

FLATE National Visiting Committee (NVC) Report

Date: February 3-4, 2011

Members Present:

John Stilp (Chairman), Michael Haycock, Bruce Drigget (for Hannes Hunschofsky), Terry Iverson, Christy Leite, Eric Owens, Mark Snyder, Robert Williams (via teleconference), Antony Fedd (via teleconference), Jennifer McNelly, Tina Brudnicki, Allen Carlson, Don Gugliuzza (via teleconference)

FLATE Staff Present:

Marilyn Barger, Richard Gilbert, Brad Jenkins, Dave Gula, Lourdes Flueringa, Marie Boyette, and Jorge Monreal

Others Present: Phil Centonze, FLATE's NSF grant evaluator; Carlos Soto, HCC-Brandon Campus President; Sabrina Peacock, HCC-Brandon Dean of Business & Technologies; Tom Kennedy, Director South Florida Manufacturers Association; Pratt Whitney Rocketdyne: William Butdorf, WPB Site ACE Manager; Michael Popp, WPB Aerothermal Engineering Manager; Christy Leite, Operations ACE Manager; Alberto Arco, Sikorsky Transformation/ACE Manager (Final Assembly and Flight Operations); Heather M. Stewart, Sikorsky Planning and Control Manager (Final Assembly and Flight Operations); David Wilcox, Sikorsky Black Hawk Operations Manager (Final Assembly and Flight Operations)

Members Excused: Stefan Kramer, Andra Cornelius

Location: Pratt Whitney Rocketdyne, West Palm Beach, Florida

Meeting called to order at 12:00 (noon) February 3, 2011.

Introduction:

The Florida Advanced Technological Education Center has pursued a consistent strategy in pursuit of its mission. The FLATE team recognized from their inception in 2003 that to execute a total reconstruction of the A.S. degree based system as it reflects advanced manufacturing and its related technologies each sector: Florida Department of Education, Workforce Florida, Florida's manufacturers and related industries, the public school system, and the overall public, would have to take ownership of their parts of this reconstruction. A key component of that strategy was to put mechanisms in place that would help these sectors accomplish their missions and at the same time incorporate NSF-ATE's objectives to build that advanced technology based workforce as dictated by Congress. To that end, FLATE has derived, directed, and driven major changes in Florida's approach to A.S. degree education pathways as well as transfer ownership of those changes to the appropriate partner. A few succinct examples will establish this point.

- The Florida Department of Education now supervises the implementation of FLATE's state wide articulated A.S. Engineering Technology degree program and provides FLATE with college, high school and technical school enrollment data.
- FLATE crafted and created a successful Workforce Florida proposal for establishing and operating at HCC the first Florida Banner Center for Manufacturing and provided the vision and leadership to structure its operational platform and incorporate the MSSC

(Manufacturing Skills Standard Council) - CPT (Certified Production Technician) credential concept into the Banner Center's mission. The Florida Banner Center for Manufacturing is now located at Polk State College as a standalone center supported by Workforce Florida that maintains a MSSC incumbent worker training component for MSSC, supports its own senior management, and offers several workforce related training products.

- FLATE also integrated the MSSC certification as an articulated component of the A.S. Engineering Technology degree, providing college credit for all holders of a current MSSC credential, and continues to maintain the integrity of the alignment of the curriculum to the external standard in partnership with the FLDOE and Florida's manufacturers.
- FLATE continues to support new Engineering Technology college and high school programs aligned with MSSC in a variety of ways wherever there is a need to strengthen and secure individual programs at local institution through the state. This includes equipment grants to colleges to support the ET Core and paying for MSSC testing for both college and high school students; identifying curriculum gaps and providing professional development for teachers to fill those gaps; assistance with programmatic updates and implementation of new courses or specializations; assistance with outreach and recruitment of students; outreach to local businesses; and both providing and supporting professional development for faculty and teachers. This comprehensive, full-service support system helps to ensure that the academic programs remain robust into the future.
- FLATE worked directly with the then fledgling Manufacturers Association of Florida to craft their education mission to include support of a strong integrated K-14 manufacturing focused education system including its support for the now well established CAPE (Career and Professional Education) academy structure in the Florida public school system, as well as support and affirm the MSSC credential's industry-value.
- FLATE has partnered and strengthened the Florida Forum for Engineering Technology (ET Forum) as an avenue for professional development and networking with agency, academic, and industry persons from around the state. Partnering and supporting this stable pre-existing institution ensures sustainability of FLATE's enhancements to the organizations mission and goals.

Finally, but not insignificantly, FLATE structured its National Visiting Committee initially as a small group that could help with the initial challenges and details of establishing its ATE Regional Center for Florida. As FLATE matured, so has the constituency and role of the NVC. Following suggestions from the NVC over the years, FLATE's NVC membership now includes senior representation from the Florida Department of Education, Workforce Florida, the National Manufacturing Association, and Florida manufacturing operations that have a state impact as well as a major national and international workforce and market base. It also includes a manufacturer that is a member of the Governor's commission that deals with the State's manufacturing issues. In line with this maturation, the majority of 2011 NVC meeting attendees were direct representatives from Florida's industry sector.

Strategy Synopsis:

The NVC concurs with FLATE's leadership team as to FLATE's activity focus to strengthen

technical education and career paths in Florida. That strategy synopsis includes continuing the development of strong industry partnerships. The NVC is in strong support of FLATE's use of its resources on a coordinated expansion into south Florida. Elements of that strategy would include direct efforts with the South Florida Regional Manufacturers Association (SFMA) and the development of a FLATE liaison that would carry FLATE's message to manufacturers in that region. All of manufacturing in Florida has the same challenge to develop a long term continuing technical education platform for its technical workforce, but south Florida manufacturers have specific challenges that deal with the international flavor of its manufacturing sector and a FLATE liaison can also serve double duty in bringing those needs to FLATE's attention.

