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July 1, 2009

Dr. Marilyn Barger
Executive Director
Florida Advanced Technological Education Center for Manufacturing (FLATE)

Dear Dr. Barger:

As the Outside Evaluator, I have completed the FLATE Annual Evaluation Report for the year ending

April 30, 2009. It is enclosed with supplemental appendices. Please contact me with any questions.

Sincerely,

Phil Centonze
Co-Founder and Managing Partner

Enclosures:
Evaluation report – April 30, 2009 Pages 1 through 31
Appendices (begin on Page 32)

- Appendix A – Florida Sterling Management Model
- Appendix B – FLATE Vision and Mission
- Appendix C – FLATE Guiding Principles
- Append ix D - FLATE - Organizational Profile
- Appendix E – Strategic Hierarchy
- Appendix F – Effectiveness Measures
- Appendix G – Objective Timeline
- Appendix H – Data request letter to Florida DOE of March 4, 2009

Evaluation Report—April 30, 2009

I. Evaluation Plan Introduction

This evaluation report is organized in three parts. Part I is the background and overview of the FLATE (Florida Advanced Technological Education Center) evaluation plan. Part II includes effectiveness results measures relating, in three sections, to the three overall organizational effectiveness strategies: Curriculum Development, Outreach and Recruitment, and Professional Development, that speak directly to the National Science Foundation's (NSF) expectations for FLATE. A fourth section in Part II includes other elements of FLATE's performance in key areas. Part III summarizes the results and makes some recommendations for improvement

II. Background and Overview

FLATE (Florida Advanced Technological Education Center) has implemented an organization evaluation plan based on the Florida Sterling Criteria for Performance Excellence. The Florida Sterling is an industry-recognized model for business management that is based on the Malcolm Baldrige national model. The Florida Sterling model provides a framework and an assessment tool for understanding organizational strengths and opportunities for improvement in the organizational leadership/management system. Refer to Appendix A for more information about the Sterling Model and Criteria. The FLATE Evaluation Plan consists of 2 interdependent levels – various types of data to validate its performance with respect to its past, present, and future goals and objectives and an overarching, strategically-oriented plan and process that ensure continuous effort in improvement of processes and products.

FLATE's evaluation model combines the evaluation plan elements required by the National Science Foundation (NSF) with the quality-driven Sterling/Baldrige management model familiar to Florida manufacturers. Infusing this Sterling/Baldrige management model into FLATE's organizational operation is extremely important to FLATE. The evaluation plan serves two primary purposes. First, to collect evaluation data to measure the positive impact on goals of the

NSF Advanced Technological Education (ATE) Program including science, technology, engineering and mathematics (STEM) education and workforce creation, as well as the technical skills for STEM technicians and educators. Evaluation of FLATE performance includes specific results relating to improving technological education programs, building collaborations within industry and other educators, professional development, and creating educational materials. The second purpose is to satisfy FLATE's industry partners and stakeholders as to FLATE's performance and success. The FLATE evaluation plan and results assures stakeholders that FLATE operates in manner that is consistent with industry-recognized best business management practices.

Another evaluator was originally involved in the first two fiscal years of this Center's operation. FLATE's first evaluation plan did not produce useable results to adequately measure and guide overall effectiveness of the organization. Consequently, the Leadership Team engaged a new evaluator in 2007. The development and implementation of a new Evaluation Plan began in 2007, and was presented to the FLATE National Visiting Committee (NVC) during its January 2008 meeting.

The Evaluation Plan in Figure 1, has three phases that are annually cyclical. Continuous improvement of the plan, as well as improvement of the results inherent in the plan, are systematic and integrated into the cyclical process itself. Each Phase of the plan focuses on particular activities, but in practice, activi-

Figure 1 – FLATE Evaluation Plan

ties in each Phase virtually blend into the next. In 2008, the first cycle through all three phases of the plan was accomplished.

Phase I

In the first phase of the Evaluation Plan, (Figure 1) the organizational structure of FLATE is established and the direction for success is set. The foundation for this organization and structure was laid during FLATE's planning grant stage and included monthly meeting with manufacturers as part of the development team. FLATE's operational culture is now totally governed by these Phase I elements. The organization's Vision, Mission, and Guiding Principles (Appendices B and C) are the bases for FLATE's character and overall decision-making. The six Guiding Principles serve as core values in reasoning, action, and organizational decisions. The Guiding Principles are used as a filter through which projects and initiatives are analyzed to determine whether time and other resources should be invested. The FLATE Vision and Mission are set against the background of the principles; the Vision is the future view of the FLATE organization from the stakeholders' perspective; the Mission identifies now what FLATE does and for whom FLATE does it.

With the directional and cultural groundwork in place, the next focus was to characterize FLATE's baseline organizational state. This would then allow FLATE to determine what strategies and initiatives should be implemented to help FLATE abide by its Guiding Principles, and to achieve the Vision and Mission. This is done through the development of the FLATE Organizational Profile (Appendix D) and the Strategic Hierarchy (Appendix E).

The Organizational Profile defines the challenges faced and the key internal and external environmental influences on operations. The profile describes the internal working environment and that of the host institution. It also defines the external environment in terms of partners, customers, and stakeholders, as well as the relationships with them. In the Profile document are described organizational strategic challenges and advantages, and key success factors in the competitive marketplace. The initial Organizational Profile was developed with input and participa-

tion from stakeholders and the entire FLATE staff team. It is reviewed annually by the FLATE team, and modified as necessary. As developed, the Profile is shared with FLATE's industry partners, and is used as an instrument to earn stakeholder confidence.

The approach used to move into a successful future is illustrated in the FLATE Strategic Hierarchy (Appendix E). At the highest level are overall organizational effectiveness strategies and goals:

- Effectiveness of Curriculum Efforts
    - Goal: 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.
    - Sixteen target objectives and 17 effectiveness measures
- Effectiveness of Outreach and Recruitment Efforts
    - Goal: 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
    - Eight target objectives and 10 effectiveness measures
- Effectiveness of Professional Development Efforts
    - Goal: 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.
    - Ten target objectives and four effectiveness measures

These are further linked to program level goals, objectives, and specific short- and long-term actions, which all contribute to accomplishing FLATE's Vision and Mission. Day-to-day activities are guided through linkage with the Strategic Hierarchy.

Phase II

In the second phase of the evaluation plan, effectiveness measures (Figures 2, 3, and 4) were developed to align with the strategic hierarchy and subsequent goals and objectives, in order to monitor FLATE's progress.

The specific evaluation data required to validate implementation are defined by the Strategic Hierarchy and tracked in the Effectiveness Measures Tables (Appendix F). The tables specify the parameters to be measured, the source of the data, and method of collection, as well as the location of the particular data file in FLATE's network server. The data that supports the achievement of the Effectiveness Measurement activities are defined in the Effectiveness Measurements Table and in Appendix E.

Program Level Focus	Figure 2 - Effectiveness Measures: Curriculum Development			
Curriculum Development	CE-1	Community Colleges - % of implementations of the ET**** degree in existing programs	CE-2	Community Colleges - % increase in students participating
	CE-3	Community Colleges - # of new programs	CE-4	Community Colleges - # of new degree specializations & CCC's
	CE-5	High Schools (HS) - % adopting Automation and Robotics framework	CE-6	High Schools - % increase in students participating in Automation and Robotics Adoption
	CE-7	High Schools - % of HS integrating MSSC** standard in existing non-FLATE framework	CE-8	High Schools - % increase in students participating in MSSC standard integration
	CE-9	PSAVs* - % integrating MSSC standard in existing non-FLATE framework	CE-10	PSAVs- % increase in students Participating in MSSC** standard integration
	CE-11	Community Colleges - # of college level completers (through various sources)	CE-12	High Schools - # of HS level completers (through various sources)
	CE-13	# of other programs asking for curriculum model as a best practice	CE-14	# of students using Made in Florida Learning Challenges
	CE-15	# of students taught soft skills module	CE-16	# of schools adopting Courses developed for CC partners
	CE-17	# of requested MSSC CPT*** based articulation requests at ET Degree Schools		

***PSAV**—Post Secondary Adult Vocational school ****MSSC**—Manufacturing Skill Standards Council
*****CPT**—Certified Production Technician ****** ET**— Engineering Technology

Program Level Focus	Figure 3 – Effectiveness Measures: Outreach and Recruitment			
Outreach & Recruitment	OE-1	Florida Trend Magazine's NEXT issue (manufacturing advertorial) - # of contacts by category	OE-2	Florida Trend Magazine's NEXT (manufacturing advertorial) - # of qualified leads forwarded to postsecondary schools
	OE-3	Florida Trend Magazine's NEXT (manufacturing advertorial) - # distributed career planning hand-outs	OE-4	Tour Survey results (re: perceptions of attendees)
	OE-5	Tour Survey results (re: perceptions of industry) (modify this by identifying responses to specific selected questions)	OE-6	# hits on the Made-in-Florida (MIF) website
	OE-7	# MIF DVDs distributed & # of MIF views on the website	OE-8	# hits on the FLATE website
	OE-9	$ value of industry cash contribution to FLATE's outreach	OE-10	$ value of industry in-kind contribution to FLATE's outreach effort
	OE-11	# of Moderated Sessions, # of Attendees	OE-12	Annual # of Nominees and # of Awardees
	OE-13	# of hits on MIF Scholarship page	OE-14	# of students in Summer Camps Evaluation data

Program Level Focus	Figure 4 – Effectiveness Measures: Professional Development			
Professional Development	PDE-1	Level 1 usefulness/ applicability measures collected at professional development events & training sessions	PDE-2	# participant contact hours in workshops/ training
	PDE-3	# participant contact hours in ET Forum	PDE-4	Faculty self-evaluation of performance changes in the workplace as a result of attendance at professional development events/training sessions (not currently collected)

Phase III

The third phase is comprised of assessment and evaluation. Here, after analysis of the data collected in the measurement plan and in conjunction with evaluation of the Objective Timelines (Appendix G), a determination is made whether FLATE is on target to accomplish its strategies, goals, and objectives. In addition, a self-assessment was conducted to evaluate leadership, management, and business systems and practices. The self-assessment was accomplished through interviews with and input from all members of the FLATE Leadership Team. This part of the evaluation was based on the Florida Sterling/Baldrige Criteria for Organizational Performance Excellence (a Malcolm Baldrige-based model). This model assesses performance in each of these seven categories: 1) Leadership, 2) Planning, 3) Customers and Markets, 4) Measurement, Analysis, and Knowledge Management, 5) Workforce, 6) Process Management, and 7) Performance Results. The Sterling/Baldrige self-assessment has identified organizational strengths and opportunities for improvement.

Documentation of the third phase includes FLATE's Objective Timelines, the Data Analysis Summary, and the Sterling/Baldrige self-assessment. The Objective Timelines are reviewed and revised, annually by the FLATE Leadership Team to adjust to current and changing internal and external factors. They are posted in the office complex reflecting progress towards achieving FLATE goals. The Data Analysis Summary provides important input for overall progress, as does the Sterling/Baldrige self-assessment.

