Florida Advanced Technological Education Center

2011 Project Highlights

Organizational	Outreach	Curriculum	Pro. Development
Vision - Mission - Guiding Principles	Communications	Educator Resources	Biotechnology Workforce
Center Overview	Career / Technical Organizations	Engineering Technology Education	Engineering Technology Forum
Partnerships	Student Tours	Soft Skills Activity	Florida Energy Systems Consor-tium Project
FLATE Impact	Robot Camps	sTEm at Work	
Baldrige/Sterling Evaluation	Florida Trend's NEXT		
NSF ATE Joint Exhibits	Awards		
	FL-ATE.org		
	Madeinflorida.org		
	Product Display		

HCC

USF UNIVERSITY OF SOUTH FLORIDA COLLEGE OF ENGINEERING

St. Petersburg College SPC

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Vision - Mission - Guiding Principles

Vision

FLATE will be Florida's leading resource for education and training expertise, leadership, projects, and services to promote and support the workforce in the high performance production and manufacturing community.

MISSION

FLATE, an NSF–ATE Regional Center for Advanced Technological Education, is the go-to organization for manufacturing and advanced technical education, best practices and resources supporting the high performance skilled workforce for Florida's manufacturing sectors.

GUIDING PRINCIPLES

- Does this meet FLATE's ethical expectations?
- Does this build upon and require strong team-work to accomplish?
- Does this enhance our ability to build bridges among academia and industry partners and stakeholders?
- Does this ensure that the role of community colleges is valued and respected?
- Does this increase FLATE's leadership in technical education in the State of Florida?
- Does this support our drive toward continuous improvement and augment our ability to be innovative in developing services and products for industry and education stakeholders?
- Does this augment our aptitude for providing resources, opportunities, and access for student success?

This activity supports FLATE's vision to be a self sustaining and quality organization.

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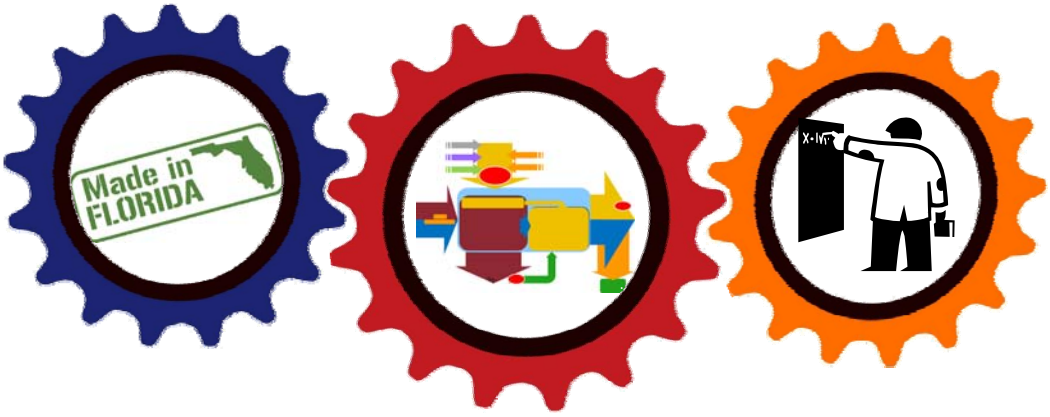
FLATE Center Overview

Organizational | Outreach | Curriculum | Professional Development

FLATE was envisioned in 2002 under a National Science Foundation Advanced Technological Education (NSF-ATE) planning grant. The Center is one of 42 ATE Centers of Excellence in the United States focused on improving science, technology, engineering and math education supporting the technician workforce needs of American advanced and emerging technology industries. FLATE's work is industry driven and focused in 3 areas of outreach and recruitment, professional development for educators, and curriculum reform.

Advancing Excellence in Engineering Technologies Education

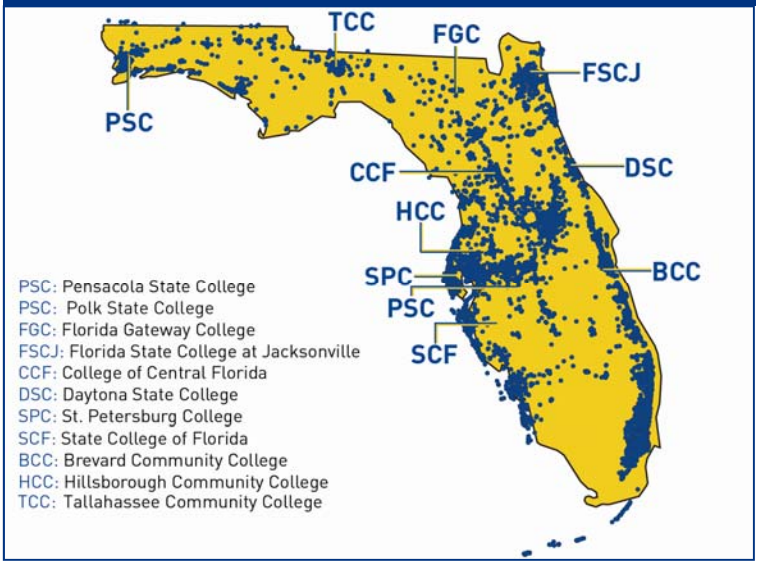
Tell
Teach
Train



Impact Locally. Lead Nationally.

Planning Grant funded in 2002
FLATE Center funded in 2004 and 2008
Awarded over $5,800,000 from NSF
Administratively located at Hillsborough Community College's Brandon Campus in Tampa, FL
Supports Career and Technical Education in secondary and post secondary programs
Leadership: HCC, SPC and USF College of Engineering

FLATE's Partners Serve Florida's High-Tech Industries



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Industry Partnerships

Organizational | Outreach | Curriculum | Professional Development

Industry Partnerships and participation in FLATE's activities and projects is crucial for our success. FLATE's Industry partnerships manifest themselves in several ways. FLATE has an Florida-based Industry Advisory Committee (IAC). As an NSF ATE Center of Excellence, FLATE also has a National Visiting Committee (NVC) predominantly comprised of executive officers of Florida's manufacturing companies. Additionally, FLATE has many partnerships with individual and groups of companies as well as statewide and professional industry organizations.

FLATE Industry Group	Activities
National Visiting Committee	Assesses, advocates, and advises the FLATE team and reports annually directly to the National Science Foundation
Industry Advisory Committee	A statewide group of manufacturing and manufacturing education practitioners providing regular input to FLATE
FLATE Corporate Honor Roll	All of FLATE's industry partners that support our outreach, curriculum and professional development activities and projects.
Annual Industry Distinguished Service Awardees	Annual award to an industry partner who strongly supports one of FLATE's academic partner or FLATE programs

"FLATE has given students and educators the tools to pursue careers/educational pathways that have high return on investment ...[and is] taking a leading role to establish and offer curriculum and training programs that are industry-centric as well as sensitive to the needs of manufacturers throughout the state."
Tom Kennedy, South Florida Manufacturers Association.

"Without the support of FLATE and its help with promotion, we would not have been able to take advantage of several industry liaisons that we currently enjoy."
Diane Mathews, Technological Research and Development Authority.

