Sustainable Operations: Alternative and Renewable Energy Initiative (SOAR)
A Model to Promote Student Success

The Connecticut Community Colleges

Innovative Partnerships Workshop

Clean Energy Workforce Education Conference, Saratoga, New York

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- Director of Grant Initiatives & Special Projects
- 10 years experience as a federal grant project director
- Promote strategic partnerships between the 12 CT community colleges, state & private agencies, business & industry, WIBs, and secondary education; overseeing activities to maximize effectiveness and resource utilization.
By 2020, 20 percent of the energy used in Connecticut is to come from clean or renewable sources. 

Connecticut is actively planning for the growth of green industries and the greening of white- and blue-collar jobs.
Sustainable Operations Alternative and Renewable Energy Initiative (SOAR)

The SOAR Energy Initiative has created programs to teach students how to go green.

SOAR certificate programs can:

✓ lead to a new career
✓ reinvigorate an existing career, and
✓ prepare students to pursue a higher degree.
SOAR can teach students how to:

- create and maintain energy-efficient, healthy buildings
- apply sustainable landscape ecology skills
- work with solar equipment and systems
- maintain alternative-fuel vehicles
- provide service for a clean water treatment plant
- conduct home energy audits, and more!
The SOAR Initiative

- Funded by a $2 million USDOL Community-Based Job Training Grant and run by the Connecticut Community College System.

- SOAR programs are
  - for-credit
  - college-level
  - certificate programs.
SOAR Partners and Project Advisory Committee

- CBIA
- CCAT
- CCEF
- CT DOL
- CT THS
- CTPSE
- CWEALF
- DECD
- DHE
- CT Energy Workforce Consortium
- Department of Environmental Protection
- IREC
- Institute for Sustainable Energy (ESCU)
- OWC
- RGP
- SDE
- South Central Regional Water Authority
- WIBs
- And many more
Regional Coordinators help students succeed:

- provide prospective students with program information
- meet with students when they begin and stay in touch throughout the program
- assist with problems that might keep students from succeeding
- help students find internships during the program and job opportunities as they near program completion.
SOAR Regional Coordinator Resources

Resource manual provides information for SOAR Coordinators to be effective:

- Policies and definitions
- Grant and partner information
- Providing student academic support
- Outcomes measurement, tracking and reporting templates
- Marketing and presentation recommendations
- CT Works Locations
- Student forms
SOAR Certificate Programs

- **BEST (Building Efficiency & Sustainable Technologies) Certificate**
  This two semester, 26-credit program focuses on residential energy efficiency, sustainable design and building, and renewable energies and helps prepare students for the BPI Building Analyst and the RESNET HERS Rater Certifications.

- **Certificate in Sustainable Energy**
  Provides a broad overview of emerging theory and practical application in alternative energy systems; explores current trends in sustainable technologies and offers either an entrepreneurship or financial focus.
SOAR Certificate Programs

- **Alternative Energy Systems Technology Certificate**
  Offers the foundation for a broad range of careers in the renewable energy, energy efficiency, and utility sectors. Course work includes the study of fuel cell technology, alternative energy systems, welding technology, alternative fuel vehicles, electronics, and photovoltaics.

- **Alternative Energy Transportation Technology Certificate**
  Teaches the entry-level mechanical skills needed to help operate, maintain, and repair alternative-fuel vehicle systems. Mechanical skills are taught in a laboratory in which students learn to work with tools, equipment, and materials commonly used to operate, maintain, repair, and analyze alternative energy systems.
SOAR Certificate Programs

- **Solar Technology Certificate**
  Prepares students for entry-level positions at companies that manufacture, install and/or maintain solar technology systems. Students gain a basic understanding of and operational skills in photovoltaic (solar electric), solar thermal (water/air, heating/effects of wind), and passive solar equipment, including course work in electricity and electronics.

- **Clean Water Management Certificate**
  Prepares students for the CT DEP Class I, II, III & IV Wastewater Treatment Plant Operator Certification Exams. Students may be new to the field, or already employed in the field and seeking higher levels of certification.
SOAR Certificate Programs

- **Sustainable Landscape Ecology & Conservation Technician Certificate**
  Teaches entry-level skills needed by technicians in the sustainable landscape design, planning and conservation fields

- **Sustainable Facilities Management Certificate**
  Students develop entry-level skills needed to fill technician jobs in the areas of sustainable design and planning, and sustainable facilities operations. Trains new and existing construction workers with new skill sets in sustainable environment areas, as defined by the U.S. Green Building Council and the BPI
Curriculum Development

- Participating colleges had related degree programs
- Colleges received funding for faculty to develop two-four new courses for each certificate program
- Courses and certificates went through college divisions, curriculum committees and to the Board office for approval
- Colleges utilized local advisory boards
- Project Advisory Committee, Connecticut Energy Workforce Development Consortium and Connecticut Center for Advanced Technology targeted industry groups provided additional feedback and recommendations
- Programs are modified as necessary to be responsive to industry needs
Internships