The conclusion of the third phase marks the completion of FLATE's evaluation plan structure. It also initiates the iterative continuous improvement mode of the plan as FLATE personnel cycle their focus again into the first phase. The Sterling/Baldrige Assessment strengths and opportunities, combined with the data analysis of the effectiveness measures, and review of the Timelines, form the basis for required modifications and adjustments of FLATE's strategic direction and subsequent goals, objectives, actions, activities, and measures. Appropriate action plans are

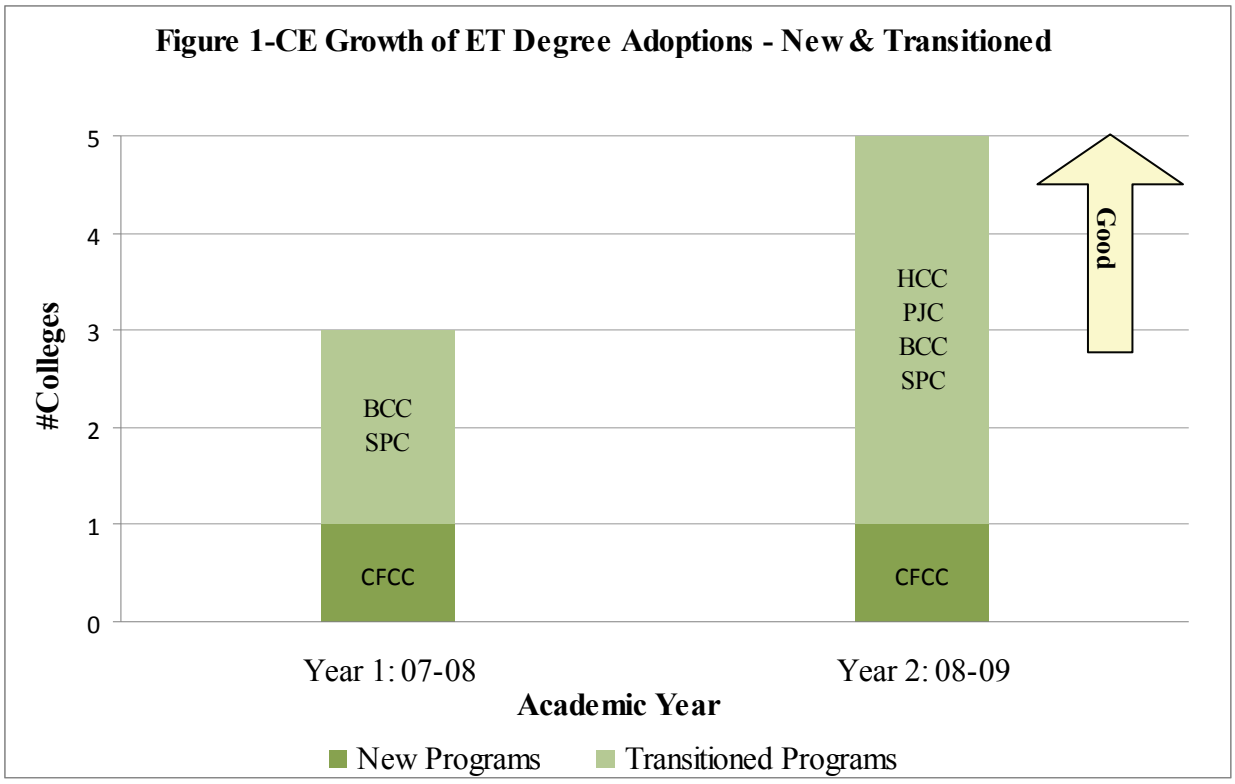
developed to improve FLATE's overall performance.

III. Operational Performance Results

Section A. Effectiveness of Curriculum Development Efforts:

An NSF expectation of its ATE Regional Centers is that a regional center engages multiple community colleges and focuses efforts on academic initiatives in partnership with industry, that address the technician workforce needs of employers specific to the region. FLATE has adhered to this approach with exemplary results for its efforts. FLATE has designed and developed and promoted degree and certificate programs for community colleges, especially the AS degree in Engineering Technology, and the secondary school curriculum framework, Learning Challenges, and more for high schools, and encouragement and support to build enrollment in these programs. Of special note is the statewide articulation agreement developed by FLATE as the Pathway for the Engineering Technology degree. The FLATE endeavor to create a single, overriding State-wide articulation agreement is particularly unique in that it developed a best practices model for the State of Florida and avoided the painstaking and time-consuming effort of negotiating individual articulation agreements between each of the 67 School Boards and each regional community college.

The first several charts indicate the historic lack of unified focus within the State's community college system and reflect on the long term effectiveness of curriculum development as related to implementation of FLATE's Engineering Technology degree program in community colleges around the State. Twenty-five colleges offer AS/AAS degrees related to Engineering Technologies (ET). These include Drafting and Design Technology, Electronics Engineering Technology, Electrical Power Technology, Manufacturing Technology, Simulations and Robotics Technology, Aerospace Technology, Industrial Management Technology, Chemical Technology, Biomedical Engineering Technology, and Computer Integrated Manufacturing. Schools that transitioned to the FLATE-initiated new Engineering Technology degree are eliminating and/or closing out old technological degree programs.



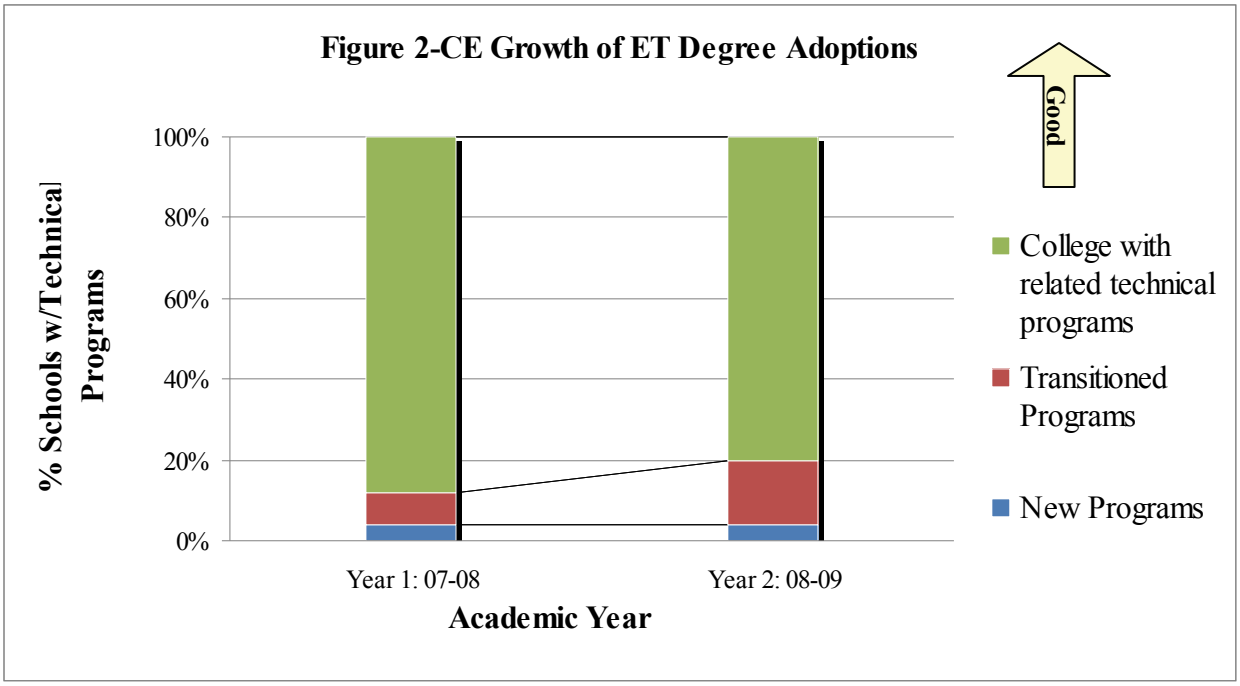


Figure 1-CE shows five colleges with ET degrees, which is, significantly, 20% of all Florida community colleges that offer related programs, achieved in just 2 years. Figure 2-CE shows the growth of implementations from 2007 into 2009, again a significant impact. In 2 years 20%

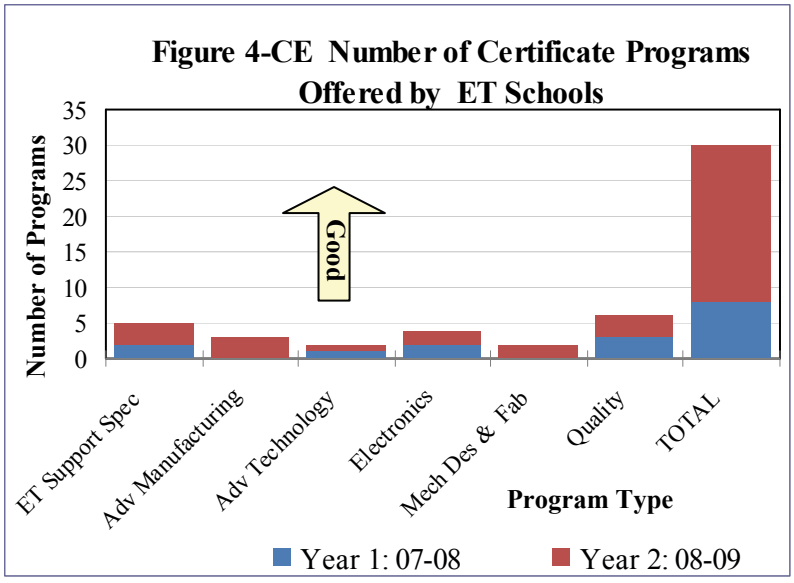
of schools with engineering technology-related degrees have transitioned and adopted the Engineering Technology (ET) degree. The data show that the number of transitioned schools has doubled in this period. These two figures address Effectiveness measures CE-1 and CE-3.

As an additional effectiveness measure, results collected indicate that these same five community colleges have adopted and use a number of distinct courses to fulfill the ET Core. No figure is reported for this result.

Figures 3-CE and 4-CE , addressing Effectiveness Measure CE-4, show results involving implementation of certificate programs. Figure 3-CE shows the various specializations offered by the community colleges. In Figure 4-CE, results are displayed noting that certificate programs have been implemented by three community colleges in year one (indicated by the red portions of the bars) and a total of the five Community Colleges, all having also adopted the ET degree, in year two (indicated by the blue plus the red portions of the bars). These results indicate a five fold increase in total certificate programs in year two over year one. This figure also shows that two new certificate programs were offered in year two. The importance of the certificate programs is that they are used by community college to note completion points in the career pathway.

Figure 3-CE – Specializations Adopted by ET Schools

	Year 1: 07-08	Year 2: 08-09
Advanced Manufacturing	0	1
Advanced Technology	1	0
Electronics	2	0
Mechanical Design & Fabrication	0	1
Quality	2	0
TOTAL	**5**	**7**

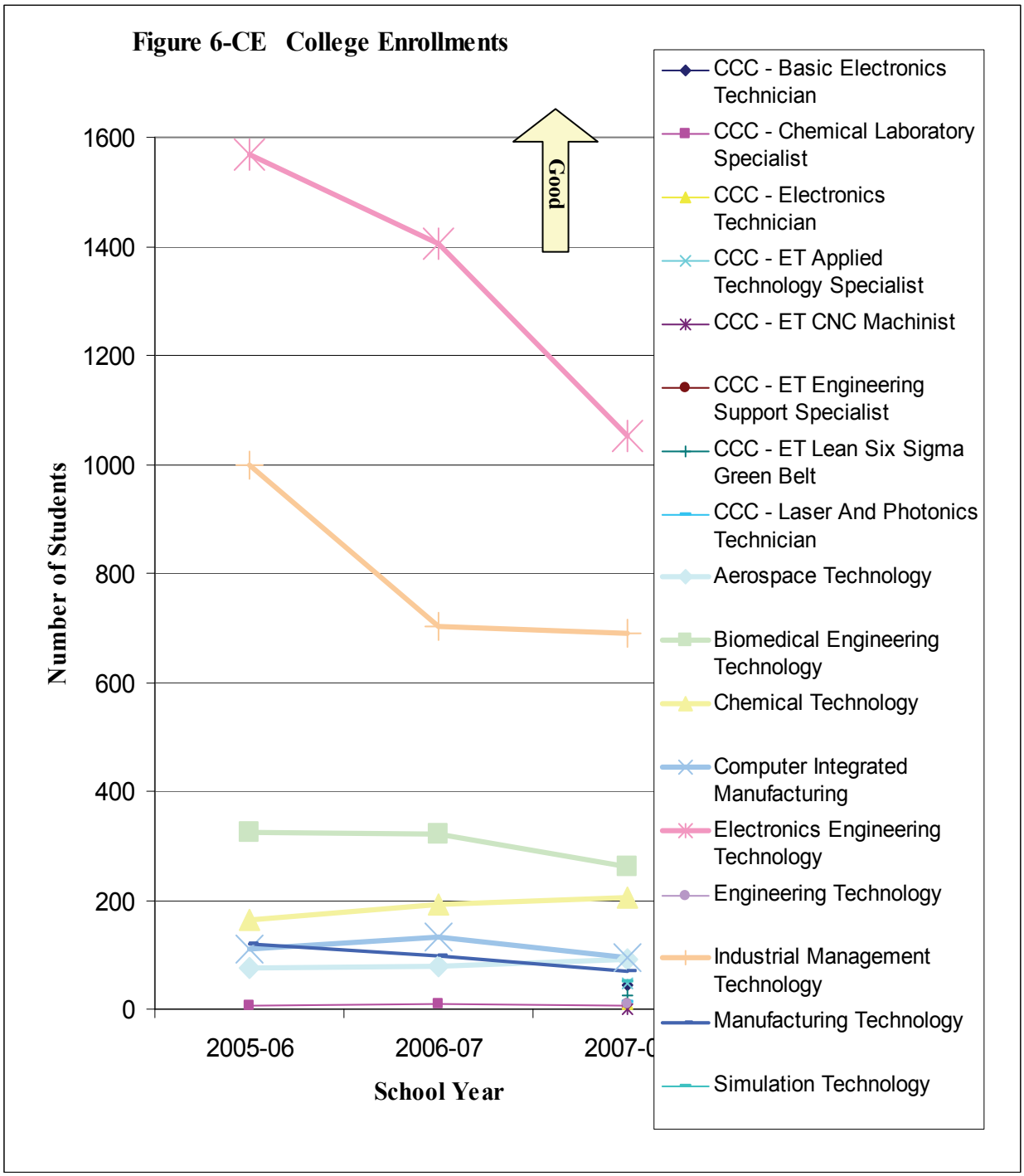


These data in Figures 3-CE and 4-CE are not normalized. The existence of Community College Certificates (CCC) is driven by individual colleges as they try to meet their local community workforce needs. The data in figures 3-CE and 4-CE demonstrate the breadth flexibility of the AS Engineering Technology. By illustrating the various offerings at different colleges. While these results indicate a positive impact by the effectiveness of FLATE curriculum development efforts, Figures 3-CE and 4-CE support or are ancillary measures to the primary Curriculum Effectiveness measures discussed earlier.