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Impact

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FLATE's impact on its educational and industry stakeholders is captured in a variety of metrics. FLATE data comes from stakeholder surveys, the Florida Department of Education enrollment databases, various web statistics, anecdotal comments, survey results, and other sources. These define our activity successes and impact as well as provide feedback for process improvements.

FLATE Activity and Impact

- Industry defined/endorsed Engineering Technology Degree (AS/AAS) degree approved by FL DOE in May 2007
⇒ Statewide credential-based articulated program aligned with NAM's Stackable Certification System
⇒ 17 frameworks for 15 certificates and 8 specializations
⇒ 12 partner colleges; 44 Florida manufacturing companies; FL Department of Education, Workforce Florida, Manufacturers Skill Standards Council, Manufacturers Association of Florida, Regional Associations
⇒ 11 college adoptions through December 2011
⇒ 1 articulated high school framework submitted to FL DOE aligned with MSSC certification (2 more in progress)
⇒ 6,152 students enrolled in Engineering Technology and related college certificate and degree programs (2010-2011)
⇒ Awarded over $210,000 to ET degree awarding college partners for laboratory upgrades to date
- A statewide articulation agreement for high school students and incumbent workers for 15 credit hours by achieving MSSC Production Technician Certification already impacting 6 existing high school programs
- Working partnership with Florida Department of Education and Workforce Florida, Inc.
- Provided language for Career and Prof. Academy legislation and testified before House and Senate subcommittees
- Crafted the award for *Banner Center for Manufacturing* for related workforce training initiatives (2006-08, $700,000)
- Awarded workforce grant from *Biomolecular Identification and Targeted Therapeutics (BITT)* for complementary workforce training initiatives (2008-2011, $500,000)
- Legislatively identified as the FESC (Florida Energy Systems Consortium) resource for community and state colleges (2009-2011, $300,000)
- FLATE has been leveraged by its partners to obtain over $55 million state and local funding
- Facilitated 38 summer externships for STEM & Manufacturing teachers in partnership with TRDA Teacher Quest
- Provided 8,249 hours of professional development to 17,966 educators and 6,770 workforce, economic and manufacturing personnel as well as to community members at hundreds of events nationwide and in Canada
- $222,630 cash donations from industry partners around the state for advertorials, student tours, DVD production, and awards
- Over $107,000 in kind contributions by industry personnel (tours, video filming, curriculum)
- Over 59,975 Florida students and educators influenced by the *Made in Florida* outreach campaign including industry tours, presentations, online and distributed videos, summer camps, multimedia resources, and advertorials through Florida Trend's *NEXT*
- 3,288 students, 343 teachers, hosted by 54 different manufacturers in 162 *Made in Florida* Industry tours
- Annually provided leadership and content for MAF's Manufacturers Summit Workforce & Education program track
- Annually recognize 3 outstanding Educational and Industry stakeholders who are champions of manufacturing education
- Supported 416 students in Robotics Camps including service to underserved populations, Junior Achievement, and "Girl's Only" camps
- Online outreach via FLATE's *FOCUS* newsletter, online lesson plan resources for educators, and website visits for fl-ate.org and MadeinFlorida.org have provided resources to a total 60,223 visitors since 2009.
- In 2010 and 2011 FLATE received five national and statewide recognitions and awards for program development and curriculum content.

- Model for integrating national skill standards into technician 2-year degree curriculum and articulation by certification credential
- Model for industry endorsed 2-year curriculum for A.S. degrees in Engineering Technologies
- Model for statewide communication among educational and industry partners and the Florida Department of Education
- National advisory boards for Technical Education including ATE Centers , MSSC, NAM, NCPN, and Professional Organizations
- Using the Baldrige Evaluation Model, an industry recognized system structured on organizational quality improvement
- Dissemination by over 200 national presentations, posters, and published papers on center activities and best practices

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Baldrige/Sterling Evaluation

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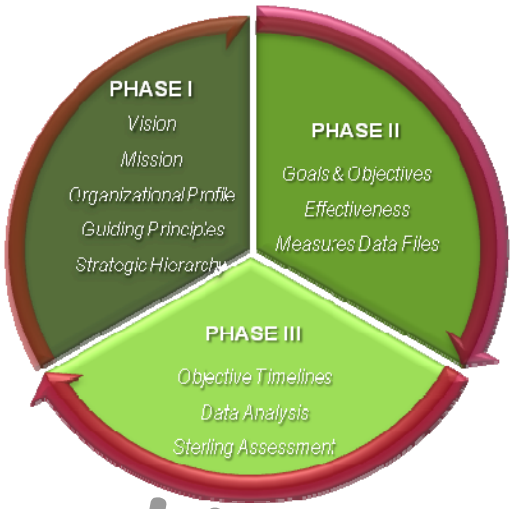
FLATE's evaluation plan consists of 2 interdependent levels – various types of data validate its performance with respect to its past, present and future goals and objectives and an overarching, strategically-oriented process ensures FLATE continues to strive for improvement in our processes and products. FLATE's strategy is to fully integrate its NSF ATE evaluation requirements with the nationally recognized Malcolm Baldrige (Florida Sterling) Quality Process. Actions and activities are driven by opportunities identified by stakeholders. Our plan is cyclic with three annual phases (each with several components).



2011 Stakeholder questions related to FLATE (n=194)	% agree or strongly agree
I have easy access to FLATE staff & products	91%
Direct support from FLATE has helped my work	66%
Professional development initiatives have assisted me	59%
Curriculum reform initiatives have helped me in my work	57%
Curriculum materials have assisted me	64%
The "Made in Florida" outreach campaign has assisted me in my work	57%

This is really fantastic! I recognized the merit of FLATE choosing an industry process for quality systems immediately. You are doing a great job implementing the Sterling process."

Mark Snyder, VP operations, Conmed Linvatec, St. Pete, FL

Top 3 Opportunities for 2012

- Maintain a focus on manufacturers and technical education, to help them understand what resources from FLATE are available to build and enhance the pipeline for the manufacturing workforce.
- More outreach (with emphasis in South Florida) promoting exchange of ideas and greater cooperation between industry, academia, students, and collaboration with other organizations with similar missions.
- There is demand for more frequent and more accessible professional development opportunities for educators (e.g. ET- and STEM-related workshops, Summer Institute).

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NSF ATE Joint Exhibits

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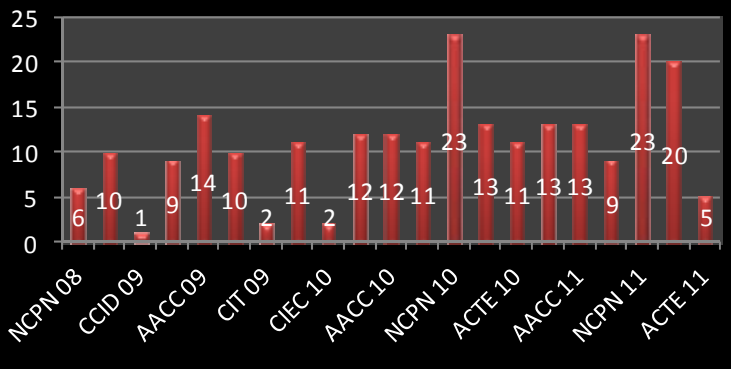
ATE CENTERS IMPACT

The NSF ATE Joint Exhibits are geared to promote the NSF ATE mission through dissemination of information and showcasing of ATE programs, products, expertise, and services at key regional and national conferences. Since 2008 the ATE Centers (40 in 2011) displayed 6-8 joint exhibit events per year. These exhibits have proven to be an effective mechanism that provide highly visible, coherent impact to a variety of regional and national stakeholders.