In addition, FLATE should begin to examine the state's education based pre-engineering development structure as it relates to developing a technical workforce. It is important to determine effective ways to blend this educational pathway to meet Florida's advanced technology workforce needs. Finally, as FLATE completes this NSF grant period renewal stage, it should realize that it has built a significant reputation in the United States for the work that it has done in the State of Florida. As such, the NVC suggests that FLATE continue to impact Florida but recognizes that it needs to take a lead nationally with respect to its accomplished goals. Therefore, it is time, as recommended by NVC's National Manufacturing Association representative, for FLATE to adopt "Impact Florida, Lead Nationally" as its mantra and execute its goals accordingly.

NVC Progress Analysis by Goals:

Goal #1 – SUSTAINABILITY – to assure that FLATE’s mission is sustained

Overall Sustainability is mainly a result of two issues - sustainability in funding sources with the need to keep the center going and sustainable, and institutionalization, of its program activities. The NVC encourages top institutional leadership to interact with FLATE staff where appropriate. The NVC believes job creation potential is viable and approves of FLATE's approach to build a state wide continuous technical education pathway that includes recognized industry certifications to recognize incumbent worker skills as well as appropriate academic degrees to support a worker's current career status. This strategy will maximize the potential of workers securing technical based employment and advancement in that selected career path.

SWOT Analysis of Goal 1: Sustainability	S	W	O	T
ET Degree now implemented with 9 colleges throughout Florida	X			
2 state and 1 national recognition/awards in 2010	X		X	
Institutionalizing products and services		X	X	
Coordination of existing partners i.e. Banner Centers, MEP, ATE Centers, FESC, BITT, colleges, school districts	X		X	
FLATE staff	X		X	
Industrial Advisory Committee	X			
Executive Committee	X			
National Visiting Committee	X		X	
Sterling/Baldrige Evaluation	X		X	

Strategic Planning	X			
2 nd renewal process of NSF funding for continuation of a Regional Center with pre-proposal due in April 2011 and full proposal due in October 2011	X		X	
Various partner projects and contracts	X		X	

Goal #2 - CURRICULAR ACTIVITIES – To implement a statewide unified education system for manufacturing that positions manufacturing education as a convergent curriculum that optimizes technician preparation in manufacturing and its enabling technologies.

Development of “post-ET” degree pathways and a focus on pre-Engineering leading to a 4-year baccalaureate degree is a visionary model component of future curricula development and should be explored.

SWOT Analysis of Goal 2: Curricular Activities	S	W	O	T
Pre-Engineering Degree development			X	
ET Degree; in particular the link to MSSC	X		X	
ET Degree adopted by 9 colleges in FL	X			
New specializations with ET Degree	X			
\$300K for equipment/lab supplies for implementing colleges	X			
Partnership with FLDOE	X			
WIDS software implementation to institutionalize the details of the curriculum and document the skills alignment (MSSC to FLDOE Framework to classroom courses)	X		X	
MSSC testing for CC and HS students to tighten curriculum alignment	X		X	

Goal #3 OUTREACH – To provide an effective outreach platform for Florida’s high school, community college, industry, and legislative access to information related to the requirements for, and impact of, manufacturing education.

Particularly noted by the NVC was the south Florida venue for this annual meeting and the attendance by a representative from SFMA. This was an objective identified by the NVC last year and FLATE personnel are to be commended for response to that request and their movement from a central Florida meeting focus to a more statewide presence. The NVC encourages continued expansion in south Florida involving more industry, education, and association participation.

SWOT Analysis of Goal 3: Outreach	S	W	O	T
FLATE staff participation on MSSC National Panel of Experts	X			
Linking activities to STEM related areas	X			
NAM committee M. Barger	X		X	
Made in Florida Outreach Campaign – FLATE Industry Honor Roll	X		X	

“Made in Florida” campaign linkage to NAM’s “Dream It – Do It” campaign			X	
MAF Summit participation and Awards partnership	X		X	
Manufacturing Expo (proposed by T. Iverson)			X	
MOSI Partnership			X	
Made in Florida video	X		X	
South Florida Manufactures Association	X		X	
Bay Area Manufactures Association Education Committee	X			
Manufactures Association of Central Florida		X		
Social networking	X			
Input from industry members present at the NVC:	X		X	
Expanded web presence on www.STEMflorida.net and www.eflorida.com , RMAs, others	X			
Develop manufacturing related/industry driven apprenticeships			X	
Summer robotic camp Best Practice and student impact study	X		X	

Goal #4 PROFESSIONAL DEVELOPMENT – To present professional development opportunities for technical faculty to develop, refine, or certify their knowledge base within manufacturing and/or its related enabling technologies and educational pedagogies.

There will be opportunities and responsibilities to provide professional development for faculty and teachers in programs aligned to the MSSC credential as gaps are identified from data acquired in the current student testing project. Gaps will be identified and addressed in a series of Summer ET Institutes for teachers and faculty of the ET degree and the NVC encourages FLATE to start that series this summer. The NVC looks forward to an update on this next year.

SWOT Analysis of Goal 4: Professional Development	S	W	O	T
Engineering Technology Forums	X		X	
Dissemination of Toothpick Factory skills	X		X	
Certifying faculty in nationally endorsed standards	X	X	X	
Some faculty/staff already certified in nationally endorsed standards	X			
FLATE supporting educators at HiTEC conference	X			
Summer PD for K-12 STEM teachers	X		X	
2011 Summer Institute for ET faculty and teachers			X	

Conclusion

The members of the FLATE National Visiting Committee commend the FLATE team for their continued work over this grant renewal period. That effort has led FLATE to become leaders in their field as related to Advanced Manufacturing Technology as well as continuing to meet the objectives for goals that support their mission. The NVC believes that this demonstrated dedication to developing Florida's advanced technological workforce defines a strong basis for additional NSF funding for the continuation of Regional Center operations as verbalized in a grant proposal for submitting in October 2011. FLATE has demonstrated viability, visibility,

and vision in its support of Florida's technological education systems. It carries out its work in full cooperation with two-year and four-year colleges in the Florida State College system, universities in the Florida University System, the county structured school districts, the manufacturing and business communities, and state and regional government agencies. In summary, FLATE's reputation in and value to Florida as an NSF center is well established. The NVC stands unanimously behind FLATE, and is confident in its ability to accomplish its objectives to meet its stated goals. The potential exists to adapt and carry forward some of FLATE's derived state models towards a national focus. We encourage FLATE to do this and to continue to market its products, expertise, and services to all of Florida. We wish to acknowledge the hard work and dedication of the FLATE Executive Committee and operational team and thank them for the many report submissions in support of this report.