Enrollment data associated with manufacturing education programs in High Schools, Post-Secondary Adult Vocational schools, and Community Colleges are related to Effectiveness Measures CE-2, CE-6, CE-8, CE-10, CE-11, CE-12. To ensure complete, consistent, and thor-

Figure 5-CE Enrollment, Degrees/Certificates Awarded 2005 through 2008

	Enrolled			AS/AAS & CCC Awarded		
	2005-06	2006-07	2007-08	2005-06	2006-07	2007-08
AS/AAS Engineering Technology			9			0
CCC - ET Applied Technology Specialist			46			25
CCC - ET CNC Machinist			1			1
CCC - ET Engineering Support Specialist			9			5
CCC - ET Lean Six Sigma Green Belt			25			26
CCC - ET Six Sigma Black Belt			22			33
AS/AAS Electronics Engineering Tech	1569	1406	1053	90	86	65
CCC - Basic Electronics Technician			44			92
CCC - Electronics Technician			11			0
CCC - Laser And Photonics Technician			13			8
AS/AAS Chemical Technology	165	192	206	12	9	17
CCC - Chemical Laboratory Specialist	5	9	7	2	5	2
AS/AAS Aerospace Technology	76	80	90	21	10	6
AS/AAS Biomedical Engineering Tech	323	322	261	17	28	24
AS/AAS Computer Integrated Mfg	110	132	96	3	28	7
AS/AAS Industrial Management Tech	998	703	690	231	192	239
AS/AAS Manufacturing Technology	121	99	70	1	7	1
AS/AAS Simulation Technology			50			2
	3367	**2943**	**2703**	**377**	**365**	**553**



ough data collection across state institutions, FLATE has requested and received data from the Florida Department of Education (DOE). Please see Appendix H, the request to and initial

response from the DOE. Enrollment data reported in several following charts reflect the data provided by DOE.

Figures 5-CE and 8-CE contains data addressing Effectiveness Measures CE-2 and CE-11. The data in Figure 5-CE describe, first, trends in enrollment in the Engineering technology framework-related programs in Community Colleges, and, second, the number of certificates awarded in specific programs from 2005 through 2008. Charts depicted these data are seen in Figures 6-CE and 7-CE. The data in Figure 8-CE are the number of Degree Completions at Community Colleges in the ET and related programs. These are shown in Figure 9-CE.

The following figures address Effectiveness Measures CE-7, CE-8, and CE-12, curriculum effectiveness measures related to secondary school technology programs. The data in Figure 10-CE relate to these currently implemented High School Engineering Technology-related programs: Materials and Processes Technology, Technology Systems, Engineering Technology,

Figure 7-CE CCCs Awarded

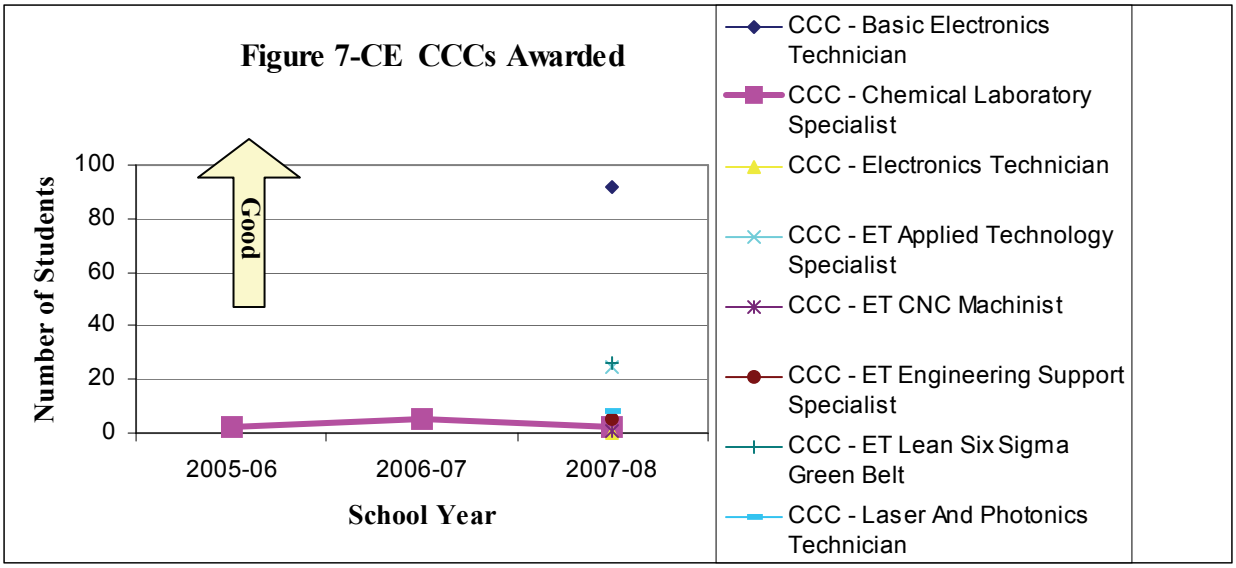


Figure 8-CE College Degree Completions

	2005-06	2006-07	2007-08
Aerospace Technology	21	10	6
Biomedical Engineering Technology	17	28	24
Chemical Technology	12	9	17
Computer Integrated Manufacturing	3	28	7
Electronics Engineering Technology	90	86	65
Engineering Technology			0
Industrial Management Technology	231	192	239
Manufacturing Technology	1	7	1
Simulation Technology			2
	375	**360**	**361**

Electronics Technology, Production Technology, Engineering Technology, Engineering Assisting, and Industrial Machinery Maintenance. Figure 10-CE shows total enrollment in secondary school technology programs broken out by gender and race. In addition to overall increased enrollment during the last three academic years, the data show significant increases in enrollment of female, black, and Hispanic students as well. The favorable trend for total enrollment are depicted in Figure 11-CE.

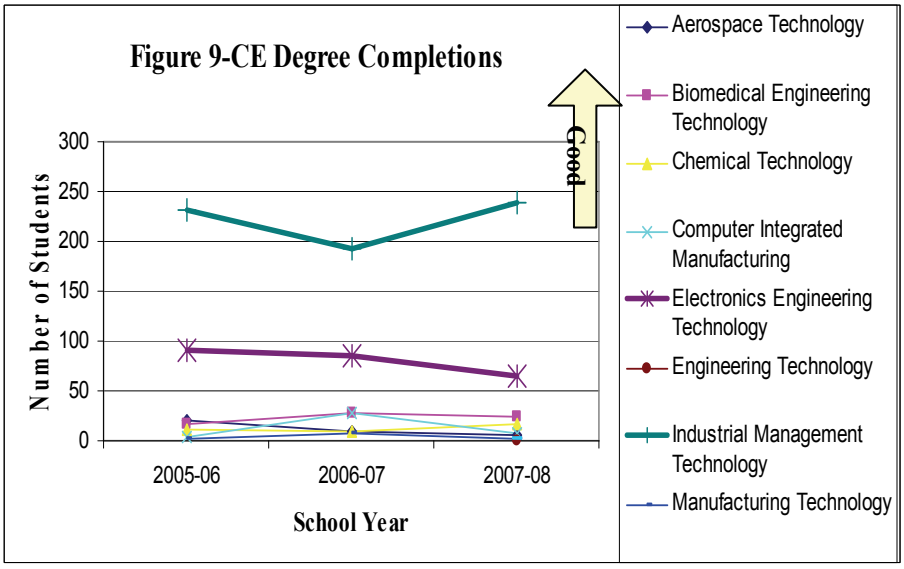
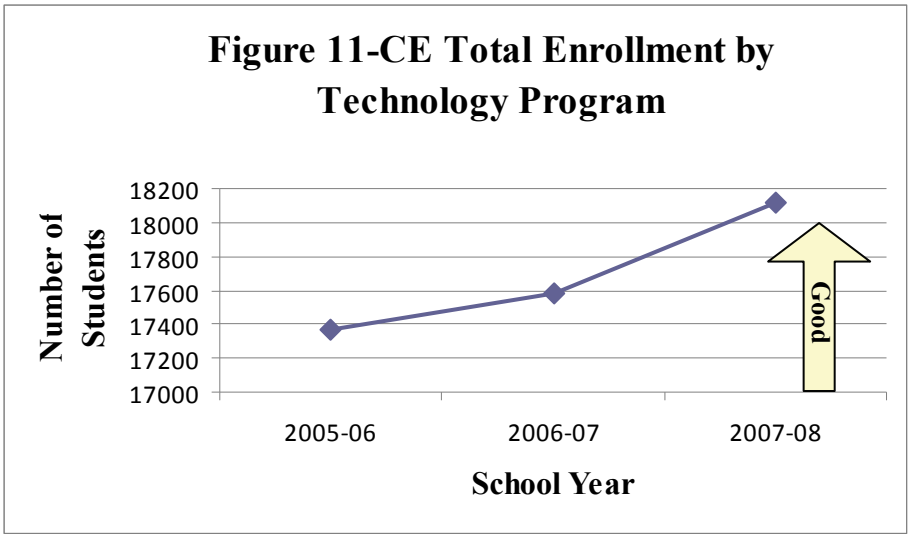


Figure 10-CE Total Student Enrollment by Technology Program

			Gender		Race					
School Year	# of Prgrms	Total Enrollmnt	Male	Female	White	Black	Hispanic	Native Amer	Asian	Multi Racial
2005-06	562	17372	14942	2430	10378	2651	3535	64	445	299
2006-07	521	17581	14625	2956	9418	2650	4677	65	411	360
2007-08	548	18111	15291	2820	9552	2870	4777	63	460	389

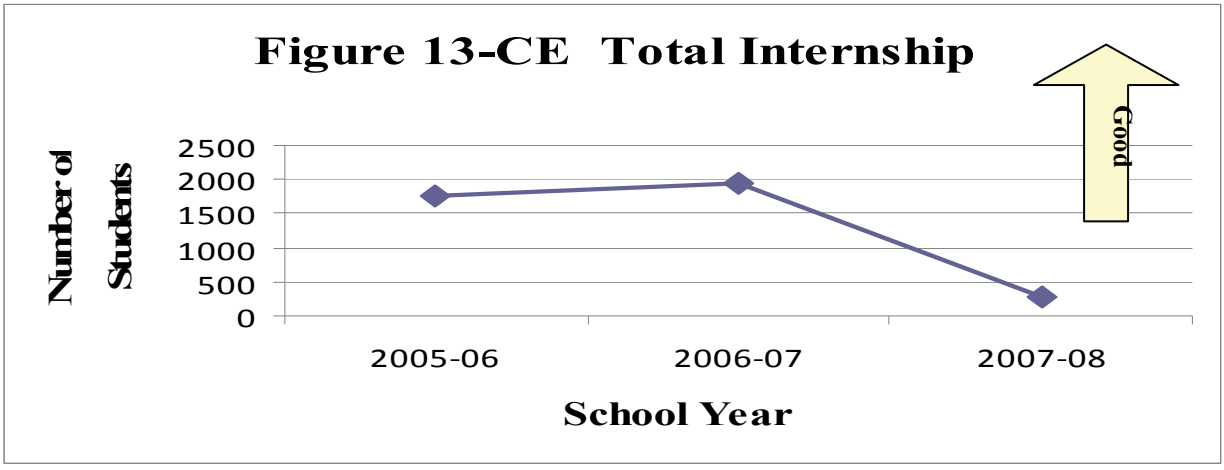
Figures 12-CE and 13-CE describe and depict data related to internship participation by secondary school students by technology program. In these case, the trends are unfavorable in all demographics.



The data and chart shown in Figures 14-CE and 15-CE denote total graduates by technology program. The data reveal positive trends in graduates of every demographic over the last three academic years.