ATE Center Joint Exhibit Events 2011

Feb. 27-March 2	LOI	League for Innovation
April 9-12	AACC	American Association of Community Colleges
June 26-29	ASEE	American Society for Engineering Education
Oct. 2-5	STEMtech	STEMtech Conference
Oct. 5-7	NCATC	National Coalition of Advanced Technology Centers
Oct 26-28	NSF ATE PI	NSF ATE PI Conference
Nov 11-15	NCPN	National Career Pathways Network
Nov 17-19	ACTE	Association of Career and Technical Education

Center Participation (2008-2011)



Joint Exhibit Center Participation for 39 Centers (July 2008-2011)

Year	# of Centers Participating	# of Participants by Year	Center Participation (%)
2008 *July-Dec* (34 centers)	12	16	36%
2009 (36 centers)	18	47	50%
2010 (36 centers)	23	84	64%
2011 (40 centers)	28	86	70%
TOTAL: July 08-Present	**81**	**233**	

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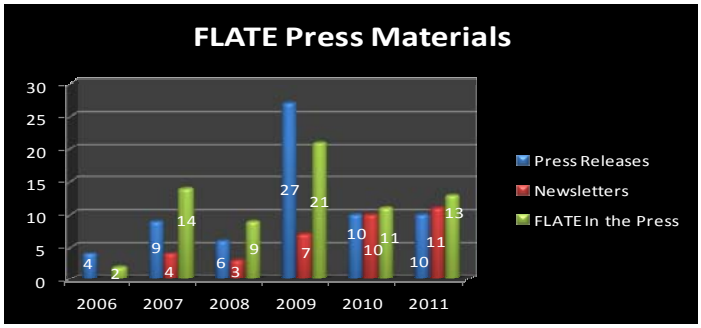
Communications

FLATE | Organizational | **Outreach** | Curriculum | Professional Development

FLATE's Communications Initiative is designed to inform FLATE's key stakeholders and the media about its multi-faceted initiatives. **FLATE FOCUS** is the monthly newsletter blog whose readership comprises of an eclectic mix of government, educational, community and industry partners from across Florida and nationwide. FLATE uses print, web based media outlets, and social networking tools to disseminate activities and projects to stakeholders and others.

Press materials can be accessed at www.fl-ate.org/news.

Press Materials	Description
Newsletters (FLATE Focus)	• Published since Spring 2007, and distributed to over 1000 individuals across the state and in the nation. The newsletter has evolved over the years from a quarterly format to monthly blog format, and can be accessed at http://flate-mif.blogspot.com. • Designed to "Connect Manufacturers, Educators & Students with Florida's Workforce"
FLATE websites	• www.fl-ate.org is FLATE's main website that has been live since 2003. • www.madeinflorida.org is FLATE's dedicated outreach website launched in 2005. It is designed to inform students, educators and the community about Florida manufacturing education and careers. • www.flate.pbwiki.com is FLATE's dedicated website for FREE teacher resources.
FLATE in the News	• Outlines FLATE's press coverage in regional publications. More information on FLATER's Pressroom • Archives video, audio, and paper-based interviews.
Media Kit	• Quick facts on organizational information, current and future projects.
Public Service Announcements	•FLATE produced a series of regionally-focused 30 second public service announcements to promote manufacturers across Florida.
Social Networking	•To promote manufacturing education and create awareness about the statewide Engineering Technology degree, FLATE has created social profiles and videos for students/educators. Search "Made in Florida" on the following networks for more information. www.facebook.com www.youtube.com www.flate-mif.blogspot.com www.teachertube.com
Manufacturing News	• Published since 2006, these updates consolidate highlights of industry-related news on the state and national level. The manufacturing news are now incorporated into the blog and updated on a monthly basis.



Feedback on FLATE Focus

"I just wanted to let you know that I love your newsletter. It is always relevant, well written, and a pleasure to read!"

Tamara Mandell, CERHB, University of Florida

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Career and Technical Student Organizations

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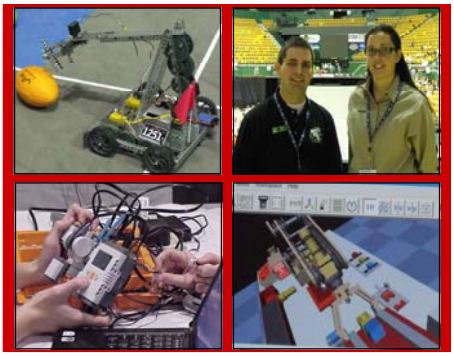

These **Career and Technical Student Organizations**, through their respective missions and visions, create an environment where the students aspire to be the best in their advanced technology careers. As members, they develop their technical skills, leadership qualities, professionalism and team building as demonstrated in the competitions supported by FLATE.

Organization	Competitive Function	FLATE Contribution
First Robotics Competition	• Design and fabricate a robot • Solve a particular problem and compete against other teams • Regional contests are held in Orlando at UCF • National competitions in Atlanta • Fall classic "Tempest N Tampa" held at the University of Tampa	• Competition sponsorship • Event manpower support • Competition judging • Hosting local events
SkillsUSA	• Categories: Automated Manufacturing Technology and the Robotics and Automation Technology categories • Solve real manufacturing problems • Nationals in Kansas City to compete against the best in the nation	• Gather industry sponsors • Design and developed competitions • Event planning and organization • Competition judging • Logistical support
Technology Students Association	• Categories: Engineering Design, CAD, System Control Technology and Manufacturing Prototype • Challenged with manufacturing problems requiring instant solutions in a team competitive environment • Present solution in report form and answer questions from judges	• Technical expertise • Competition sponsorship • Competition judging

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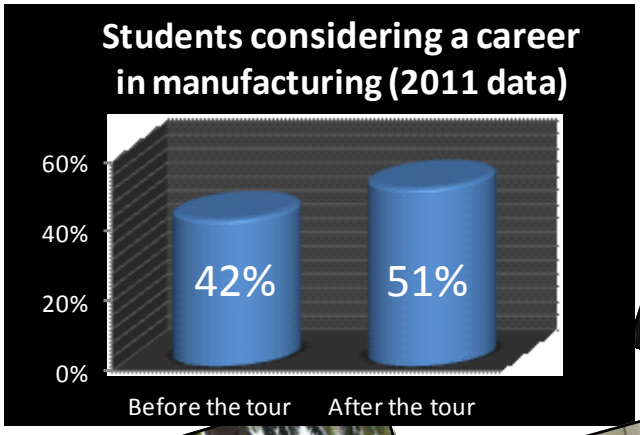
Student Tours