The NVC wishes to particularly thank Pratt Whitney Rocketdyne for its generosity and hospitality in hosting this year's meeting. Pratt Whitney's operations in Florida are fantastic and it is important for the NVC to continue to observe firsthand clear examples of what advanced manufacturing means in Florida. Sun Hydraulics, Tropicana, Valpak, and this year's meeting location certainly meet that need and the NVC encourages FLATE to continue this NVC meeting location practice.

Next NVC Meeting Dates: February 2 -3, 2012, Location to be decided.

Meeting adjourned at 1:33 p.m., February 4, 2011.

Respectfully submitted,

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Attachments:

(attachments - FLATE 2010 Goal Status Report & NVC Member List with contact information)



**FLATE Goal Status Summary
NSF National Visiting Committee
Annual Meeting
February 3-4, 2011**

Prelude

A summary of FLATE's activities within the context of the Center's NSF ATE grant goals and target objectives as defined in the October 1, 2009 funding cycle is provided. As in previous goal status reports, FLATE strives to support its goals and objectives with definitive measures and impacts. The FLATE leadership team annually reassesses its objectives within the context of the current economic and educational operating environment in order to address changes, opportunities, and additions. The team continuously looks for opportunities to improve effectiveness measures and supportive documentation in order to best identify, define, and reflect our success and impact.

FLATE's tri-focus on Curriculum, Outreach, and Professional Development is the essence of NSF's intent for ATE Centers and essential for full realization of our 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.

As this vision has sharpened through FLATE's history it continues to be anchored to and focus on our 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 to support the high performance skilled workforce for Florida's manufacturing sectors."

Status Details

Recognition must be an operational element of FLATE's profile if its mission is to be accomplished. In 2010, FLATE received prestigious peer reviewed program, curriculum, and individual recognitions. The Innovative Program Award was given to FLATE at the July 2010 High Impact Technology Exchange Conference. This NSF sponsored conference services all of the technologies covered by NSF national and regional ATE centers and ATE supported projects. The Florida Department of Education's Chancellor's Best Practice Award for Workforce Education was presented to the Engineering Technology degree program at St. Petersburg College at the FACC annual convention in November 2010. An Exemplary Practice Award for "A Unified Statewide Approach to Meet the Needs of Florida's Hi-Tech Industry" was granted by the Occupational & Workforce Commission, Florida Association of Community Colleges, during the same conference. All three of these awards are direct evidence that FLATE's bold approach to develop a single state-wide engineering technology degree that incorporates industry certifications as genuine college credit components of the degree is beginning to be recognized

as an important new career pathway for Florida's workforce. A little closer to home, FLATE was recognized by the Tampa Bay Teacher Quest Program as a 2010 Business Partner. The Society of Manufacturing Engineers (SME) magazine published an invited article in the April 2010 print and digital editions by Drs. Barger and Gilbert and Mark Snyder about FLATE's curriculum reform models and career pathways as well as related activities by manufacturing focused ATE Centers (Manufacturing Engineering Magazine "Focus on Workforce", Volume 144, #4). Collectively, these various forms of recognition help announce FLATE as 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.

Following 2009's goal status summary document structure, this 2010 summary highlights the detailed information that will be provided during the NVC Meeting. Currently, this information is publicly posted on at http://fl-ate.org/about_us/evaluation.html (use the left navigation panel for all administrative and organizational documents) and includes the timeline document which reflects our current status for meeting our target objectives; FLATE's effectiveness measures which defines how we actually measure and monitor our success; our Baldrige assessment documents for 2010; and our 2009 summary annual evaluation report (submitted in April 2010).

A brief overview of FLATE's cumulative impact 2004-2009 is provided here and the updated version will be provided at the NVC meeting. Additionally, a FLATE Chronology includes a brief history of FLATE and FLATE-related activities since our first interactions with the NSF ATE program. Other supportive information and documentation about the activities and projects in this year's Goal Status Report can be found on related pages on our websites and will be provided in hard copy in the NVC meeting binder.

Status summary:

FLATE continues to focus on its 4 goals as a path to fulfilling its mission. All the specific items requested by the NVC in 2009 are being addressed. In addition, FLATE, as suggested by the NVC, identified action opportunities based on feedback from the 2009 Stakeholder survey to be acted upon. FLATE continues to address the entire set of incomplete target objectives associated with all of its mission goals. Completed Target Objectives include 1.1, 1.2, 1.4, 1.6, 1.7, 2.1, 2.2, 2.3, 2.6, 2.7, 2.8, 2.9, 2.10, 3.2, 3.3, and 4.2. This represents 40% of the total objectives with all but two, Target Objective 2.5 and Target Objective 3.4, of the remaining objectives on target for completion by the end of this grant funding cycle. The 2010 Goal Status Summary below expands on this summary, begins with Goal 1, and has a presentation order that mimics the 2009 report.