Figure 12-CE Internship Participants by Technology Program

		Gender		Race					
School Year	Total Internship	Male	Female	White	Black	Hispanic	Native Amer	Asian	Multi Racial
2005-06	1752	1358	394	382	308	993	4	43	22
2006-07	1951	1478	473	411	216	1242	4	49	29
2007-08	288	238	50	153	48	52	0	25	10

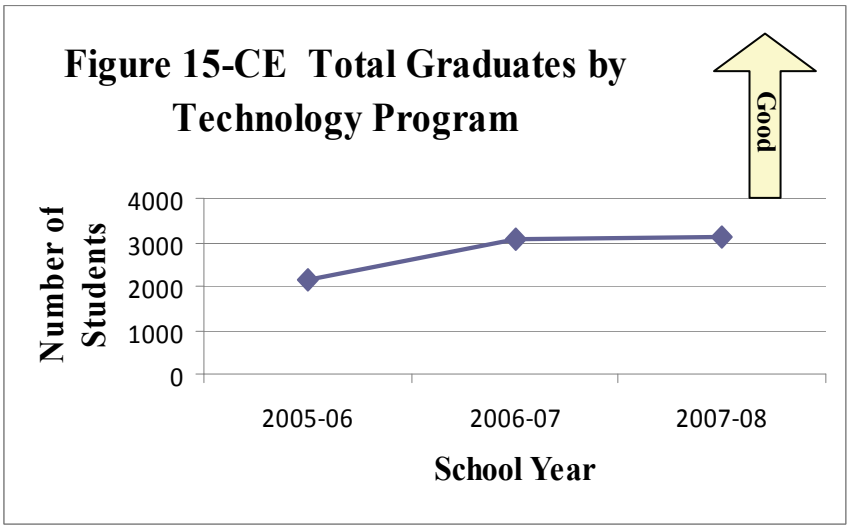


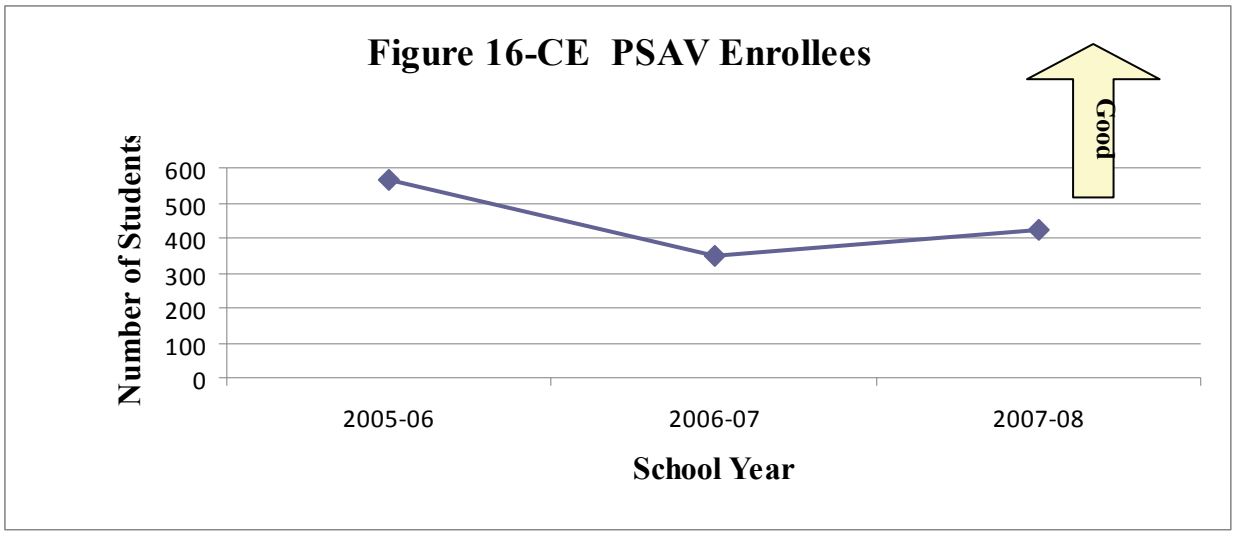
Figures 16-CE and 17-CE display data related to the number of enrollees and the number of completers in PSAV programs during the last three academic years. These data show unfavor-

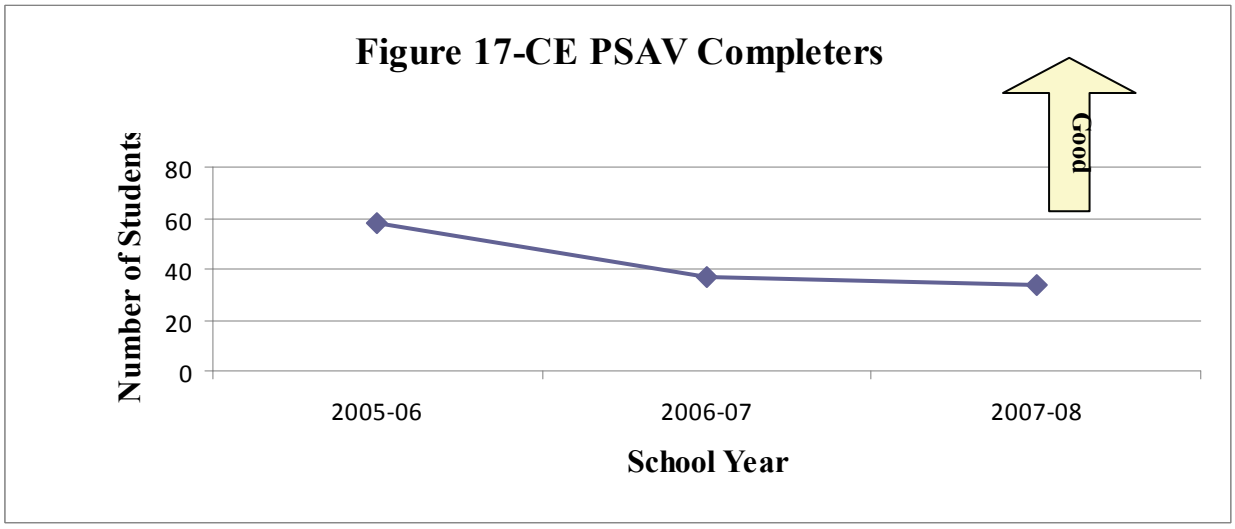
Figure 14-CE Graduates by Technology Program

		Gender		Race					
School Year	Total Grads	Male	Female	White	Black	Hispanic	Native Amer	Asian	Multi Racial
2005-06	2137	1806	331	1498	266	273	10	64	26
2006-07	3079	2515	564	1653	388	901	10	82	45
2007-08	3114	2530	584	1645	384	939	16	78	52

able trends in both measures. Due to the decline in enrollees and completers, FLATE devised an implementation plan to integrate the Manufacturing Skills Standards Council (MSSC) standard curriculum into PSAV non-FLATE frameworks. The MSSC implementation has begun in the







current year. Therefore no data is yet available to directly address curriculum effectiveness measures related to vocational/technical schools, effectiveness Measures CE-9, and CE-10.

Several other favorable results measures, addressing Effectiveness Measures CE-13, CE-14, CE -15, CE-16, and CE-17, are not shown here. These include: the number of other ATE programs asking for the FLATE curriculum model as a best practice, the number of students using FLATE's "Made in Florida" Learning Challenges, the number of students using the FLATE soft skills module, and the number of schools using FLATE courses developed for community college partners, and MSSC related measure CE-17 . Data related to these results measures are primarily activity level measures and are not as high a priority as the effectiveness measures reported elsewhere in this report.

No Data is available for Effectiveness Measures CE-5 and CE-6 because the Automation and Robotics Framework is just being implemented in the 2009-2010 academic year.

Section B. Effectiveness of Outreach and Recruitment:

As reported by the FLATE (National Visiting Committee) NVC, FLATE continues its exemplary outreach to introduce modern manufacturing to secondary students and the community through its "Made in Florida" campaign. This campaign is multifaceted and includes videos, student and teacher industry plant tours, industry-based learning challenges, an industry sponsored career guidance advertorial, summer robotic camps, and a student-friendly website. In addition, FLATE has begun to utilize social networking (MySpace, Facebook, YouTube and TeacherTube) and sponsored and partnered with FIRST Robotics, SkillsUSA and Technology Student Association competitions to attract the attention of the current generation of career and technical education entrants. Additional aspects of the outreach campaign include "roll out" events that are organized by local and regional economic development organizations in conjunction with their partner school district, workforce boards and regional manufacturers associations.

For the previous three academic years, industry has sponsored Made in Florida "advertorials" in

the *Florida Trend* NEXT magazine. This career guidance magazine is published annually by Florida's leading business magazine Florida Trend, and 730,000 copies are distributed high schools statewide. Figures 1-OE, 2- OE, and 3-OE, addressing Effectiveness Measures OE-1, OE-2, and OE-3, present the number of self directed student requests for

Figure 1-OE Student Inquiries from the NEXT Advertorial

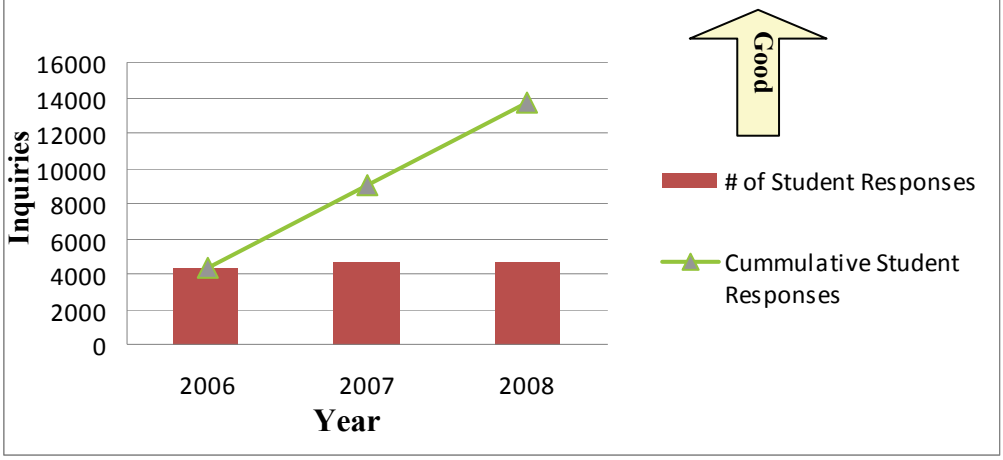


Figure 2-OE Response rate and materials sent				
Year	# of Student Responses	# of Students Responded To	Response Rate	Information Sent in Response
2006	4360	2580	59%	Community College Program Map; Technical College Program Map; Job Journey (wages); Florida Manufacturers; 2006 NEXT Advertorial; In Demand Magazine Article on Robotics-Advanced manufacturing; Degree Program Flier
2007	4698	3568	76%	Community College Program Map; Technical College Program Map; Job Journey (wages); Florida Manufacturers; 2007 NEXT Advertorial; In Demand Magazine Article on Robotics-Advanced manufacturing; Degree Program Flier; Made In Florida Website info.
2008	4683	4683	100%	Community College Program Map; Technical College Program Map; Job Journey (wages); Florida Manufacturers; 2008 NEXT Advertorial; In Demand Magazine Article on Robotics-Advanced manufacturing; Degree Program Flier; Made In Florida Website info; Social Networking Info.

Figure 3-OE Student Contacts to Postsecondary Partners		
Year	**# of Partners receiving student contact info.**	**Contacts forwarded by indicated area of interest**
2006	18	College/Career - 1178, Tech School - 330, Mfg - 224
2007	20	College/Career - 1451, Tech School - 287, Mfg - 306
2008	31	College/Career - 2191, Tech School - 519, Mfg - 1669

follow-up information for information about manufacturing careers and post-secondary educational options from each advertorial, the response rate and content provided by FLATE, and the number of student contacts forwarded to partner educational providers statewide.