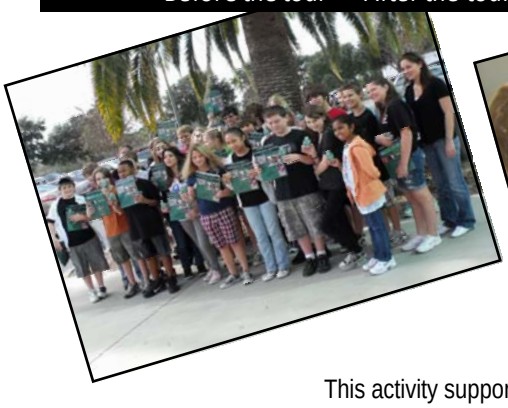
FLATE | Organizational | Outreach | Curriculum | Professional Development

Made in Florida Industry tours, for grades 7 through 12, are designed to stimulate student interest in today's modern manufacturing careers and encourage the enrollment in the essential technology programs available throughout the state. From the 2011 surveys, 80% of the students either 'Agreed' or 'Strongly Agreed' that the tour was helpful to their understanding of jobs and career options. 94% 'Agreed' or 'Strongly Agreed' that they wanted a high skill, high wage position.

Total costs January 2004 - December 2011	
Student Transportation	$43,388.00
Manufacturers In-kind Contributions	$69,250.00
FLATE's Contributions	$29,457.00
Other Related Trip Contributions	$8,050.00

Tours 1/2004 - 12/2011	Total number
High Schools	104
Middle Schools	41
Other Institutions	22
Manufacturing Sites	57
Total # of Students	3,386
Total # of Educators	355





"Man! That was COOL! When I turn 18, I'm going to come back here and apply for a job. They have so many opportunities!!

Jim Lewis, Dixie Hollins High School
St. Petersburg, FL

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Robot Camps

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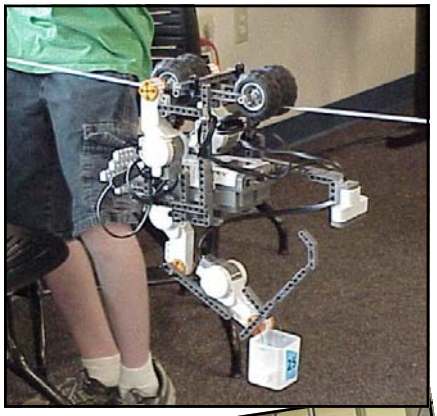

The **Summer Robotic Camp** project captures the interest of middle and high school students by following the current trend of robotic applications used throughout the entertainment media. The curriculum is a mixture of Lego educational materials, STEM subjects and modern manufacturing information conducted in an environment of competitive problem solving. The campers develop a knowledge base of modern manufacturing, robotics design and programming while adding to their team building experiences.

May 2005 — December 2011	
Camp Numbers	**Details**
22 Summer Robotics Camps	3 - Girls, Inc. Sarasota 1 - Girls, Inc. Winter Haven 14 - Hillsborough CC, Brandon Campus 1 - Hillsborough CC, SouthShore Campus 2 - College of Central Florida 1 - YWCA, St. Petersburg
3 Program Options: Introduction, Advanced and High School	Each program is a full 40 hours of videos, tours, presentations, experiential learning, observation, and fun.
8 High Tech Facilities Visited	Sun Hydraulics, New England Machine, Packaging Corporation of America, USF Nanotechnology Lab, USF Engineering Rehabilitation Lab, USF Manufacturing Lab, Valpak and Publix Dairy Facility
416 Participants	140 Girls and 276 Boys

"This camp was awesome, exciting, cool and fun!"

"I will remember how important math is so I will devote math study's for me."

"I truly remember how much team work you used, the nice teachers and how fun it was."

"I love testing and wish there were more days and more challenges."

"I learned team work is very important for success!"

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Florida Trend's NEXT

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Since 2006, the "Made in Florida" manufacturing advertorial in *Florida Trend's NEXT* magazine has reached hundreds of thousands of Florida high school students, informing them about careers in modern manufacturing and providing the guidance to make educational choices to obtain these careers. Getting students interested in manufacturing as a viable and lucrative career pathway promotes the image that Florida's manufacturing industry provides challenging, state-of-the-art technology jobs with high wages. Advertorials provide an important opportunity to reach tomorrow's workforce directly by responding to student inquiries, providing them with career pathway resources, and connecting them with local colleges offering advanced technology education.

Florida Trend NEXT (www.FloridaNEXT.com) online provides students a direct link to MadeinFlorida.org where they can learn more about career opportunities and educational

Year	Pages	Total *NEXT* Distribution	Student Requests	Partners Receiving Leads
2006-07	100	750,000	4,360 (8%)	18 colleges and technical schools
2007-08	104	750,000	4,698 (6%)	20 colleges and technical schools
2008-09	96	750,000	5,762 (7%)	31 colleges and technical schools
2009-10	76	400,000	2,831 (7%)	45 colleges and technical schools
2010-11	70	400,000	2,301 (8%)	45 colleges and technical schools

"This is a great service!"
John R Piersol
Florida Gateway College

Special thank you to our 2011 sponsors:
Manufacturers Association of Florida • ConMed Linvatec • FLATE • Banner Center for Manufacturing • FCoE-BITT • Atlantic Marine Florida • Made in Florida • Hoerbiger Corporation • BASF Chemical • Mosaic

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Awards

Every year FLATE recognizes outstanding educators, students and industry members who make a significant contribution to the training and education of today's technology workforce. Nominations are recommended following published criteria and selected by FLATE's Industrial Advisory Committee. The awardees are then recognized at the annual Manufacturers Association of Florida (MAF) Manufacturers Summit.

Award	Criteria
Manufacturing Secondary Educator-of-the-Year	• made outstanding contributions to manufacturing and/or engineering technology education • demonstrated an impact on technology education at local and state levels
Manufacturing Post-Secondary Educator-of-the-Year	• made outstanding contributions to manufacturing and/or engineering technology education • demonstrated an impact on technology education at local and state levels • demonstrated originality of ideas and techniques in manufacturing education
Industry Distinguished Service	• contributed significantly in promoting technology and career awareness in support of manufacturing • demonstrated an impact on technology education on both a local and state level through an exceptional devotion of time, effort, thought and action

2011 FLATE AWARDS

Greg McGrew - Lakewood Ranch High School, Bradenton

Robert Deckon - Florida Gateway College, Lake City

Mark Snyder - ConMed Corporation

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Website: www.fl-ate.org

Fl-ate.org—FLATE'S main website has been live since 2003. The website is the main vehicle for disseminating information and resources about FLATE activities, resources and events to FLATE stakeholders. Some points of interest include upcoming events, special pages about and for our working groups, committees and partners.