GOAL 1: *To ensure that FLATE's mission is sustained.*

Activity in support of Goal 1 has continued to strengthen FLATE's organizational structure. All but two, Target Objective 1.3 and Target Objective 1.5 have been completed. Specific attention was focused on Target Objectives 1.7 (our bi-annual Baldrige assessment) and Target Objective 1.5 (an exportable evaluation model for NSF ATE) in 2010. Target Objective 1.3 is the key item for discussion in the next Executive Committee meeting. Additionally, we responded to 2 opportunities related to Goal 1 as suggested by the 2009 NVC report to NSF. Both suggestions, re-phrase the Goal and expand the Industry Advisory Committee, have been addressed and are discussed in more detail in the following paragraphs. FLATE also updated its mission statement slightly and added an eighth Guiding Principle related to its ethical expectations http://www.fl-ate.org/about_us/vision.html

GOAL 1 Statement:

As guided by the NVC, FLATE adjusted its first Goal for the current grant cycle to reflect a more global and comprehensive interpretation of sustainability. Our sustainability concept now includes institutionalization of FLATE's projects and concepts such as the approved statewide curriculum frameworks adopted by the Florida Department of Education and the statewide articulation for skill certifications concept adapted within the workforce education organizational structure in Florida. The revised goal statement above was crafted by FLATE and approved by the NVC shortly after the 2009 NVC meeting.

Sterling/Baldrige Evaluation:

As part of its plan to seek a Sterling award, FLATE completed its bi-annual Sterling assessment (Target Objective 1.7) by a qualified Sterling examiner and registered a score shift from 310 in 2008 to 362 points range for 2010. Recalling the exponential nature of the Sterling grading system, this evaluation step change classifies FLATE as an above average entity from a Sterling organizational perspective. In addition, this bi-annual assessment provides FLATE with defined opportunities to improve its processes and products. The Leadership team is identifying specific activities for FLATE to pursue in the coming year as well as developing implementation plans with appropriate assessment procedures. An overview of opportunities and related assessments will be provided at the NVC meeting. Extensive details on this recent Sterling review can be found on the fl-ate.org web site and will be provided at the meeting.

Sustainability strengths, as recommended in the 2009 NVC Report, continue to be developed as export models for others (Target Objective 1.5). FLATE was asked to present its Baldrige based evaluation model as a workshop, *Designing Practical and Useful Evaluations*, at the 2010 NSF-ATE Principal Investigators National Conference. FLATE was recently recruited by Palm Beach State College as a grant partner not only for our STEM expertise but specifically to share our working knowledge of the Sterling Evaluation model for NSF grant projects and activities.

Guided by the Sterling model, 2010 data evaluation at FLATE now includes more targeted evaluation strategies using baseline and benchmarking measures. We have refined, revised and streamlined our data collection and analysis processes to include automatically updating spreadsheets; monthly tracking documents; and individual evaluation briefs on our various

projects and activities. These new data based tools provide regular feedback on projects so we can rapidly respond with improvements. Additionally, we have identified FLATE's real and potential national and international impact based on our data. Specifically, we use our new tools to target increased measurement and evaluation FLATE educational products, and monitor their use to pin point impact as well as identify where more outreach effort is needed.

FLATE Leadership:

The NSF-ATE FLATE grant administratively awarded to Hillsborough Community College identifies 3 strong institutional partnerships. Dr. Marilyn Barger, the grant's Principal Investigator and FLATE's Executive Director, and two Co-Principal Investigators, Dr. Richard Gilbert, Professor of Chemical Engineering and Biomedical Engineering at USF, Tampa Campus and Mr. Bradley Jenkins, Director of Engineering Technologies, St. Petersburg College, Clearwater Campus, have supervised grant funds since the initial award in 2004. Marilyn, Richard and Brad along with FLATE's external evaluator, Phil Centonze, make up the FLATE Leadership Team.

FLATE Staff:

There have been minimal changes to FLATE staff in 2010. Our curriculum coordinator moved to Virginia and this position is currently posted.

Marilyn Barger, Ph.D., P.E.	Executive Director and Principal Investigator
Marie Boyette, Ph.D.	Associate Director
Dave Gula	Outreach Manager
Janice Mukhia	Communication Specialist
<i>Open (currently posted)</i>	Curriculum Coordinator
Lourdes Fedna	Sr. Staff Assistant
Pedro Colon	Student Assistant

FLATE contracts with a number of professionals for professional work outside our in-house skill set. There has been minimal change in these contracted services in 2010. The people and services are summarized below.

Colin Miller	Web design	2005
Wayne Chin	Graphic arts	2006
Phil Centonze	External Evaluation	2006
Jackie Volugaris	NEXT response coordinator	2007
Constantine Stefanakos	Videographer	2008
Jennifer Ulman	Database development/bookkeeping	2009
Danielly Cole	Outreach Curriculum Development	2009
Nicole Casse	Desktop publishing	2009-10/2010
Jodi Sutton	Desktop publishing / creative services	2010
Jim Wordes	Photography	2010
Kimberly Wilson	Web Material Development	2010
	Outreach Ambassador	2010

FLATE's full time staff was provided with the opportunity of a self-assessment and subsequent meeting with FLATE's executive director and is also subject to HCC's annual performance review/evaluation. Staff activity is documented and tracked at weekly meetings attended by all

FLATE staff and recorded meeting and event reports. In addition, a FLATE staff professional development log is maintained to track type and hours of professional development activity.

Industry Advisory Committee:

The Industry Advisory Committee will hold its 18th meeting, January 13, 2011, 2 weeks prior to the NVC meeting and hosted at FLATE’s administrative campus, Hillsborough Community College. The committee currently has 35 members. An IAC subcommittee organized and carried out the 4th annual FLATE Educator and Industry Awards and Recognition Program. The IAC financially supports this project (Objective 1.4) and its continuing success is monitored under Goal 3. IAC meetings use the Adobe Connect remote meeting platform to include members unable to attend and to enhance statewide participation. The meetings are rotated throughout the state and are typically well attended. The IAC is FLATE’s forum to invite new participants who can add relevance to FLATE’s relationship with industry, the workforce, and education. Tampa Electric Company (TECO) will be sending two engineers for the first time to the Jan 2011 meeting to explore opportunities, and near neighbor Aparicio-Levy Technical Center will also be added in 2011. Details about the recent meetings can be found on the IAC web page under the “committees” menu (www.fl-ate.org/committees/iac.html). Many members serve both on FLATE’s IAC committee as well as on one of FLATE college partners’ Engineering Technology program advisory committees, thus increasing the synergy and connection between the groups.