The Florida industry tours through 2008 have touched 2,014 students, and $15,000 worth of NSF commitment has been leveraged by $72,000 contributed by schools and industry. Figures 4-OE and 5-OE show survey results related to industry and plant tours, collected at the end of each tour, conducted for students and other stakeholders. These address Effectiveness Measures

Figure 4-OE Tour Survey Results (re: perceptions of attendees)

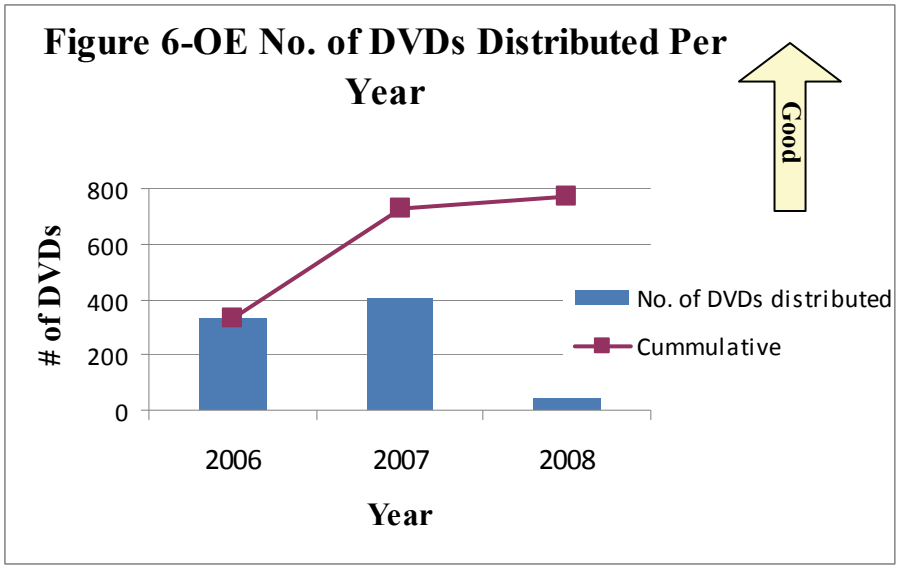
Questions	Year			
	2005	2006	2007	2008
No. 8	4.6	4.6	4.7	4.7
No. 9	4.5	4.8	4.7	4.9
No. 10	3.6	3.1	2.9	3.0
No. 13	4.4	3.6	3.4	3.5
No. 14	4.6	4.4	4.3	4.4
On scale of 1 to 5: 1 = Strongly Disagree (No) to 5 = Strongly Agree (Yes)				
#8: Do you understand the importance of mathematics and science at work?				
#9: Did this tour give you information about careers in manufacturing?				
#10: Were you considering a career in manufacturing before the tour?				
#13: Are you now considering a career in manufacturing or related technical industries?				
#14: Did the tour help you understand the use of math, science, and technology in industry?				

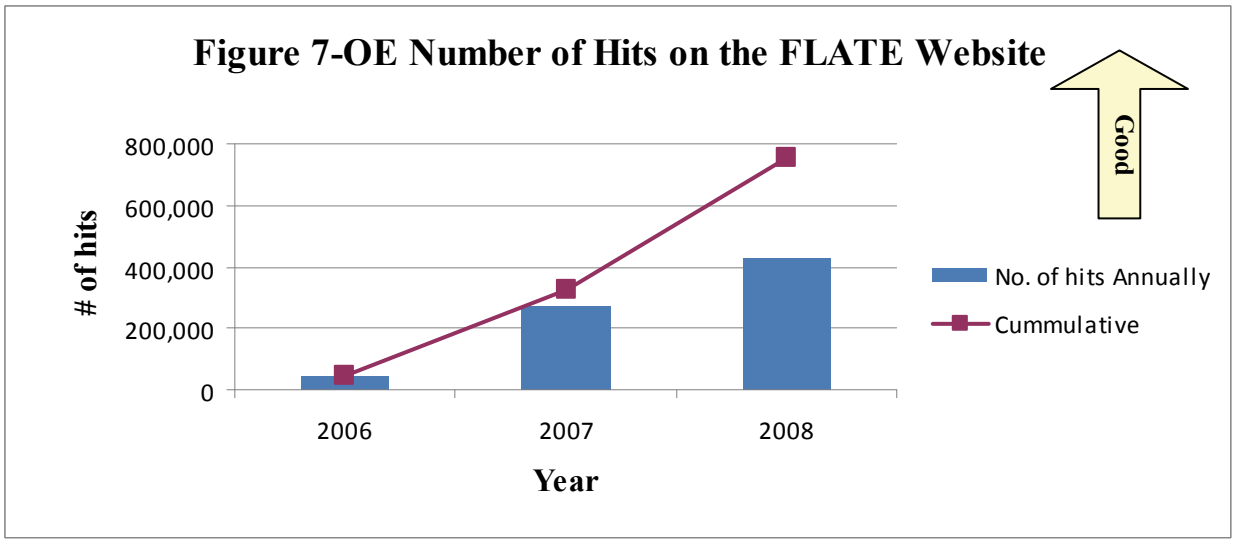
Figure 5-OE Tour Survey Results (re: Perceptions of Industry) 2007

Questions	Responses			
	Yes	Somewhat & for Q.4, Just Right	No	Total # of responses
No. 1	9	7	0	16
No. 4	0	16	0	16
No. 6	16	0	0	16
No. 8	13	3	0	16
No. 15	9	5	2	16
#1: Were the students on the tour engaged or interested?				
#4: Was the tour timeframe too long or too short?				
#6: Did the tour adequately represent your operations?				
#8: Do you feel that the tour was a good use of your company's time & resources?				
#15: Have you been to the FLATE outreach website (www.madeinflorida.org)?				

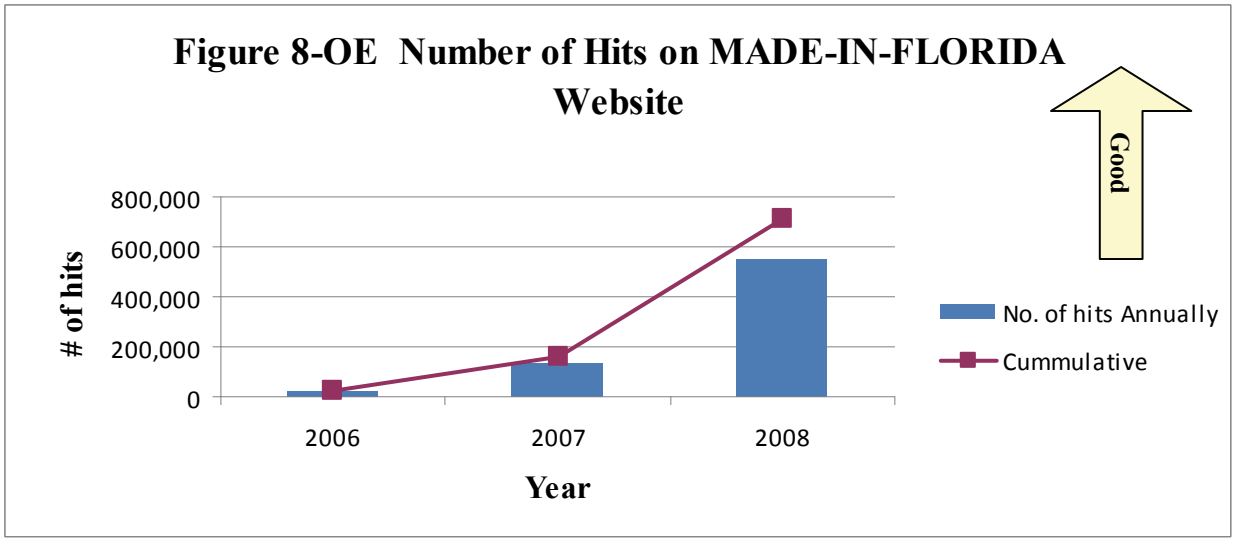
OE-4 and OE-5. Figure 4-OE shows the level of agreement, by attendees, with selected survey questions connected with their perceptions of the relevance of the tour and awareness of the importance of manufacturing skills. These data show consistent increase in the "before" and "after" perceptions of students (Questions #10 and #13) with regard to consideration of a career in manufacturing. Figure 5-OE reports data related to the industry partners conducting the tours. Results show the industry partners perceive the tours as a value-added activity.

The results reported in Figures 6-OE, 7-OE, and 8-OE, addressing Effectiveness Measures OE-6, OE-7, and OE-8, indicate a favorable impact through FLATE outreach activity. Figure 6-OE shows a decrease in the number of "Made in Florida" DVDs that were distributed into 2008. However, the decrease is attributed to availability of the video on the FLATE and the "Made in Florida" websites (Figures 7-OE and 8-OE), which show a sharply growing number of hits on both websites. In 2008, the FLATE website surpassed 1 million hits since 2006. In 2008, the three most popular webpages on

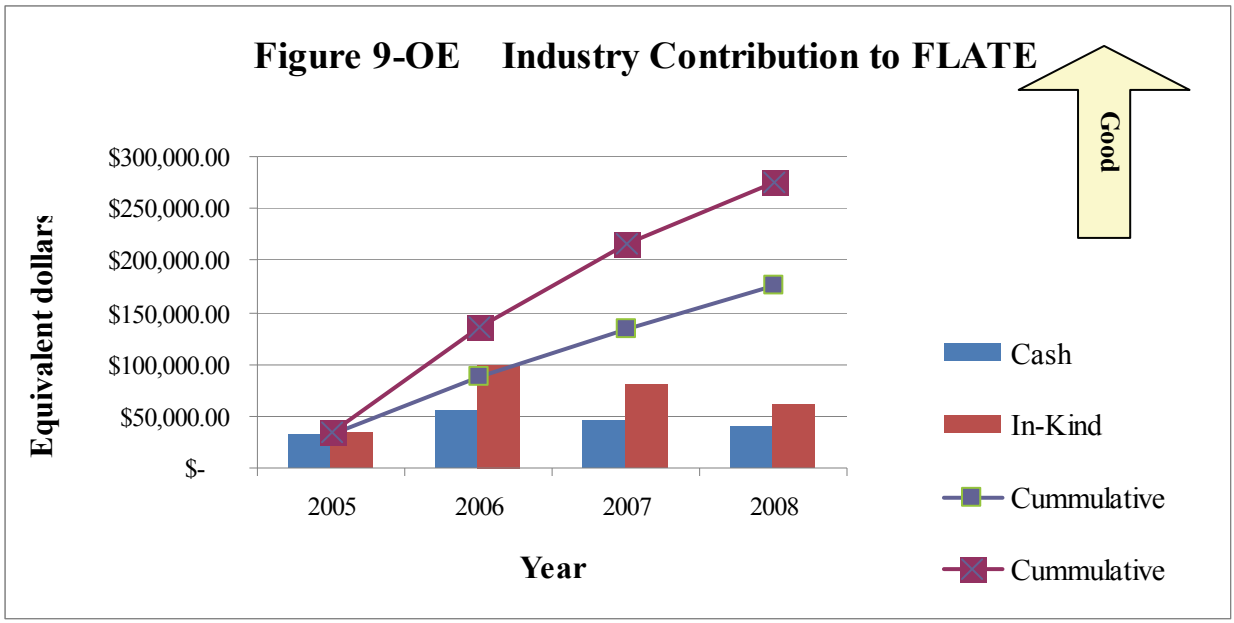




MadeInFlorida.org and FLATE.org were respectively: 1-Homepage, 2-Educators page, 3-Career Pathways page; and 1-Homepage, 2-Enginerring Technology Forum project page, 3-About Us. Contributing to the effectiveness of FLATE outreach are a number of activities such as Public Service Announcements broadcast on widely-viewed cable TV channels, the FLATE newsletters and email, publication of the Florida Trend: NEXT advertorial, and other activities reaching into schools and communities around the State.



The next chart, Figure 9-OE reflects the impact of FLATE outreach activity in industry. Based on the data shown, Industry contribution in both, cash and in-kind, have steadily risen since 2005. Effectiveness measures OE-9 and OE-10 are addressed by these data.