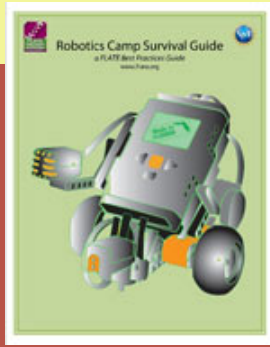
Under **About Us**, find information about FLATE and the National Science Foundation's Advanced Technological Education Program (NSF-ATE), FLATE's accomplishments since 2003, and learn about our Baldrige /Sterling Evaluation process. This website also has easy quick links to FLATE's outreach website, www.madeinflorida.org, our FLATE Focus newsletter blog and our curriculum wiki.

Website Favorites

Best Practice Guides

Available for download:

- 2011, Middle & High School Field Trips to Florida High Technology Manufacturing Facilities
- 2011, Robotics Camp Survival Guide: a FLATE Best Practices Guide



Website stats

In 2011, fl-ate.org had more than 7,600 hits with an average of 634 visitors per month.

From 2009 –2011, www.fl-ate.org had over 2,000 individual visits!

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Website: www.madeinflorida.org

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The **"Made in Florida"** website is a rich storehouse of information connecting students, parents and educators to the real world of manufacturing. The website features virtual tours and videos of some of Florida's diverse, high-tech manufacturers, and provides information on career and educational pathways needed to make informed decisions about modern manufacturing careers.

WEB GATEWAY	RESOURCES
Students	**Florida Manufacturing Overview** **Robotics Camp** **Employee Interviews** **Links to Manufacturing Exploring Websites** **E.T. Degree Resources** **Florida Trend Next**
Industry	**Florida Manufacturing Facts** **Student Outreach Kit** **Florida Senate Resolution** **Manufacturing Careers**
Educators	**Classroom Learning Resources** **Outreach Publications** **Virtual Tours** **Links to Manufacturing Career Information** **Made In Florida Video** **FLATE Contract for Assistance**

Student Profiles.....check 'em out!

Find out what high school and college students in Florida are saying about the Engineering Technology Degree.

Watch the MIF video, highlighting the world of manufacturing – right here in Florida !

Website Hits Generated

Since 2009, the Made in Florida website has generated over 27,-000 hits, With over 30,000 Page views in 2011 alone!

Learn more at:
www.madeinflorida.org

"Made in Florida" provides a comprehensive point of promotion and connection for Florida's advanced manufacturing industries, K-20 technical educators, and students.

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Florida Manufacturers Display

Organizational | Outreach | Curriculum | Professional Development

Florida Manufacturers Display is located on the 2nd floor, Hillsborough Community College Brandon campus Student Services Building, by the manufacturing labs. The items donated by Florida manufacturers state wide, are either final products, used in the production process or in some cases, the raw materials. Display items are from the medical instrument, electronic, food, drug, paper, plastic, aeronautical, entertainment and heavy machinery industries. Several pieces are displayed in production stages so students can follow the manufacturing process from a piece of stock titanium to the final polished facial replacement part. These are also used during 'Made in Florida' classroom presentations and by students in HCC's Engineering Technology Program.

This activity supports FLATE's goal to provide an effective outreach platform.

HCC | USF UNIVERSITY OF SOUTH FLORIDA COLLEGE OF ENGINEERING | St. Petersburg College SPC

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Educators Resources

FLATE

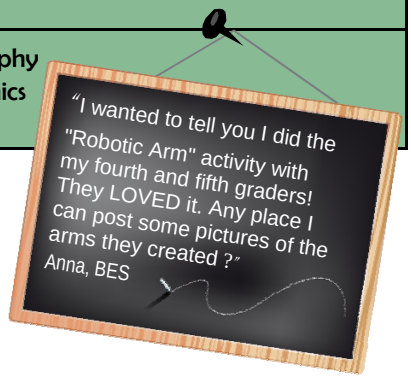
Organizational | Outreach | Curriculum | Professional Development

FLATE provides a wide array of resources for educators including the **Made in Florida lesson plans** that are designed to enrich Science, Technology, Engineering and Mathematics (STEM). The **Career & Education Planning tools** offer information on career academies, college technical degree and certificate programs in a variety of advanced technologies. **Curriculum and Professional Development Modules for Advanced Technological Education** provide in depth resources on a variety of high-tech engineering topics. The focus of all FLATE's curriculum resources is to fully integrate the 4 disciplines of STEM.

Modules	Titles	
Presentations 3 MIF Presentations	• What is Manufacturing • U Measure & Design	• Teamwork
High School level 10 MIF Lesson Plans	• Juice Challenges 1, 2 & 3 • Design a Tour Bus • Properties of Matter • Manufacture Your Own Chocolate (*New*)	• You Measure & Design • Safety Inspector • Pre and Post Manufacturing Tour (*New*) • Which Type of Chocolate Melts the Fastest (*New*)
Middle School level 13 MIF Lesson Plans	• Container Challenge • What's the Matter • U Measure & Design • U Fix It • Manufacture Your Own Chocolate (*New*) • Which Type of Chocolate Melts the Fastest (*New*) • Behind the Window: Manufacturing Process (*New*)	• Design a Tour Bus • Strings that Sing • Made in Florida Scavenger Hunt • Dress 4 Success & Safety • Pre and Post Manufacturing Tour (*New*) • Robot Programming: Pseudo Code (*New*)
Middle School - 4 Career and Education Planning lessons	• Exploring High Tech Careers • The Toothpick Factory	• Take a Road Trip • How It's Made...a Career
Advanced Technological Education modules	• Vacuum Technology • Electromechanical Systems • Clean rooms	• Photolithography • Fluids Mechanics • Metrology

Presented to over 6,300 educators

Florida Technology Education Association Conference, Florida Engineering Education Conference, Guidance Counselor's Career Connections, Professional Development Day Tech Teachers, Engineering Expo-University of South Florida, SDHC STEM Institutes



This project supports FLATE's goal to unify and enhance Florida's secondary and post-secondary STEM and Manufacturing curriculum.

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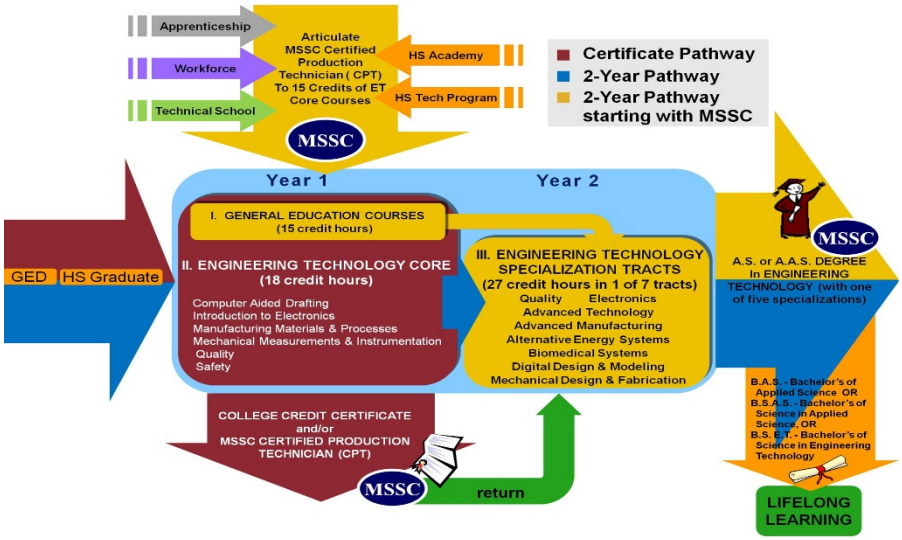
Engineering Technology Education

FLATE

Organizational | Outreach | Curriculum | Professional Development

Industry, colleges, FLATE, and the Florida Department of Education partnered to produce the **Engineering Technology** A.S./A.A.S. Degree Program. It has 3 components: (I) general education (II) an ET technical core and (III) specialization tracts (eight) that address regional industry needs. The ET Core aligns with the Manufacturing Skills Standards Council Certified Production Technician (MSSC-CPT) national certification, which articulates 15 credit hours of the ET Core. This industry validated, credentialed based articulated degree is a model for national implementation of "earn and learn" strategies.