- Colleges partnered with CCEF & DEP to develop paid student internships
- A student from MCC was placed in an internship with the town of Colchester, which had several solar initiatives under review. The student attended board of selectmen meetings, worked in town hall and work with the director of town facilities. He was offered full-time employment within a few weeks into the internship.
- A student from TRCC was an intern for the Town of Norwich. His first project was to research the cost of installing charging stations for plug-in hybrid electric vehicles to determine which ones would be most cost-effective.
Internships

• Another TRCC student was an intern for the City of New London. She collected data to establish a database of municipal greenhouse gas emissions, using Clean Air Climate Protection software.

• A third student at TRCC is continuing her internship with the Town of Groton, where her main projects will be assisting the town to identify planning areas, sectors and systems; conduct a town-wide vulnerability assessment; and continue development of mapping capacity to anticipate sea level rise and storm surge impacts.

• Another TRCC student will intern for the town of Coventry. Her 3 main projects include developing a sidewalk plan for Planning & Zoning Commission, benchmarking town building energy use using EPA software and assisting with an upcoming energy fair.
Internships

- A fifth student at TRCC is working with Norwich Public Utilities, assisting with their Clean Cities Program and with energy audits in homes and commercial buildings.

- A student at GWCC is working at South Central Regional Council of Governments (SCRCOG), which includes 15 towns & cities. Her role includes conducting a regional Greenhouse gas inventory to help identify gaps and create a regional inventory and a regional climate action plan.
CT Workforce Investment System Partnership
Why Partnership Works

- Commitment & roles for partners agreed upon prior to grant proposal submission.
- Increased innovation, greater efficiency and more effective results with use of combined resources.
- Enhanced support from diverse groups statewide.
- Successful models developed, refined & replicated in subsequent projects.
- Greater opportunities for sustainability.
CT Workforce Investment System Partnerships

- Four CBJTGs enhanced existing partnerships between CCCS and the CT WIBs
- WIB representatives serve on grant advisory boards
- WIBs displayed marketing materials for CCCS programs
- ITA commitments
- Pell grant commitments
- Co-Presentations from Advisors at the One-Stop Career Centers
CT Workforce Investment System Partnerships

ADVISORS:

- attend WIB partnership meetings
- provide training to One-Stop staff in the different career areas
- reach out to employers to understand current trends in employment and hiring practices
- work with clients/students using Key Train for assessment and remediation at One-Stops and colleges
- work at the One-Stops
Energy & Green Technology DVD created by CBIA

- Overview of energy and green technology
- How to prepare for energy careers
- Teacher’s Guide
- Vignettes of young workers include:
  - Fuel Cell Technician, Environmental Engineer, Energy Specialist, Applications Engineer
- [http://www.cbia.com/edf/CareerPathways.htm](http://www.cbia.com/edf/CareerPathways.htm)
Connecticut Energy Workforce Development Consortium

- Coordinated by CBIA
- Career Awareness & Communication Subcommittee
  - Educators and industry professionals pooling resources for outreach activities to increase student awareness and preparation for careers in energy & green technology
CCAT Employer Engagement Groups

- Employers included Green Star Energy, Victory Energy Solutions, CT Department of Public Works, Birken Manufacturing, Construction Institute, Town of Wethersfield, Waterbury Hospital
- Employers reviewed curricula and provided feedback to meet industry needs
- Regional Coordinators and employers shared contact information
- Employers agreed to provide guest speakers, assist with plant tours, job shadows and internships
Girls Tech Expos
CWEALF

First expo in collaboration with the Girl Scouts. 85 girls participated in hands-on science and green-related workshops. Girls learned about living green & potential green career options

*It’s So Easy Being Green (7-10 year old girls)*

- Trash art activity. Girls used common household materials to make ecologically friendly cleaning products, learned how water run-off affects an ecosystem and how erosion occurs.

- *Living in Outer Space (11-17 year old girls)*
  Participants planned a community that could sustain itself on another planet-used commonly available recyclables to create a model of that community.
Progress to Date

- 22 instructors received training
- 1,300 potential students assisted
- More than 186 One Stop and high school guidance counselors trained
- 85 students enrolled in SOAR programs (additional fall enrollment figures pending)
- 75 additional students enrolled in SOAR courses
- 5 students have earned SOAR certificates
- Over 2,500 individuals have participated in capacity-building activities
- 85 girls participated in first Girls Tech Expo
- $359,000 in leveraged contributions
- SOAR website launched [www.commnet.edu/SOAR](http://www.commnet.edu/SOAR)
For more information:

on the web: www.commnet.edu/SOAR
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