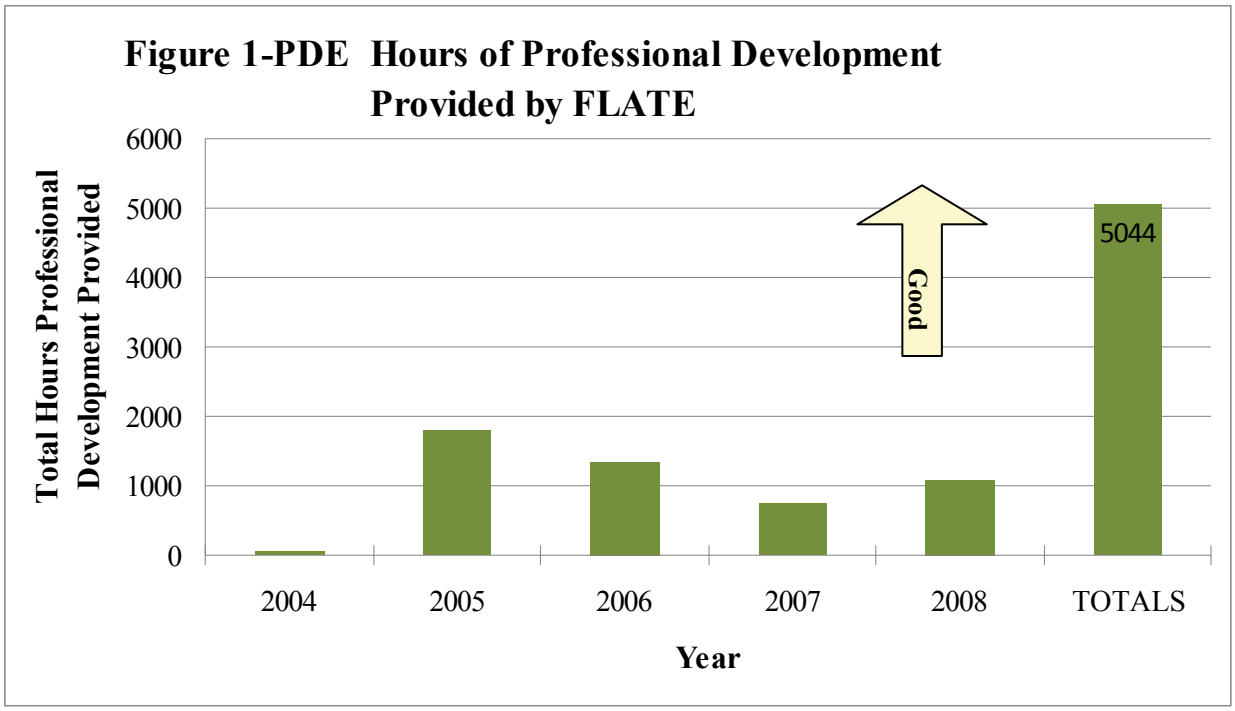


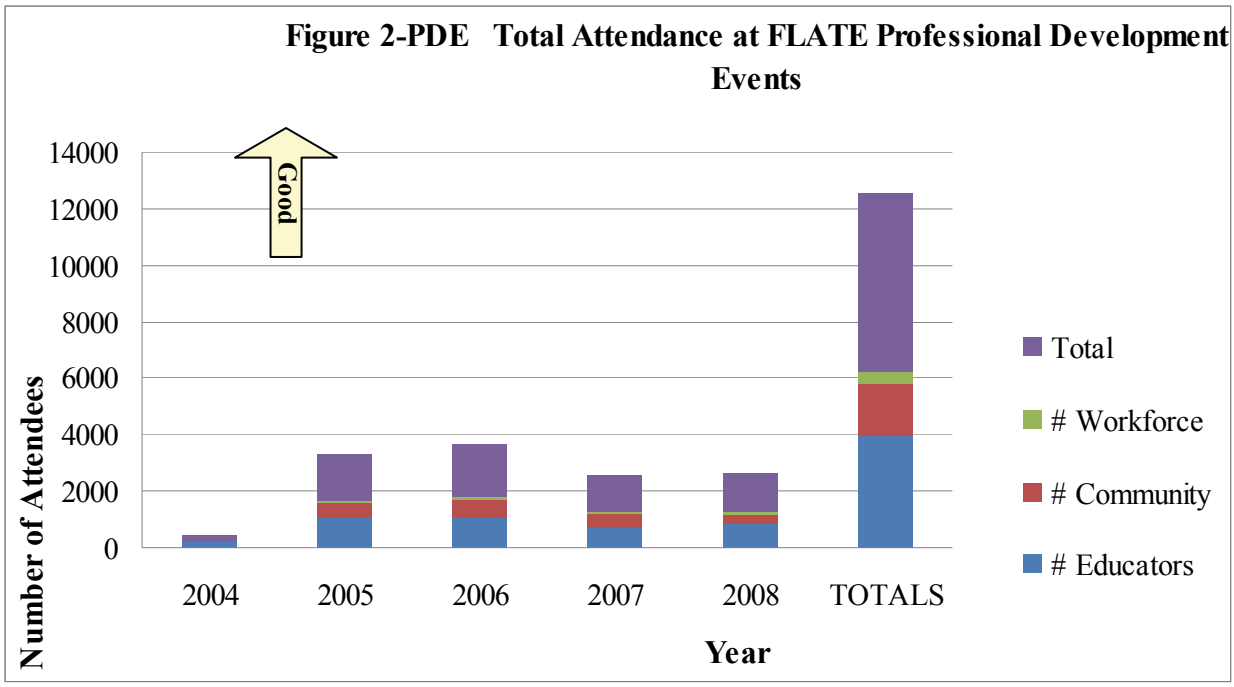
No data are reported for Effectiveness Measure OE-11 because it is a lower priority measure which tracks activity rather than true effectiveness. Data reported with regard to Effectiveness Measures OE-12, OE-13, OE-14 follow, respectively. For OE-12: in the first two consecutive years in which manufacturing-education related awards have been made, the number of nominees increased from three to seven for the three separate awards. For OE-13: no data is reported since the Made-In-Florida Scholarship page was recently launched (January 2009). Results will be described in the next evaluation cycle and report. For OE-14: for 2005 through 2008 attendees at six Summer Robotics Camps included 57 female and 20 male middle and high school students. Two more camps are scheduled for 2009. The Robotics Camp 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.

Section C. Effectiveness of Professional Development Efforts:

Professional Development is a key FLATE strategy, which supports outreach to promote manufacturing careers to high school students and their families. Professional development activities enable faculty and other involved stakeholders to facilitate the implementation and use of FLATE-developed tools in academic and industry settings. FLATE provides a number of training and development opportunities throughout the year in a number of different venues including stand-alone workshops, the Forum on Engineering Technology (ET Forum), and others partner projects.

Figure 1-PDE reflects the total number of participant contact hours in FLATE workshops and training at all FLATE originated professional development events. Figure 2-PDE shows that over its 5 year history, FLATE has invested more than 150 weeks of training participant time has been invested in professional development for three segments: workforce, community, and





educator participants. Effectiveness Measures PDE- 2 and PDE-3 are addressed by these figures.

The next several figures address Effectiveness Measures PDE-1 and PDE-4 and report data showing the effectiveness of participant development and training activities. Figure 3-PDE, although for only a very few participants, shows results for selected survey statements in the

Level 1 (usefulness and applicability) evaluation of the FLATE/HCC Basic Programmable Logic Controller Short Course. Scoring is based on a 5 point Likert scale, with 5 being the highest score.

Figure 3-PDE—Results of Level I Evaluation for Basic Programmable Logic Controller Short Course

Ques #	TOPIC		Average Nov 07	Avg Mar 08	Avg May 08	AVG 07-08
	Number of Participants		3	3	6	**12**
1	This professional development event was of value to me.		4.7	5.0	4.2	**4.6**
2	I gained new insights.		4.3	4.7	4.0	**4.3**
3	The content was relevant.		4.7	4.7	4.2	**4.5**
4	I would recommend this event to others.		4.7	4.7	4.2	**4.5**
12	The presentations were applicable and worthwhile.		4.0	4.7	3.8	**4.2**
14	I can incorporate the materials covered into my job.		4.7	4.7	4.5	**4.6**

In Figure 5-PDE and the accompanying table describing the survey questions,

Figure 4-PDE – Effectiveness Survey Questions

1. This is an effective way to promote the importance of soft-skills
2. The instructions were simple and straightforward
3. The activity was engaging
4. I would recommend this game to others
5. I see the value of using this game in my workplace

Figure 5-PDE Percent Total Disagree and Strongly Disagree

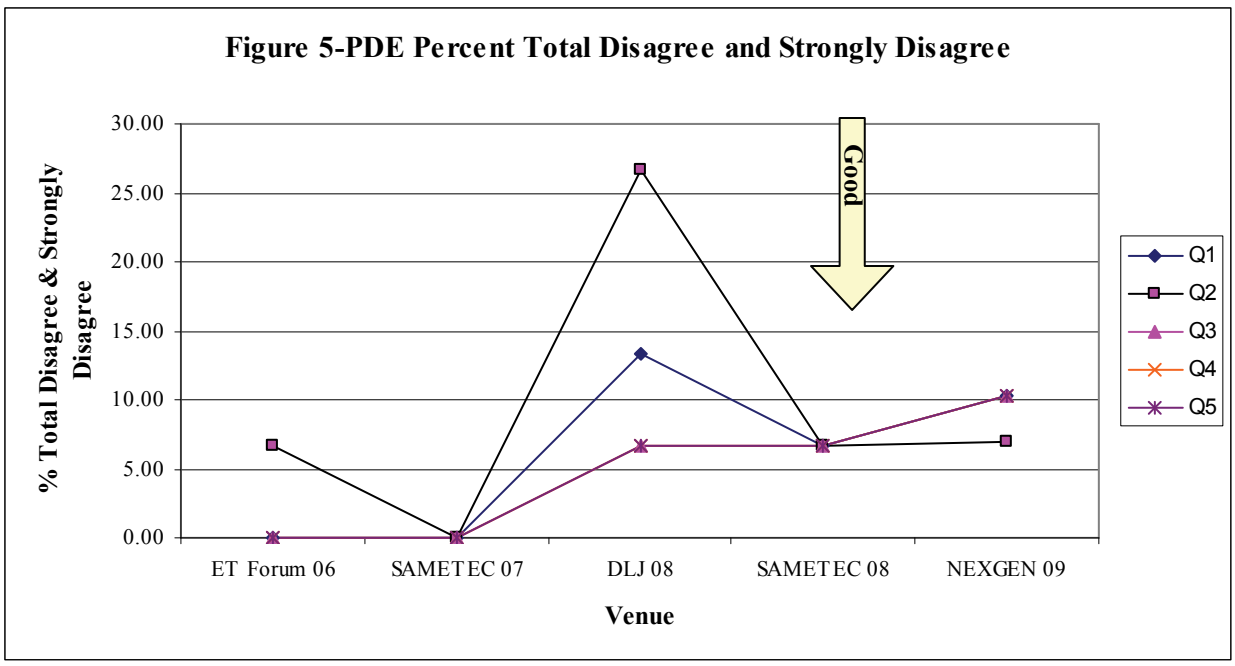
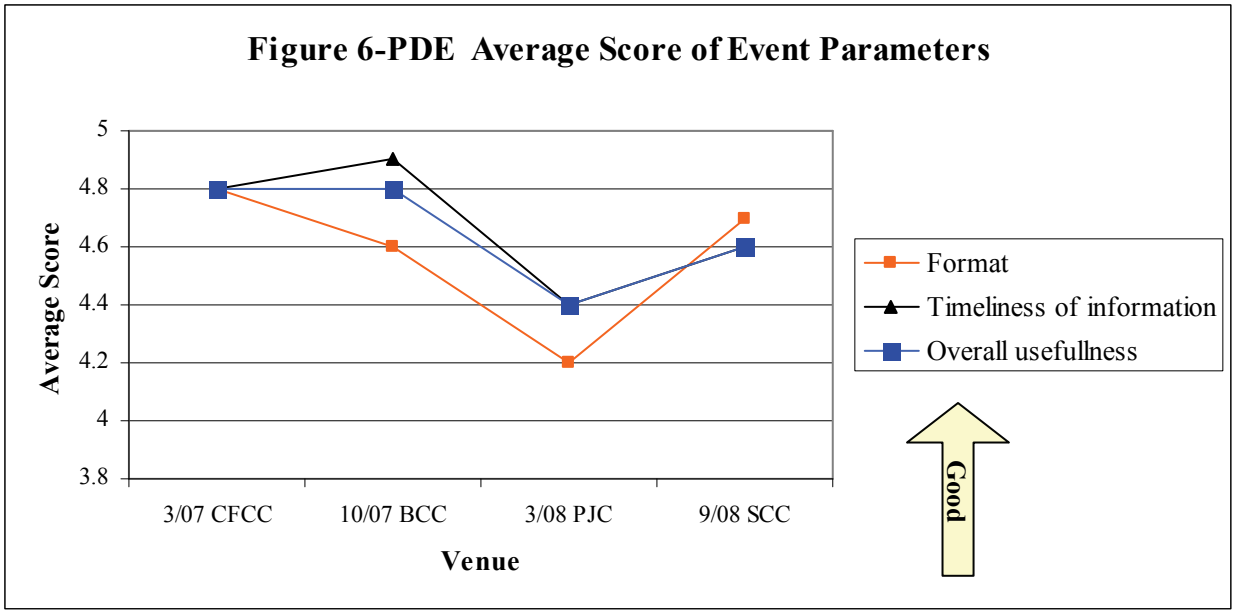


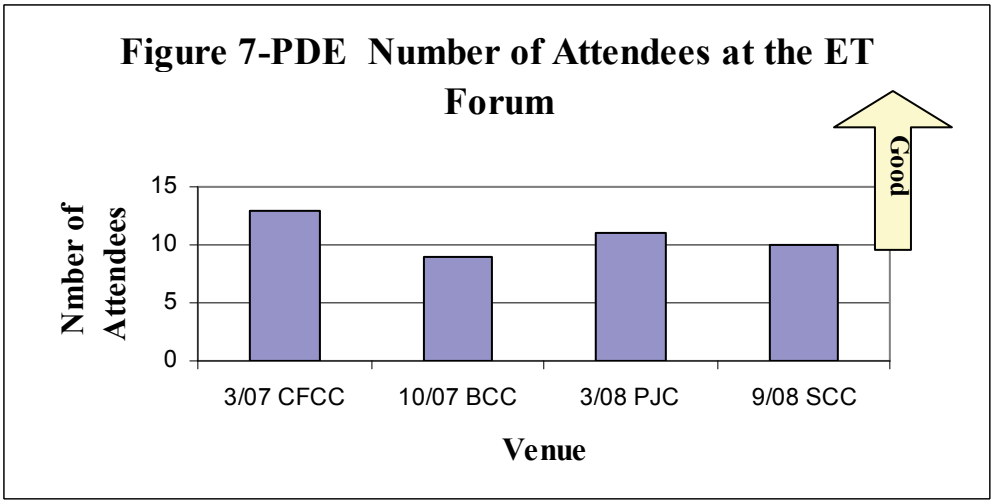
Figure 4-PDE, results show that participants overwhelmingly find the Toothpick Factory soft skills training, developed and delivered by FLATE, effective and useful. The data shown reflect the small percentages where there is any disagreement with this premise. The survey was scored on four-point scale (Strongly Disagree, Disagree, Agree, Strongly Agree).