Florida ET enrollments up 74%

College	ET Specializations
Brevard Community College	(1) Advanced Technology (2) Electronics (3) Alternative Energy Systems
College of Central Florida	Quality (2) Digital Design & Modeling
Daytona State College	*To be announced*
Florida State College @ Jacksonville	(1) Advanced Manufacturing (2) Mechanical Design & Fabrication
Hillsborough Community College	Advanced Manufacturing
Florida Gateway College	Quality
Pensacola State College	Mechanical Design & Fabrication
Polk State College	Advanced Manufacturing
St. Petersburg College	(1) Electronics (2) Quality (3) Digital Design & Modeling (4) Medical Systems
State College of Florida	(1) Electronics (2) Digital Design & Modeling (3) Alternative Energy Systems
Tallahassee Community College	5 Technical Certificates

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Soft Skills Activity

Organizational | Outreach | Curriculum | Professional Development

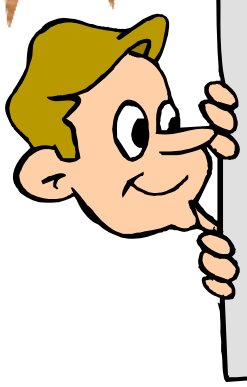
The Toothpick Factory® is a hands-on activity, set in a manufacturing context, that stimulates discussion and awareness about a wide range of *soft skills* that are essential in today's work and personal relationships. These are workplace standards of behavior needed by employees to interact and cooperate effectively with co-workers. FLATE provides professional development to educators all over the world.

THE TOOTHPICK FACTORY®
The simulation game for soft skills

Workshops	Objectives	Who we impact
The Toothpick Factory	• How to be a good team player • How to adapt to change • How to lead others • How to communicate effectively • How to offer & receive feedback	Over 200 students and 347 post-secondary, secondary educators and industry leaders

AWARD WINNER

2011 Best Practice in support of Career Pathways/Programs of Study Initiatives in the state of Florida from National Career Pathways Network (NCPN)

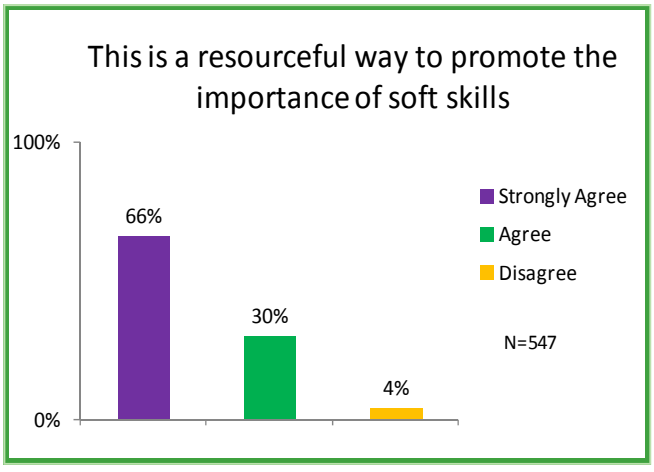


What people say about *the Toothpick Factory®*...

"It's a good way to start a pattern for cooperative learning."

"The provided scenario was engaging without being overly complex."

"There was teamwork & engagement throughout the session."



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sTEm At Work

Organizational | Outreach | Curriculum | Professional Development

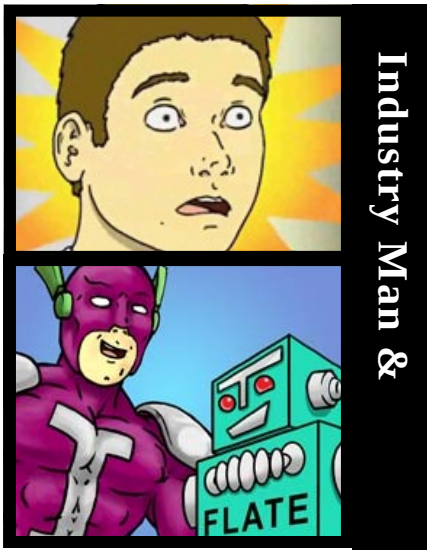
The objective of "sTEm at work" is to dispel two common misconceptions.

1. The letters s, t, e and m represent independent disciplines.
2. Although each discipline is interesting and has merit of its own, the operating principle behind STEM is that science and mathematics support engineering practices that culminate in a technology application.

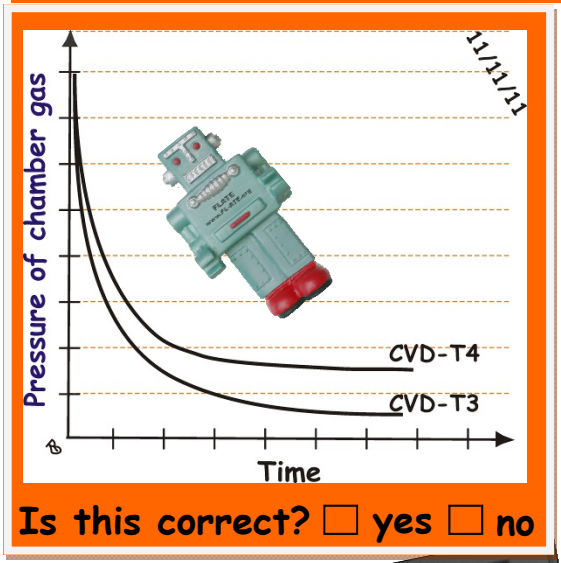
sTEm At Work
science Technology Engineering & math

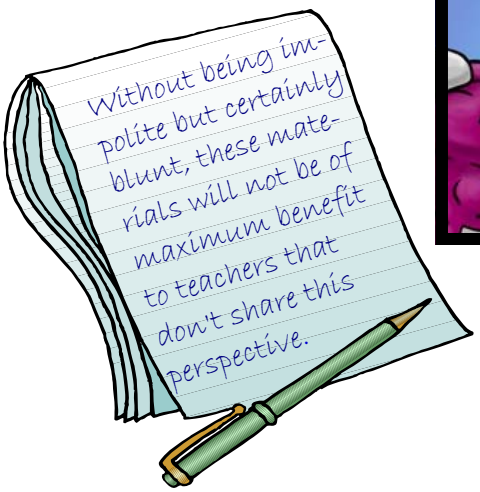
The sTEm at work initiative currently has 3 resources:

