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## Regional Center for Next Generation Manufacturing (RCNGM)

*Connecticut's College of Technology*

### The Center Builds Programs and Provides Resources by Offering

- Industry-driven Curricula in next-generation manufacturing including fuel cells, laser manufacturing, green engineering, nanotechnology, and biomedical applications
- Online Courses that include hybrid delivery pedagogy
- Career Marketing Materials that support the recruitment and retention of students in secondary schools and target 18 to 28 year olds
- Longitudinal Studies that identify best practices and assess students' performance in the workplace and employer satisfaction with graduates
- Curricula that bridge two-year engineering technology programs with traditional four-year engineering programs
- Faculty Externships and Student Internships in cutting-edge, next-generation manufacturing industries
- Dissemination of Best Practices for next-generation manufacturing programs through workshops, online list serv and short courses

### **1** The Center Prepares Faculty

The Center prepares faculty for the development and implementation of industry-driven, next-generation manufacturing coursework and laboratories. Through a strong partnership with Connecticut's Business and Industry Association, the Center provides faculty with industry externships in cutting-edge technologies like fuel cells, laser manufacturing, biomanufacturing, aerospace, and nanotechnology.

### The Center has Significant Collaborations and Connections with Major Industry Partners that Include

- Connecticut Business and Industry Association ([www.cbia.org](http://www.cbia.org))
- Trumpf ([www.us.trumpf.com](http://www.us.trumpf.com))
- Connecticut Center for Advanced Technology ([www.ccat.us](http://www.ccat.us))
- Becton Dickenson ([www.bd.com](http://www.bd.com))
- National Association for Manufacturing ([www.nam.org](http://www.nam.org))

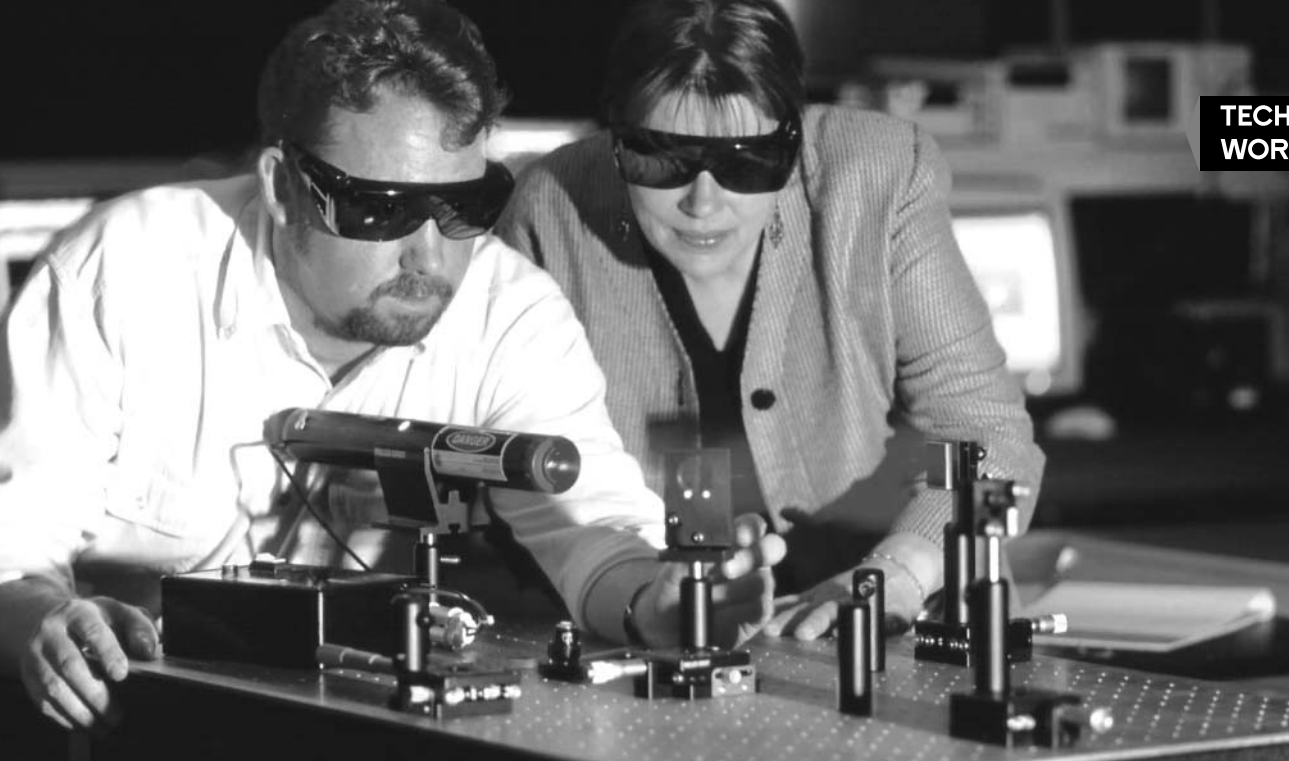


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**2**



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The wavelength spectrum of a light source is critical to many applications. Students use an optical spectrum analyzer to study the spectra of visible and near IR sources.



## TECHNICIANS IN THE WORKFORCE

Laser alignment is a critical skill in photonics manufacturing

### CAPTIONS

- 1** Students use an Erbium Doped Fiber Amplifier to study the parameters affecting population inversion and laser action
- 2** Students build a variety of interferometers to practice alignment techniques
- 3** A donated carbon dioxide laser resonator from Trumpf is used to demonstrate gas laser dynamics
- 4** Students use a CCD camera system from Spiricon to study laser beam energy distribution
- 5** Students learn the basic techniques by splicing and testing fiber reels



## THE CENTER'S IMPACT

### Faculty

Over 42 faculty members have participated in industry externships. The curriculum projects they have developed from these experiences are disseminated through workshops and online.

### Employers

By collaborating, the ATE projects in Connecticut and the Regional Center for Next Generation Manufacturing are increasing the pool of qualified technicians. Graduates of these ATE programs are prepared for careers in new fields such as laser manufacturing and fuel cell production.

### Programs

New programs, developed with industry, in laser manufacturing, photonics and fuel cells have been implemented in response to industry workforce needs.

**The power of Connecticut's College of Technology comes from the linkages established between industry and formal technical education. The college is extremely responsive to the changing demands of industry and offers students the benefit of full articulation into many of the regions four-year institutions. A home run for Connecticut's Community College System!**

*Andrew Summerville, Manager - Process and Automation Development  
Becton Dickenson Medical Systems*