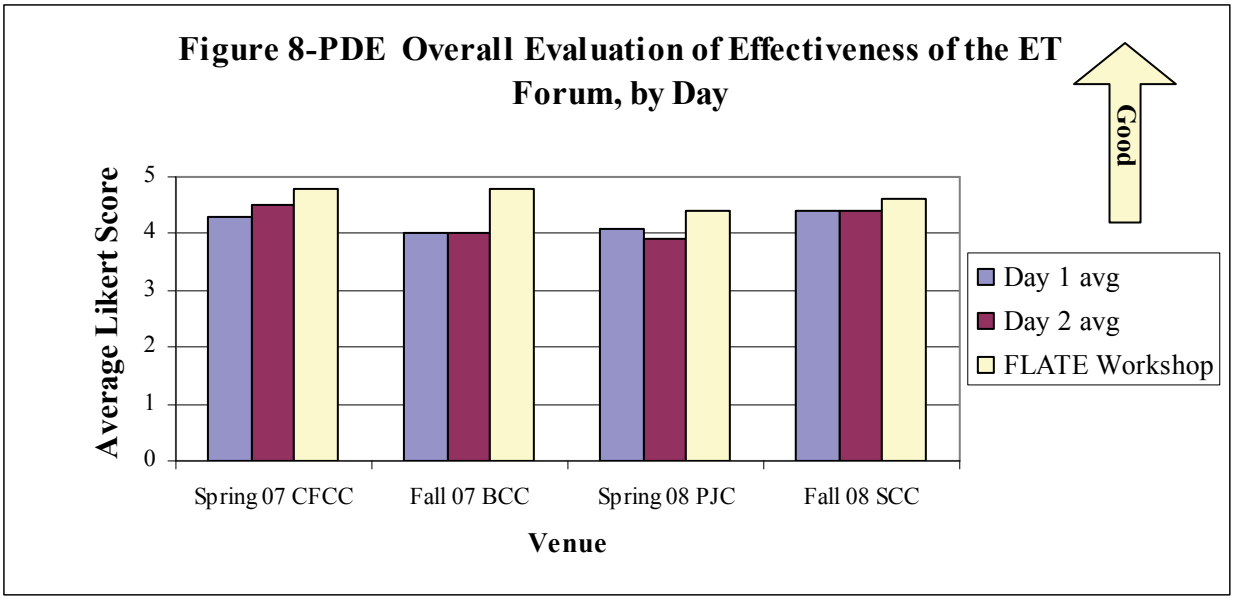
The Florida E.T. Forum is an important vehicle to bring together the diverse and geographically dispersed colleges with common issues and challenges. The Forum is a semiannual 2-day meeting of community college engineering technologies faculty in Florida. FLATE utilizes the Forum to strengthen its Technology Consortium; share its activities and projects; provide professional development; bring industry and academics together; engage faculty and administrators in statewide curriculum reform; and keep in touch with new and ongoing college program issues and concerns. Figure 6-PDE results show average scores by participants, on a Likert Scale of 1 to 5 (1=Poor, Fair, Good, Very Good, 5=Excellent), for each of the three event parameters: Format, Timeliness of Information, and Overall Usefulness.

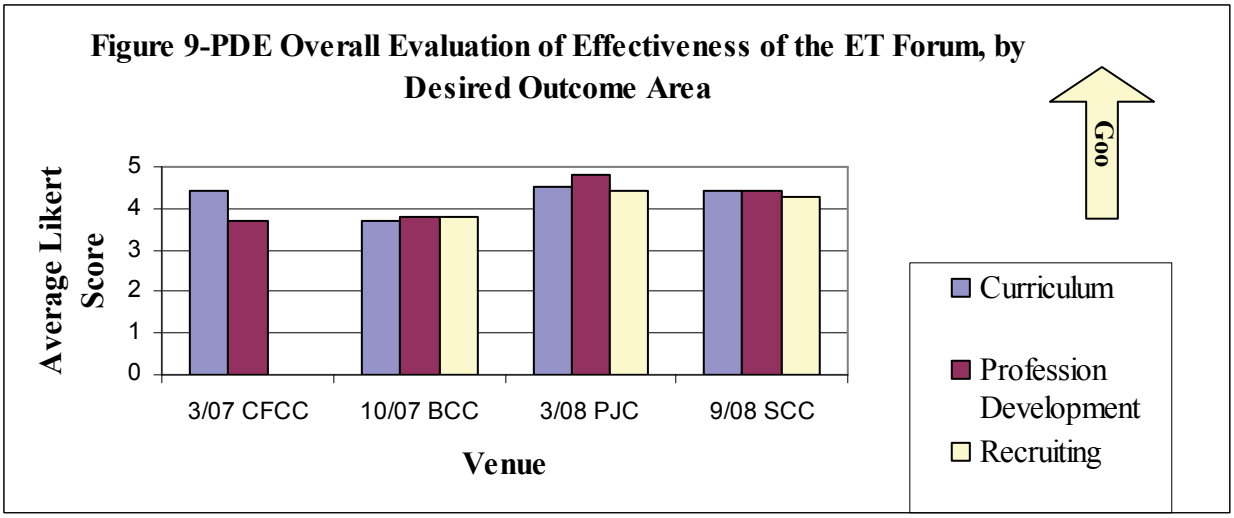


The chart in Figure 7-PDE shows the number of participants at these events for the 4 most recent Forums. Figures 8-PDE and 9-PDE reflect the participant evaluation of the overall effectiveness of the ET Forum event, on a Likert Scale of 1 to 5 (1=Poor, Fair, Good, Very Good, 5=Excellent). Figure 8-PDE evaluates each day and the FLATE Professional Development event overall.

The Figure 9-PDE evaluation is with respect to each of the three event elements: Curriculum, Professional Development, and Recruitment.







Another measure of effectiveness relating to faculty self-evaluation of performance changes in the workplace as a result of attendance at FLATE professional development and training events is not reported here because no data has currently been collected.

Section D. Additional Effectiveness Evaluation Results:

FLATE adopted the Sterling/Baldrige business model in 2006 to provide an evaluation framework for operating as would a successful manufacturer. This evaluation model combines evaluation plan elements required by NSF with the quality-driven Florida Sterling/Baldrige process familiar to Florida manufacturers. Integrating Sterling/Baldrige quality components with FLATE's operations is vital to FLATE's success in serving customers, partners, and other stakeholders. As a result, FLATE created a team-based culture, driven by senior leaders, that engages and motivates all staff and volunteers. The Leadership Team drives success and sustainability through an integrated approach in setting the direction and goals of the organization while maintaining a culture of proactive leadership, collaboration, excellence, action-orientation, and focus on stakeholder. Organizational goals and objectives are established through annual evaluation planning. The Leadership Team and staff monitor progress against goals regularly. Action items are assigned and followed-up to assure goal accomplishment.

Actively listening to customers and stakeholders, to develop proactive approaches to meet their needs, occurs in a number of ways. These include surveys, focus groups, input from our Industry Advisory Committee (IAC) and National Visiting Committee (NVC), twice-annual FLATE workshops at the Engineering Technology (ET) Forum, and interaction with customers at public exhibits. The FLATE website and contact information is in the public domain. Implicit in FLATE Goals is Outreach requiring a proactive approach to follow up with customers and customer leads, and to close the customer and stakeholder relationship loop.

Self-Assessment Summary and Key Strength and Opportunity Themes

The Sterling/Baldrige self-assessment was conducted in mid-2008. The findings follow. FLATE demonstrates effective approaches, many systematic and responsive to the basic

requirements of the Sterling/Baldrige Criteria for Performance Excellence Items. Most areas are appropriately deployed. Improvement efforts focus on problem solving, and are generally forward looking. However, evaluation and improvement efforts are not integral to daily operations and processes, and are not systematically focused on proactive overall improvement of approaches. Many important results are tracked, but relevant comparative data and information are not prevalent. Some more specific Strength and Opportunity themes follow:

Strength:

- Communication with, input from, and relationship building with Stakeholders, Staff, Volunteers, Customers, Partners is embedded into the culture and overall operation of FLATE and the Leadership Team. Focus on all these stakeholder groups is reinforced and communicated to the staff and volunteers. Stakeholder focus is deeply rooted in the culture.

Opportunity for Improvement:

- Systematic evaluation and improvement steps needs to be integrated into all major approaches so that continuous improvement of processes is automatic, based on aggregate information, and not dependent on reaction to point issues and problem solving handled on a case-by-case basis.

- It is necessary to develop an approach to select and effectively use key comparative information and data. Comparative information, whether from competitors, other similar organization, or dissimilar organizations with similar processes is necessary to help FLATE set realistic goals relative to potential high performance proven by the comparatives.

- An approach is needed, by the Leadership Team and to cascade into the paid and volunteer staff, to regularly and systematically review and analyze overall organizational performance and to set priorities for continuous improvement action.

FLATE's resulting score for the Sterling/Baldrige Self-Assessment is in the 250 to 350 range in a non-linear scoring range from 0 to 1000. In the experience of the evaluator, typical or average organizations generally score in the 150 to 250 range. A score around 300 generally reflects an organization demonstrating effective, systematic approaches responsive to the basic requirements of the Sterling/Baldrige Criteria, with some areas in the early stages of deployment of these approaches. This level of organization has developed a general improvement orientation that is forward looking. There may be some role model practices in place. It obtains results stemming from its approaches, with some improvements, good performance, and favorable early trends. The use of comparative data is rare or in the very early stages of deployment and use.

IV. Summary

FLATE has demonstrated in this evaluation, the culture and capacity to fulfill its mission and meet the needs of NSF and its customers. Performance results also validate FLATE's ability to gain the confidence of all its stakeholders. By its efforts and actions, FLATE has taken significant steps to enhance sustainability of its functions. It has proven that its goals and strategies can be institutionalized in current entities.

Several excellent examples of this are evident. Each represents a unique and significant FLATE accomplishment. One example is the establishment of Florida's first statewide articulation agreement. This innovative FLATE creation is now embedded in the model for the State's Gold Standard Career Pathway program. This approach has fundamentally changed the way the Florida Department of Education (DOE) performs its functions. Another example is the FLATE -initiated model for industry-based workforce certification, i.e. the use of the Manufacturing Skill Standards Council (MSSC) employee certification. The fact that anyone with a MSSC certification can use that credential for 15 credits in any Florida Community College offering the Engineering Science A.S. or A.A.S. degree program is unique to the nation. In addition, this model devised by FLATE has been adopted by the Florida Department of Education and

has been replicated as a best practice in two other industry-based certification programs; nineteen others have been proposed to the State for institutionalization and are pending.

In each area, Curriculum Development, Outreach and Recruitment, and Professional Development, evaluation evidence shows that FLATE made significant strides in the past few years to address and implement its strategies. The growth of implementation of FLATE-developed curriculum at community colleges is significant, as are implementation of other curriculum related initiatives like specializations and certificate programs. No colleges implementing the FLATE ET degree framework have retreated. The FLATE Leadership and Team made, and continue to make, terrific inroads to the academic, industry, and lay communities to promote manufacturing workforce development, training, and career paths. Professional development activities have been targeted to educators and others to support and endorse manufacturing careers among current and potential manufacturing workforce members.

The following comments summarize some key areas of opportunity for improvement, as well as organizational and results– and data-related recommendations:

Organizational Recommendations:

- Establish an approach to regularly review and revise as necessary the effectiveness measures, and collection methods such as surveys, in all areas to ensure they remain current and useful for improving performance.

- Develop a means to build key processes, which incorporate evaluation and improvement into the process itself to facilitate continuous improvement activity.