⇒ sTEm puzzles
⇒ sTEm video clips with embedded lessons
⇒ HSTi the High School Technology Initiative

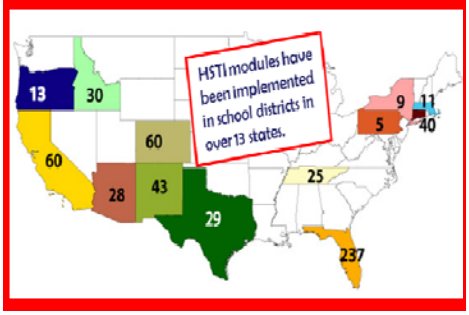


Find sTEm Puzzles here! www.fl-ate.org/projects/stem.html





Number of teachers using HSTI



HSTi Modules/Units

HSTi
High School Technology Initiative

www.HSTi-online.org

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Biotechnology Workforce

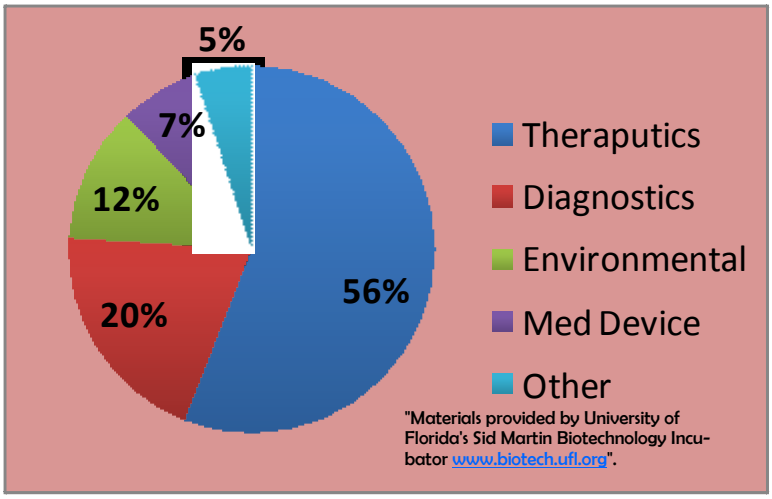
Organizational | Outreach | Curriculum | Professional Development

The Biomolecular Identification and Targeted Therapeutics Center at the University of South Florida is a Florida Department of Education Center of Excellence. Beginning in January 2008, FLATE, the National Science Foundation's Advanced Technological Education Center for Florida, housed at HCC, partnered with BITT to facilitate the workforce development components of BITT. This activity is the basis of a BITT to FLATE $500,000 sub-award in 2008.

A.S. Biotechnology Degree (HCC & SCF)

General Education Requirements:	**TOTAL: 15 credits**
Technical Course Requirements:	**TOTAL: 46 credits**
Intro to Biotechnology	*3*
Biotechnology 1& Lab	*5*
Biotechnology 2 & Lab (Molecular Bio Cell & Immunology)	*5*
Biotechnology Internship	*3*
Human Biology	*3*
General Chemistry 1 & lab	*4*
General Chemistry 2 & ab	*4*
Organic Chemistry 1 & lab	*4*
Organic Chemistry 2 & lab	*4*
Microbiology & lab	*4*
Statistics	*3*

Bio-Related Industries in Tampa Bay



"Materials provided by University of Florida's Sid Martin Biotechnology Incubator www.biotech.ufl.org".

Workforce Development Survey	Results
Preferred Education Level	Bachelor's Degree
Technical Job Categories	Chemist, Research Scientist, QC Manager, Engineer, Lab Technician
Market Base	Local to International
Internship Program	Yes—30% No—64%
Tuition Reimbursement	Yes—32% No—68%

The survey was administered to 139 biopharmaceutical, medical device manufacturers, and research & development industries in the greater Tampa Bay area. The survey completion was 36%. It was designed with a balance between comprehensive training needs and workforce skills knowledge acquisition and simplicity to optimize in its return rate. The objective was to determine directly from companies in the region what specific skills were required to do certain jobs as well as educational requirements perceived necessary for their workplace.

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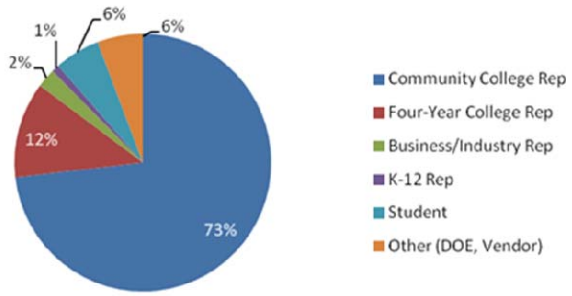
Engineering Technology Forum

Organizational | Outreach | Curriculum | Professional Development

The **Forum on Engineering Technology** (E.T. Forum) is an important vehicle for bringing together Florida's diverse and geographically dispersed community. FLATE utilizes this organization to strengthen the consortium, share its administrative activities and projects, provide professional development, bring industry and academia together, engage industry and academia in statewide curriculum reform, and keep participants in touch with college program achievements, issues and concerns across Florida. The Forum meets twice a year; the 2-day meeting has met twenty-seven times since 1996 at 19 different Florida colleges.

ET Forum Participant Summary



ET Forum Impacts

- ✓ Lead reform of statewide A.S. curriculum
- ✓ Provides a platform for strong partnerships among colleges
- ✓ Reforms & organizes state ET common numbers
- ✓ Unifies input to Perkins IV implementation
- ✓ Supported CAPE and other CTE legislation
- ✓ Aligns external standards to student outcomes and frameworks
- ✓ Supports strong community of practice
- ✓ Brings state agencies together with educators
- ✓ Offers professional development opportunities
- ✓ Supports FLDOE review initiatives

Typical 2 Day ET Forum Agenda

DAY 1	DAY 2
Welcome, introductions, overview	Open Forum - continued
Open Forum – issues, concerns, news	Local Industry Panel
Enrollment & Retention – guest speaker	FL DOE Updates
Engineering Tech Degree updates	Surveys, next meeting, closure
Vendor Lunch demos/presentations	Lunch for ET Workshop
Tour /Demos – host labs/local company	FLATE Engineering Technology Workshop
Local college updates / presentation	
SCNS (State Common Course Numbering System) Updates	
Group dinner	Workshop closure

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Florida Energy Systems Consortium Project