National Visiting Committee:

The NVC has had minor changes in the past 12 months. Eric Owen, State Supervisor for Manufacturing and Transportation is permanently replacing Loretta Costin for the Florida Department of Education. The FLDOE has had consistent representation (Target Objective 2.14) on the NVC since 2005. Grant Peterson, Industry rep since 2009 resigned due to more extensive travel required of his job. We are fortunate to add Jennifer McNelly, representing the Manufacturers Institute of NAM; Tina Brudnicki of Society of Manufacturing Engineers (SME) who is the new chairperson of the FLATE Industrial Advisory Committee; and Mark Snyder who served as IAC Committee chairperson from its inception in 2004 through May 2010. The NVC list with corresponding organization, date of first service, sector, and location is provided.

Name	Organization		Category	State
John Stilp (Chair NVC)	Milwaukee Area Technical College	2005	Academic	WI
Stefan Kraemer	Siemens Energy & Automation	2005	Industry	CA/FL
Allen Carlson	Sun Hydraulics	2006	Industry	FL
Anthony Fedd	BASF Corporation	2006	Industry	FL
Robert Williams, Ph.D.	Daytona State College	2006	Academic	FL
Andra Cornelius	Workforce Florida	2007	State Agency	FL
Mark Snyder	CONMED Linvatec	2008	Industry	FL
Don Gugliuzza	MAF representative (Mileo & Associates, Inc)	2009	Industry	FL
Eric Owen	Florida Department of Education	2009	State Agency	FL
Michael Haycock	Pepsico/Tropicana	2010	Industry	FL
Hannes Hunschofsky	Hoerbiger Corporation of America	2010	Industry	FL
Terry Iverson	Iverson and Company	2010	Industry	IN
Christy Leite	Pratt & Whitney Rocketdyne	2010	Industry	FL
Tina Brudnicki	IAC Chair (Society Manufacturing Engineers)	2011	Industry	FL
Jennifer McNelly	National Association of Manufacturers	2011	Industry	DC

Duncan McBride FLATE's NSF Project Manager and Phil Centonze, FLATE's External Evaluator, also participate annually in the National Visiting Committee. Details from previous meetings can be found on the NVC's FLATE webpage, www.fl-ate.org/committees/NVC.html.

Executive Committee:

This committee met in late February 2010 at CONMED Linvatec. The Executive Committee represents each of FLATE's principle investigator partner institutions, HCC, SPC, and USF. In addition to the 3 grant principal investigators, (M Barger, B. Jenkins, and R. Gilbert) committee membership includes one senior executive from each college (Carlos Soto, HCC; Stan Vittetoe, SPC, and Rod Casto, USF) plus the chair of the industry advisory committee, Tina Brundnicki. The committee is focused on FLATE's interactions with its founding institutions, state organizations and their internal organizations as well as FLATE's recognition within the Tampa Bay region and the Center's long-term sustainability. The 2010 meeting of this committee met in February and focused on; snapshot views ("elevator speech") messages of what FLATE is and how to communicate it; developing a proposal to demonstrate a pathway from FLATE's A.S. Engineering Technology degree into USF's College of Engineering (target objective 2.11). Both of these activates are completed and will be discussed briefly at the meeting. In early 2011, this committee will direct its attention (Target Objective 1.3) to ideas and implementation strategies based on a new sustainable funding opportunity that NSF has made available to us). More details about the Executive Committee's work, including meeting notes can be found at www.fl-ate.org/committees/EC.html.

Strategic Planning:

In support of its goal to sustain its mission, FLATE accepted numerous invitations to provide professional development by local and regional school districts, conducted county in-service professional development for teachers, was invited to testify on the state of alternative energy technician training and education in Florida to the State legislative committee for Private Colleges and Public Universities Policy, spoke at a national alternative energy conference, and made various other state and nationwide conference presentations. Additionally, FLATE offered a number of soft skills and sTEM-at-work puzzle training workshops in Florida and across the country. Together with FLATE's participation in MSSC National Panel of Experts, the National Associations of Manufacturers Manufacturing Institute's Education Council, and other national advisory boards these interactions collectively provide data and information on emerging trends in both advanced technologies and education thus allowing FLATE to analyze the trends in technical education, provide feedback on such initiatives, and continuously improve its outreach, curriculum reform, and professional development opportunities. In summary, FLATE continues to "tell, teach, and train" educators, school administrators, and business professionals in order to advance excellence in engineering technologies, STEM curriculum content, and serve the changing workforce needs of American advanced and emerging technology industries.

As an important platform of its sustainability goal, FLATE has a substantial role and significant funding support from two Florida legislatures recognized and supported Centers of Excellence, the Biomolecular Identification and Targeted Therapeutics (BITT) Center at USF and the Florida Energy Systems Consortium Project (FESC) operating out of the University of Florida (Target Objective 1.1). BITT's mission includes expanding workforce education to support the growing

bio-life science and biotechnology sectors. FESC is charged with coordinating the State University System research and development of innovative energy systems that lead to alternative energy strategies, improved energy efficiencies, and expanded economic development. FLATE was legislatively directed to develop the technician education strategy to build the technical workforce to support these transforming and new technologies.

