecting to state and national networks & funds. In addition to FAME (a national program), Daytona State is a member of the Florida Advanced Technical Education Center (FLATE), which connects colleges, industry, and vendors. FLATE is part of the FloridaMakes network, the National Institute of Standards and Technology Manufacturing Extension Partnership (NIST MEP) Center in Florida, and an MEP National Network member. In terms of funding, Daytona State has used Job Growth Grants from FloridaCommerce, a state economic development entity, to buy equipment, and funding from CareerSource Florida, a state workforce development entity, to fund tuition subsidies for its workforce training programs.

PROGRAM STRENGTHS | Daytona State reflected some of the best practices for regional industry coordination, active employer engagement, and a focus on local employability.



REGIONAL COORDINATION

Daytona State’s coordination role was highlighted by partners, including its work bridging national networks (FAME & FLATE) and state funds with the region and connecting firms to each other locally.



ACTIVE EMPLOYER ENGAGEMENT

Through the FAME program, Daytona State supports regional employers who provide paid work experiences to students and who champion the region’s talent-development programs for the manufacturing sector.



LOCAL EMPLOYABILITY

Daytona State places an intentional focus on labor market outcomes. All or nearly all associate degree students at Daytona State who want local jobs in manufacturing upon graduation obtain employment.

KEY ROLES AT DAYTONA STATE | Daytona State’s programs leveraged teaching and leadership roles in already existing departments as well as in existing workforce-oriented functions of the college.

Daytona State developed industry-relevant programs within existing offerings. For example, the FAME program incorporated elements of the mechatronics curricula used by other non-industry-related programs.

Program-Related Roles

1. Chair, School of Computer Science
2. Professor, FAME program
3. Associate Professor
4. Assistant Professor/Drafting Design Instructor
5. Student at partner employer

Institutional Roles

1. Associate Vice President
2. Work Experience Coordinator
3. Work-Based Learning Advisor & Success Coach
4. Director, Center of Business & Industry

ECONOMIC DEVELOPMENT ACTIVITIES | Daytona State implements, through its technical education programs, many of the activities identified as important for community college engagement in economic development. Strength was demonstrated in education and training as well as business support activities.

Education & Training Activities

- Hands-on learning
- Updated curriculum aligned with jobs
- Work-based learning (learn & earn model, apprenticeships)
- Regionally aligned program with local workforce needs
- Grants for equipment
- Industry advisory boards
- Dual enrollment
- Program job fairs/online matching with employers
- BA pathway
- Credit for prior learning

Business Support Activities

- Small business incubator and assistance
- Incumbent worker/customized training
- Entrepreneurship training
- Establishment of facilities for use by local companies

Regional Engagement Activities

- Conducts local scans
- 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

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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

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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



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