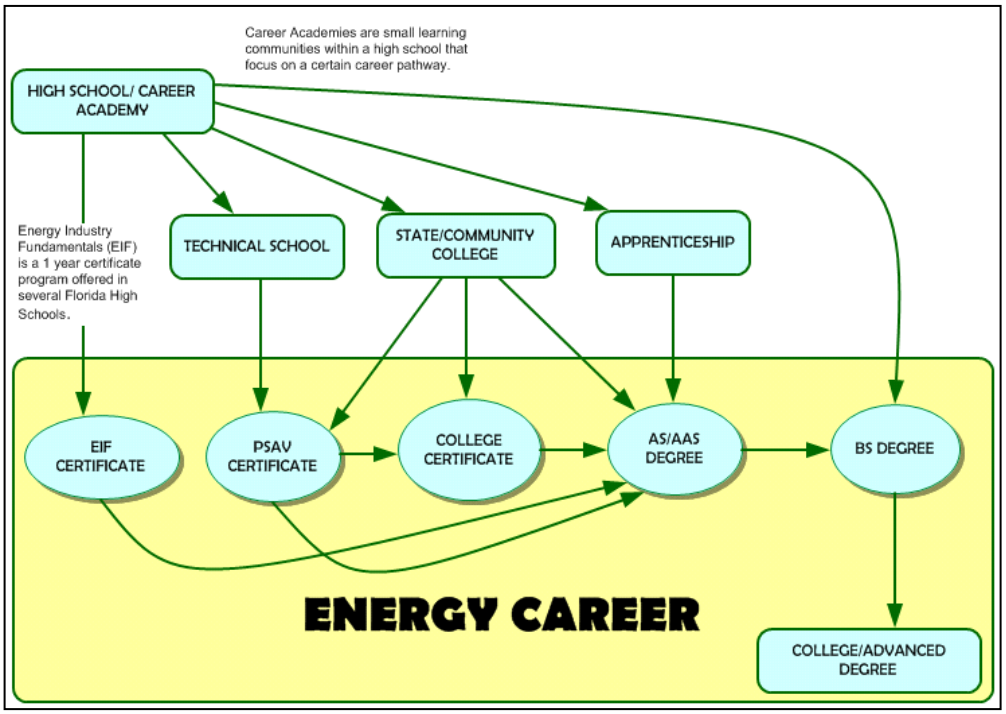
FLATE

Organizational | Outreach | Curriculum | Professional Development

FESC Florida Energy Systems Consortium

The 2008 Florida Legislature defined goals and specific objectives with respect to energy production and consumption to meet its 2020 target criteria. The FESC-FLATE partnership defines FLATE as FESC's core facility for community college technical workforce education development and deployment throughout the state. FESC is strategically focused on workforce preparation for the existing and emerging energy industry. Many energy-industry educational opportunities are available throughout the state, while other exciting opportunities are being developed. FESC is working to coordinate these efforts and ensure that existing distance education facilities at each university will be utilized to make these programs available via on-line courses.

Education Pathways to Energy Careers



DATE	EVENT
3/11	Presentation at Interstate Renewable Energy Council (IREC), Clean Energy Workshop—Saratoga, NY
3/11	Presentation at 8th Annual Green Energy Summit—Milwaukee, WI
6/11	Summer Energy Camp for Middle School Students (25 participants with 98% from underserved populations)
6/11	Summer Energy Camp for Teachers (17 participants)
9/11	FESC Pre-Summit Energy Workshop at Santa Fe College & Center for Economic and Innovative Development (19 participants)
9/11	FESC Summit Poster Presentation

Engineering Technology A.S. Programs

College Credit Certificates:
1. Alternative Energy Systems Specialist (offered by Brevard & Tallahassee Community Colleges and in 2012 by Gulf Coast State College).
2. Industrial Energy Efficiency Technician (under development).

A.S. Degree Specializations:
1. Alternative Energy Systems Technology (offered by Brevard Community College).
2. Industrial Energy Efficiency (under development).

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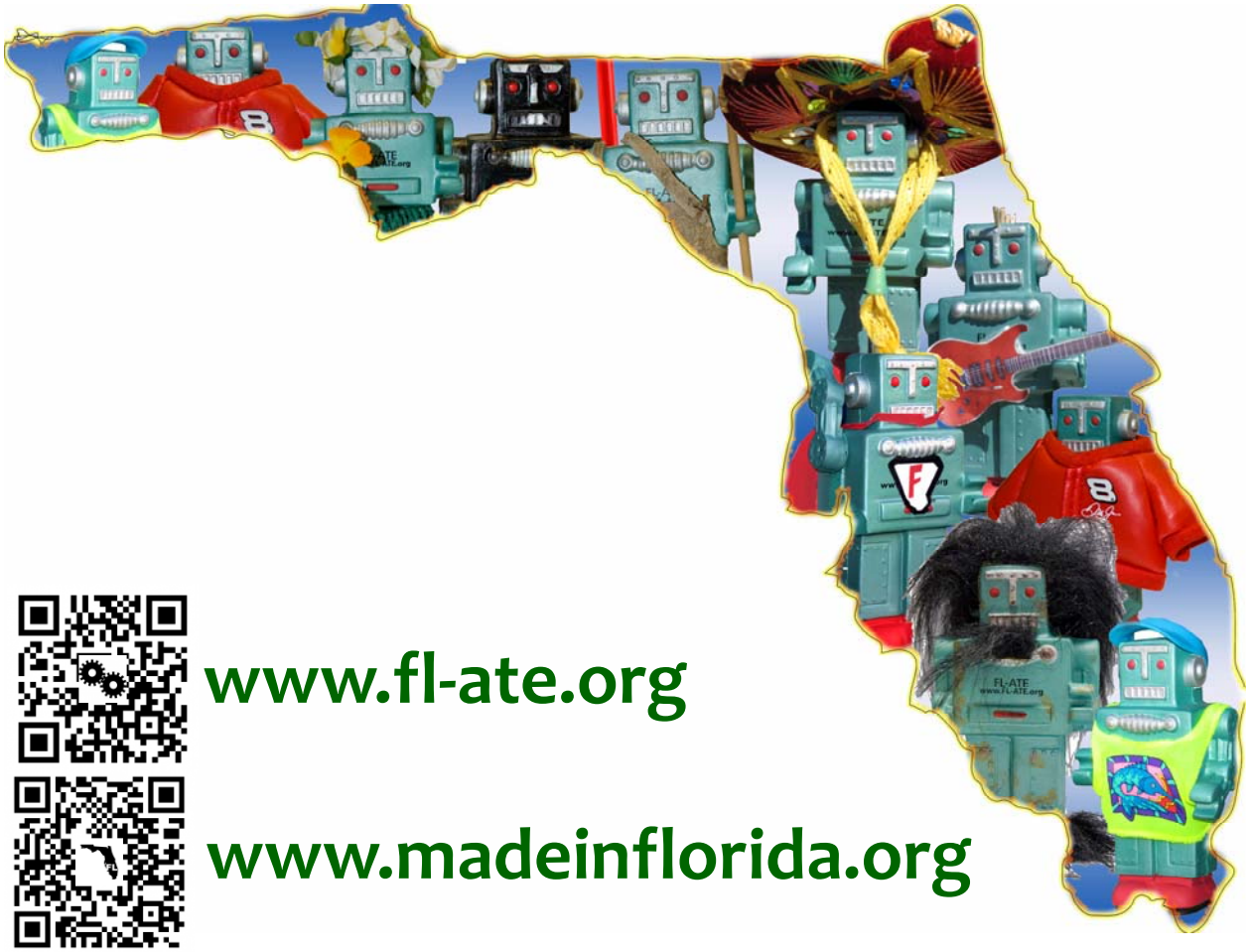
Industry, Educators and Students

Connecting for Excellence in Manufacturing



www.fl-ate.org

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