Strategic Plan activity summary:

FLATE continues to focus on long-term strategic planning and uses its eight Guiding Principles (http://www.fl-ate.org/about_us/docs/VisionMissionGuidingPrinciples%20090908.pdf) to evaluate potential projects and initiatives with long-term sustainability in mind. Continuing and new activities/partnerships/initiatives supporting these efforts include:

- Seeking funds/donations to the “Made in Florida” outreach campaign as an operational mechanism that provides financial support for FLATE awards, summer camps, and the Florida Trend NEXT advertorial.
- Operating its FLATE “Marketplace” through the HCC online bookstore. Currently we maintain a number of “Made in Florida” promotion items (poster series, polo and tee shirts, lapel pins, and the Toothpick Factory©) available for purchase. Our philosophy and policy for curriculum materials is to offer materials as downloadable files via our websites but also offer hard copies through the Marketplace.
- Continuing to seek a company to license/manufacture the Toothpick Factory©.
- Accepting contracts for services from other NSF ATE projects (a total of \$8,200 for the 2010).
- Partnering in NSF-ATE project proposals as a consultant for curriculum development and/or outreach or as a sub-awarded partner with leadership roles (6 partner submissions in October 2010).
- Continuing participation on NAM’s Education Council, MSSC’s National Panel of Experts, and advisory groups of several other national organizations.
- Participating in Florida’s STEM Florida initiative, the Central Florida STEM Council, USF’s Center for Technological Literacy, and initial efforts on Florida’s west coast.
- Continuing current projects with BITT and FESC through 2011.
- Receiving 2 additional supplemental fund awards from NSF-ATE: organizing the Centers Joint Exhibits through June 2012; developing a pilot project for community college students studying abroad (Spain) and defining the impact in today’s global economy.
- Soliciting both in-kind and cash donations and support.

GOAL 2: *To implement a statewide unified education system for manufacturing that positions manufacturing education as a convergent curriculum that optimizes technician preparation in manufacturing and it's enabling technologies.*

2010 Goal 2 supporting activities focused on securing and supporting the Engineering Technology AS degree program in the adopting colleges; alignment of student outcomes with the MSSC skill standards; MSSC testing of students enrolled in the ET Core classes and beginning a gap analysis of the results (Target Objective 2.5); developing a plan and submitting a proposal in partnership with HCC and USF College of Engineering for articulation of the AS ET degree into BS Engineering programs (Target Objectives 2.11, 2.12). We have also started efforts on secondary school partnerships with the ET degree college programs (Target Objective 2.13). Additionally, the 2009 NVC report suggested providing some opportunity for industries to connect directly to technicians or technician colleges with specific skill sets (as defined by the ET Degree specializations). The NVC also suggested reviewing apprenticeship program alignments to the ET Degree.

Engineering Technology Degree:

The Engineering Technology Degree is now in place throughout Florida. Nine colleges within the Florida State College System (Target Objective 2.1) have adopted the degree. FLATE continues to work with these and other colleges interested in the degree. We look forward to adding 1-2 more colleges to the number that offer the ET Degree in 2011. The enrollment in the Engineering Technology degree and certificate programs continues upward from no reported enrolment in 2007 to 347 as of June 2010. Specific colleges with their selected specializations and college certificates together with enrolment data relative to other A.S. degree programs that support the high performance production and manufacturing community workforce development are provided in 2010 FLATE Enrolment Data Report located in the NVC Information Binder.

In support of its vision and mission, FLATE has worked diligently through the Engineering Technology Forum to directly connect colleges across the state with each other, the Florida Department of Education, other state agencies, and industry in support of workforce development via the Engineering Technology Degree core and its supporting specializations (Target Objective 2.9). A complete list of colleges ET Degree offering, including specialization and certificates is available online and will be provided in the NVC Binders. Beyond supporting adoption processes of the ET Degree at various colleges, FLATE administers additional support through marketing materials that it prepares, produces, and provides to each adopting college. Of particular interest are the ET Degree postcards and 6 foot ET Degree Pull up banners for each school that also include the promotional website: <http://madeinflorida.org/engineering-technology-degree/e-t-overview/>. FLATE also allocated up to \$300,000 of its NSF funds in this current funding cycle to provide up to \$30,000 to ET adopting colleges for equipment to support courses in the ET Core. To date, the status of these “grants” is summarized in the chart below, with all colleges to date being offered the maximum of \$30,000.

College	MOU/Purchase	Equipment	Report on first use
BCC	2009	Metrology/hand tools	Fall 2010 - complete
CCF	2009	Metrology/hand tools	Fall 2010 - complete
SPC	2010	Milling, metrology	Spring 2011
SCF	2010	Metrology/3D printing	Spring 2011
HCC	2010	Motors, controls	Fall 2011
FSCJ	Offered for 2011		
PSC	Offered for 2011		
FGC	Offered for 2011		

Following up on the NVC's interest in apprenticeship alignment, Polk State College has taken the lead and developed an apprenticeship program that aligns with and articulates to their ET degree through a local agreement. Apprenticeship programs in general (as defined by the US Department of Labor) are between 2 – 4 years in duration and, specifically, they require a partnership with industry that support the apprentice with approximately half time employment and require the student be engaged in hands-on and classroom training with an instructor on the target technology of the program. Polk State College assembled its local articulated apprenticeship program to include MSSC skills, directed first portion completers to take the MSSC exams, and, if they pass, articulate credits to the FLATE crafted ET Degree via the statewide articulation. Advanced portions of their program align with the more advanced courses of the Advanced Manufacturing Specialization. As a result, completers of the apprenticeship program articulate 15 credit hours via a valid MSSC certification as well as a number of credits for the specialization courses, if they choose to enroll in the degree program.

Although workers with skilled trades are still valuable employees, as automation is being embraced and embedded in most manufacturing facilities the trend is moving away from just apprenticeship prepared workers. However, there are still specific apprenticeship programs such as welding, tool and die making, and machining that will continue to support manufacturing in Florida. FLATE will look for ET degree partners to explore additional cross pollination and potential articulations to the ET degree with local apprenticeship programs.

The essence of the specific apprenticeship alignment accomplishment by Polk State College emphasizes the enormous contribution provided by FLATE's ET degree structure. The development of local college articulated apprenticeship programs is standard fair however; the integration of such hands-on worker training based platforms with an A.S. Degree that has state wide articulation that includes a nationally recognized certification is unique. This extra degree of freedom as demonstrated by Polk State College ET degree program will allow other ET adopting colleges to follow suite to service their particular apprenticeship customer base.

FLATE is currently working with WIDS software to develop an exportable crosswalk between ET core courses and MSSC certification standards (Target Objective 2.5). This activity has been brought to the ET Forum for collaboration with Banner Center, industry, and other institutions. Related Forum summaries and agendas can be found on FLATE's website at <http://www.flate.org/projects/et-forum.html>.

Partnership with FLDOE:

FLATE is recognized statewide as a valuable liaison between FLDOE and community and state colleges for development and revisions of technical curriculum frameworks (Objective 2.14). The ET Forum activity has been an instrumental vehicle to consolidate ET core courses to a minimal set and develop a shared mapping model. As new technologies emerge with corresponding technician workforce needs, FLATE has supported the efforts by coordinating focus groups, surveying faculty, and developing the state curriculum frameworks based on this input. FLATE responded to requests from the FLDOE to review curriculum frameworks in related secondary programs; and support academic standards alignment to manufacturing cluster Career and Technical education programs. One such alignment effort, conducted in partnership with the Banner Center for Advanced Manufacturing, provided input for alignment of the Automation and Production Technology secondary curriculum frameworks with Intermediate Algebra, with ultimately allowed the APT framework to be eligible for Florida's Race to the Top (RTTT) funding at individual districts. Unfortunately, to date, we are not aware of any school districts that have taken advantage of this opportunity to add this new program in their district offerings. However, FLATE does look forward to continuing the alignment of CTE programs with academic standards as it reviews curriculum frameworks for the FLDOE on their current review cycle.

Critical components for Goal 2 success:

FLATE has identified two crucial components for Goal 2 as it relates to FLDOE's expectation for a long term statewide success of the Engineering Technology Degree. One component is the development of a secure pathway from secondary schools (Target Objective 2.13) into the ET degree program. In 2010, FLATE began working closely with several schools offering MSSC aligned secondary programs and the colleges. This task is multifaceted. It involves identifying appropriate secondary programs, convening pertinent teachers and district administrators with the equivalent college faculty and deans, providing information about the others programs, sharing opportunities, supporting MSSC testing, defining shared projects and/or activities, and empowering industry and professional organizations to appreciate the value and potential of both academic structures as career pathways and subsequently provide integrated support for both HS and college programs. Work in 2010 began in high school partners for BCC, SPC, CCF, and SCF.

The second crucial component for success is providing industry with employees that meet their projected needs. This is a somewhat tricky business in the current economic environment; however, employer needs are characterized by current employee skills and defined by expected future workforce requirements. Even in this not hiring mode, workers with company-required specific skills will be needed at some point. With the recent launch of the new "Made in Florida" website, (Target Objective 3.1) FLATE will provide easy access for employers to schools offering the various ET degree specializations and current students for employers across the state. These direct links will create the now missing feedback loop the colleges need to optimally match ET degree certificates to employer immediate needs and ET specializations for employer long term growth. Thanks to our Industry Advisory Committee brainstorming of this topic at their September meeting, complete implementation of this site feature is scheduled for the fall of 2011 however; other aspects of FLATE outreach plan are discussed below.

GOAL 3: *To provide an effective outreach platform for Florida's high school, community college, industry, and legislature to access information related to the requirements for, and impact of, manufacturing education.*

Activities supporting Goal 3 include all of our outreach efforts that fall under the umbrella of FLATE's "Made in Florida" outreach campaign. Highlights for 2010 are the January release and distribution of revision 2 of the "Made in Florida" video now in both Spanish and English and with chapters for easier use in classrooms (Target Objective 3.5). Additionally, in December 2010, we launched the updated "Made in Florida" website on which we have provided more online vehicles as suggested by the outcomes of the 2009 stakeholder survey to connect industry and students (Target Objective 3.1). This recent release also provides the needed platform for FLATE to highlight the unique features of each of the ET Degree colleges' labs and programs (Target Objective 3.4). FLATE significantly and successfully expanded its "Made in Florida" summer camps in 2010 (Target Objective 3.10). We also began developing the first elements of our MIF outreach tool kit, in the form of a "Robotics Camp Survival Guide" and Best practice tri-fold for these camps (Target Objective 3.7). FLATE reinitiated activities (Objective 3.6) with several of the RMA's and looks forward to continuing these efforts to bring them directly in contact with their local schools to help address the second crucial component for Goal 2's success as discussed above.

Recognized as a continuing strength by the NVC in 2009, the *Made in Florida* (MIF) campaign has now reached over 50,000 high school and middle school students through industry tours and presentations, inline and distributed videos, summer camps, multimedia resources, and advertorials through Florida Trend's *NEXT*. In compliance with our Sterling continues improvement plan and capitalizing on our bi-annual Sterling review identified opportunity, data is now has been collected for continuous evaluation, comparatively as well as cumulatively, in order to more effectively measure and evaluate MIF activity investment, impact, and scale up success. In alliance with our statewide vision, mission, and NVC directive, FLATE will add strategic personnel for outreach in the south Florida region in 2011. Tangent to this specific regional focus, FLATE staff continue to network in the other regions of Florida through meetings, direct interactions with Regional Manufacturing Associations, and engaging colleges, schools, and school districts in various collaboration and partnership opportunities. A few of these activities are highlighted below.

In 2009, the NVC provided two excellent suggestions related to Goal 3; A *Champions of Industry* program and a *Manufacturing Expo* day. In response, the FLATE Industry Honor Roll has been structured and is part of new FLATE *Made in Florida* web site. Again, addressing the second crucial component for Goal 2's success, a preliminary survey indicates a low number of schools reporting industry partners. Bringing industry closer to middle and high schools is a high priority for FLATE for 2011 and the FLATE Industry Honor Roll will be used as one avenue to accomplish this task. FLATE's initial effort in this outreach activity will be to establish baseline information and then facilitate the development of these partnerships and capturing them for dissemination as best practices.

In 2010, The Manufacturers Association of Florida's annual Summit included a Manufacturers Exhibit and Global Marketplace supported by approximately 40 people representing over 20 manufacturers. Capitalizing on this MAF Summit event popularity, FLATE will initially explore using this MAF activity as the foundation for a more developed NVC inspired Manufacturing Expo. Other options under consideration include a separate event associated with an annual workforce education related conference and/or develop this idea with the Museum of Science and Industry (MOSI) in association with school district STEM Institutes. FLATE's regular participation in similar activities including the USF Engineering Expo and presentations at large conference venues such as the ASEE Annual Conference, HiTEC Conference, NCPN Annual Conference, STEM Tech Conference continue to build our background experience and expertise in partnering with an appropriate organization to develop and stage such events.

In summary, in 2010 FLATE promoted its "Made in Florida" manufacturing video (Target Objective 3.5) and demonstrate its use in STEM curriculum (focusing on the T & E), provides design challenges to promote STEM curriculum (Target Objective 3.2) as well as showcase the community colleges exemplary training facilities (Target Objective 3.4) at events this year to over 50 educators including STEM Institute Teacher Workshop, STEM Summer Camp for Teachers, and FLATE's Summer Robotics camps. The events also showcased FLATE's eight middle school challenges, seven high challenges, and nine interactive career pathways (Target Objective 3.3). All of these are available online and exceed FLATE's targeted objectives for these two products. FLATE will continue its outreach activities to add industry-relevant depth and breadth to manufacturing related curriculum, provide a guide to college, career, and technical education as well as career planning, and promote a positive concept of careers in high technology manufacturing in Florida.

RMAs and other Organization Partners:

FLATE's objectives related to IAC statewide representation (Target Objective 3.8) and increased participation in its awards program (Target Objective 3.9) require FLATE's active involvement with Regional Manufacturing Associations and other partners. FLATE is working with the South Florida Manufactures Association and the Marion Regional Manufacturers Association to develop those needed connections. In addition, FLATE now has a leadership role in the Bay Area Manufacturing Association Education Committee and has partnered with the Manufacturers Association of Central Florida's Manufacturing Activity Book project.

Web presence:

In addition to recognition for "good work" it is important to be "out there" as much as possible with our own presence as well as links from critical partner organizations. FLATE expanded its presence on the world wide web. New 2010 multiple listings for FLATE as a resource for STEM curriculum can be found on the www.STEMflorida.net and a new 2010 listing under Florida Industry Clusters/Manufacturing on the Enterprise Florida site at <http://www.eflorida.com/>. FLATE recognizes the importance of this virtual presence in today's environment and a 2011 target to determine the feasibility of a Virtual Factory learning platform is currently underway with 2 partner NSF ATE Centers in Maryland and Connecticut.

GOAL 4: *To present professional development opportunities for technical faculty to develop, refine or certify their knowledge base within manufacturing and/or its related enabling technologies and educational pedagogies.*

During 2010, FLATE focused resources to increase its impact relative to the professional development of faculty aligned with the development of a highly skilled workforce. These resources were directed to conducting professional development sessions at the bi-annual Engineering Technology Forums (Target Objective 4.1), to scaling up dissemination of Toothpick Factory soft skills training (Target Objective 4.2), to implementing MSSC Certificate training (Objective 4.3), and to increasing professional development interactions with secondary teachers (Target Objective 4.4). FLATE also supported professional development at technical conferences including HiTEC and at other events throughout 2010 (Objective 4.5). FLATE offered six fellowships for educators to attend the July 2010 Hi-TEC conference in Orlando this year and partially supported over 40 other educators to attend. The fellowships specifically included structure and proscribed activities to enhance professional development opportunities. Assessment measures for these activities are being refined to help us increase activity effectiveness.

Professional development workshops independent of the E.T. Forum included MSSC Certification mapping to curriculum (April 2010) and curriculum outcomes terminology (Sept. 2010) workshops. Workshops continue to focus on alignment of courses, frameworks, and external standards (Target Objective 2.2) to ensure maximum support for industry and their needs. Details are provided in the NVC Information Binder. FLATE continues to help recruit relevant faculty for MSSC training. In 2010, Dr. A. Anzalone (ET program director and HCC faculty) and Ms. A. Goulde-Choquette (SCF-Manatee) attended training and will be taking the MSSC tests within the next few months or have taken them already. The Toothpick Factory soft skills communication experiences workshop continues to gather attention. In 2010, FLATE offered over 6 professional development workshops for this product. This fall FLATE received an order from the New Hampshire Dept. of Education for 10 kits that were distributed to the high school computer integrated manufacturing faculty. We will follow up on this effort.

FLATE's 2009 Stakeholder survey indicated opportunities for FLATE to provide professional development to teachers and in 2010, FLATE responded by expanding the scope and range of professional development activities to Florida K-20 educators focused on integrating STEM into everyday classroom curriculum through a high-tech manufacturing perspective. FLATE partnered with the School Board of Hillsborough County to deliver professional development workshops to teachers in STEM academies in Hillsborough County to K-12 (Target Objective 4.7). These requested activities were scheduled on defined district Professional Development Days. Tangent to these direct professional development activity, FLATE recruits and supports teachers each summer in a high-tech industry setting through the statewide Teacher Quest program which supports K-12 teachers in summer externships in STEM industries (Target Objective 4.6). To date, 25 teachers have been placed in manufacturing companies during the summer in Florida and FLATE continues to support 1-2 teachers in house each year to develop and instruct the student robotic camps. FLATE also offered its first "Summer Camp" for K-12

teachers (Target Objective 4.7). 17 teachers attended this week-long professional development experience that included a small teacher stipend and allows teachers to investigate options for integrating the “T & E” component in STEM curriculum into their classroom curriculum. FLATE also partnered with the University of South Florida’s chapter of the National Academy of Inventors to present a Young Inventors Workshop for 50 K-12 teachers in November 2010. The workshop prepared teachers to encourage their student to enter the student annual student inventor’s competition and subsequently coach these students as to the rigor of this competition.



NATIONAL VISING COMMITTEE

February 3- 4, 2011

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