- Create a system for identifying key measures requiring comparatives, select appropriate comparatives, and effectively use key comparisons to set goals and improve organizational performance.

- Build an approach to regularly review FLATE performance, set and prioritize improvement actions, and communicate the same to the staff and stakeholders.

Results– and Data-Related Recommendations:

- Review all Effectiveness Measures and deselect those measures to be reported which are primarily activity-related and not necessarily effectiveness-related at the organizational level. Some may still be necessary and useful to be tracked at lower levels. Specifically, these measures should be reviewed: CE 13 through CE-17, and OE-11.

- Where applicable, modify Effectiveness Measures to collect normalized rather than raw data. Normalized data yield better information when comparative data are obtained from organizations with similar processes.

- Investigate whether there is any correlation between inquiries and referrals from the *Florida Trend* NEXT advertorial to actual enrollment in a college and/or manufacturing related programs. Similarly seek correlations between web page hit data and effectiveness related to enrollment in manufacturing-related programs.

- Follow-up to determine whether data can be collected that indicates effectiveness of outreach and professional development efforts in the classroom. In other words, try to answer the question: Do FLATE activities and efforts influence teacher and student behavior in the classroom?

Appendices

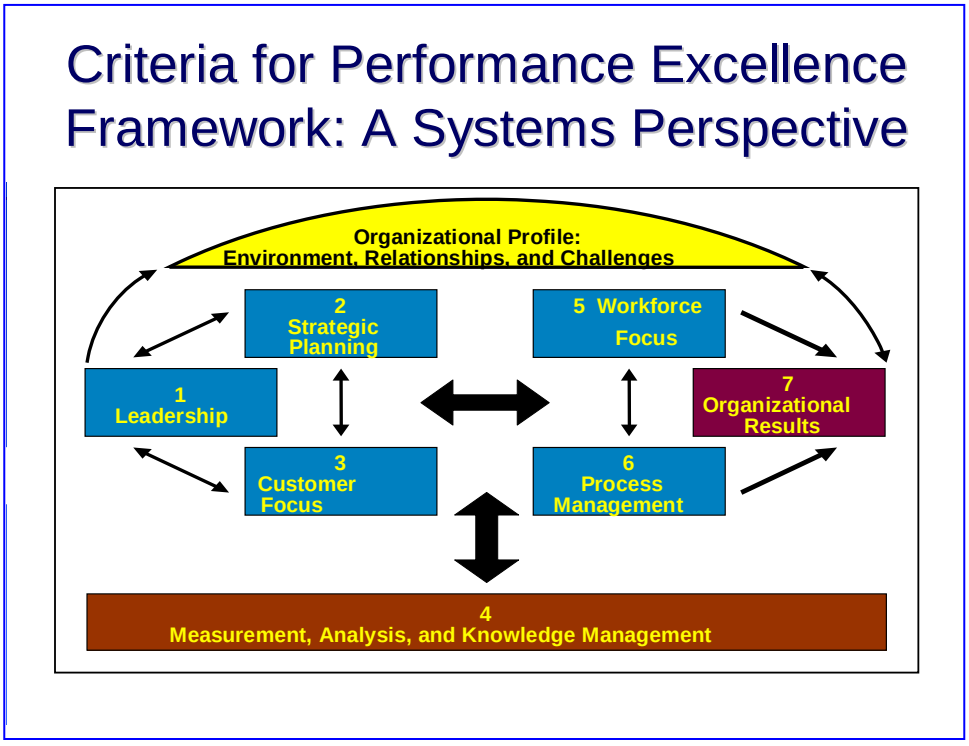
Appendix A

Florida Sterling Management Model

The Sterling Criteria for Performance Excellence, which comprise the model, cover these seven organizational areas:

- Leadership
- Strategic Planning
- Customer Focus
- Measurement, Analysis, & Knowledge Management
- Workforce Focus
- Process Management
- Performance Results

These Criteria are an interrelated set of management best practice requirements aimed at increasing customer value, engaging the workforce (including the volunteer workforce) in driving organizational effectiveness, and creating a higher return for the organization. The Criteria provide the framework to enhance productivity, profitability or cost effectiveness, and improve the bottom line, and help the organization focus on data and information that drive positive results.



More can be found at www.floridasterling.com.

Appendix B

Vision and Mission:

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, a NSF-ATE Regional Center of for Advanced Technological Education, will create a manufacturing educational delivery system by offering the technical programs, curriculum development, best practice demonstrations, student involvement and outreach activities necessary to meet the workforce capacity and high performance skill needs of the manufacturing sectors within its region.

Appendix C

Guiding Principles

These serve as the basis for reasoning, action, and organizational decision-making. These Guiding Principles show the way and direct the movements of our organization. We use these Principles as a filter (criteria) through which we analyze our projects and initiatives to determine whether we should invest time and other resources to accomplish them.

- ***Does this build upon and require strong teamwork to accomplish?*** At FLATE we depend on teams comprised of staff, partners, and stakeholders to accomplish our mission. We benefit from the range of perspectives of multiple team members to devise the best and most workable solutions.

- ***Does this enhance our ability to build bridges among academia and industry partners and stakeholders?*** We believe in building and facilitating cooperative relationships and partnerships with industry, academia, and others with an interest in manufacturing and engineering technology education. Building mutual trust and respect among our stakeholders helps us focus and leverage FLATE's resources to achieve our goals.

- ***Does this ensure that the role of community colleges is valued and respected?*** We believe that community colleges are a very effective and efficient channel for delivering manufacturing and engineering technology education programs. Their focus to provide current industry-driven post-secondary technical education provides FLATE with strong support for its unified curriculum goals.

- ***Does this increase FLATE's leadership in technical education in the State of Florida?*** We strive for a unified technical education system with articulated pathways for manufacturing and engineering technology education. We believe that FLATE should be involved and contribute perspective, knowledge and experience at levels and in organizations where we can make a difference and affect positive changes.

- ***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?*** We are dedicated to continuously improving manufacturing and engineering technology education. We believe that the only way to respond to the workforce capacity and skills needs of our stakeholders is to continuously monitor their needs and devise innovative ways to meet them.

- ***Does this augment our aptitude for providing resources, opportunities, and access for student success?*** We build and distribute tools, make relevant career information accessible, and provide resources for teachers. We believe that by working closely with educators we can improve student recruitment, retention and success in manufacturing education and career pathways.

Appendix C

FLATE - Organizational Profile – July 10, 2007

P.1 Organizational Description
Describe the organization's operating environment and key relationships with customers, suppliers, PARTNERS, and stakeholders.

a. Organizational Environment

(1) What are your organization's main products and services?	Act as bridge between academia and industry; Expand diversity of the Florida economy; Enhance workforce development in the manufacturing sector; Enhance professional development of teachers; Outreach to students (middle and high school) and their parents, as well as to guidance counselors, teachers, and industry; Facilitate curriculum reform around the state at Community Colleges; Serve as an intellectual resource for industry associations, the Florida legislature, Community Colleges, School Districts, and DOE.
What are the delivery mechanisms used to provide your products and services to your CUSTOMERS?	Professional development workshops for teachers and faculty; Student tours of facilities; Websites; Handouts, video, Florida Trend NEXT publication insert, Career Pathways, and other media, newsletter, press releases, public speaking events, presentations, displays, exhibits, and attendance at events; Branding (FLATE & Made In Florida) of all the outreach activity; Development of training modules such as Soft Skills, curriculum modules for High schools, company based technical modules, and others. Conferences (hosting and attendance at)
(2) What is your organizational culture?	Collaborative environment, stakeholder- focused, excellence-driven, proactive leadership, individually action-oriented,
What are your stated PURPOSE, VISION, MISSION, and VALUES	Mission: FLATE, a NSF-ATE Regional Center of Manufacturing Education, be the go-to organization for manufacturing education, create a manufacturing educational delivery system by offering the technical programs, curriculum development, best practice demonstrations, student involvement and outreach activities necessary to

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	meet the workforce capacity and high performance skill needs of the manufacturing sectors within the region. Guiding principles: Foster technical and professional advancement in the manufacturing community; Institute manufacturing related courses that are conducive to nontraditional scheduling times and delivery platforms; Develop an active corporate leadership team; Promote manufacturing careers and recognize manufacturing students and educators; Identify and monitor the manufacturing workforce needs; Support the development of emerging manufacturing technologies; Develop state of the art training and educational materials and delivery systems; Disseminate educational materials and resources to the manufacturing community; Encourage and nurture under-represented students to enter and complete manufacturing education programs.
(3) What is your WORKFORCE profile? What are your WORKFORCE or employee groups and SEGMENTS? What are their educational levels?	5 full-time, 2 part-time, # with Associate Degree ___2__ # with to Bachelor's Degree _2___ # with Master's Degree __1____ # with PhD ____2__
What are their key requirements and expectations?	Professional support/environment, benefits and compensation, flexibility in work hours, adequate spaces and equipment/tools, mutual support, teamwork and collaboration
What are your organization's WORKFORCE and job diversity, organized bargaining units, KEY	N/A

benefits, and special health and safety requirements?	
(4) What are your major facilities, technologies, and equipment?	Office spaces, two classroom labs with training equipment, vehicle, basic presentation equipment, display modules for exhibition. Network/Email infrastructure – provided by our host institution/College
(5) What is the regulatory environment under which your organization operates? What are the applicable occupational health and safety regulations; accreditations, certifications, or registration requirements; relevant industry standards; and environmental, financial, and product, regulations?	Administrative and financial procedures (HCC); Florida DOE criteria and frameworks, NSF financial and administrative requirements; grant restrictions and accountability

b. Organizational Relationships

(1) What are your organizational structure and GOVERNANCE system?	HCC/FLATE/BANNER leadership group, HCC structure including Board of Trustees, Leadership Team - oversee operations and guide strategic direction and vision; Executive Committee comprised of leaders from academic partners (highest administrators plus PIs, Director; IAC representative), NVC (national and statewide representatives of manufacturing industry, DOE representative, Workforce Florida representative, MAF representative, educators, Duncan McBride) - advises, evaluates and advocates, and reports to NSF;

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	Industrial Advisory Committee (invited representatives from industry, other partners) comprised of industry representatives, educators, MAF representative, workforce and economic development members Weekly staff meetings re: activities and plans and work-related issues.	
What are the reporting relationships among your GOVERNANCE board, senior leaders, and parent organization, as appropriate?	FLATE Executive Director reports to HCC; accountable for management and operations; HCC and FLATE are financially accountable to NSF;	
(2) What are your KEY CUSTOMER and STAKEHOLDER groups and market segments, as appropriate?	*(Prioritized based on activity levels)* School districts, educational institutions (CC); Students/(parents); Industry & MAF/RMAs; Community leaders, workforce boards, economic development groups; HCC, SPC, USF; DOE; NSF; Other ATE centers	*(Based on desired Impact)* Students/(parents); School districts, educational institutions (CC); Industry & MAF/RMAs; HCC, SPC, USF; Community leaders, workforce boards, economic development groups; DOE; NSF; Other ATE centers
What are their KEY requirements and expectations for your products, services, and operations? What are the	School districts, educational institutions (CC): *Unbiased guidance and industry-based curriculum, relevance, training and delivery support for services/products* Students/(parents): *career information to support decision-making, relevance, Degree, Certificate Pathways*	

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differences in these requirements and expectations among CUSTOMER and STAKEHOLDER groups and market segments?	Industry & MAF/RMAs: *prepared workforce, increased workforce pool to draw from* Community leaders, workforce boards, economic development groups: *prepared workforce to enhance economic development, increased workforce pool which might draw more manufacturing companies to Forida* HCC, SPC, USF: *enrollment development, relevance, visibility* DOE: *expertise, unbiased guidance and industry-based curriculum, relevance* NSF: *enrollment, increase in technician level workforce, visibility* Other ATE centers: *collaboration, best practices. dissemination of materials*
(3) What are the most important types of suppliers, PARTNERS, COLLABORATORS, and distributors?	Suppliers: *Webmaster, graphics developer, external evaluator, faculty developers (SMEs)* Partners: *MAF, HCC, SPC, USF, NSF, DOE* Collaborators: *regional manufacturing associations, community colleges, BANNER Center, workforce boards, economic development councils, ATE centers, select industry leaders (NEXT sponsors, toured facilities, video subjects, etc)* Distributors: *Outreach Manager and ambassadors* FLATE staff
What role do these suppliers, PARTNERS, COLLABORATORS, and distributors play in your work systems and production and delivery of your KEY products and services?	Suppliers develop and provide materials. Partners offer guidance, strategic vision, infrastructure support; outreach to academic and industrial Stakeholders (Educational and MAF partners) Collaborators provide support and input for specific activities and events. Distributors serve primarily as connection to students, and RMAs, to a lesser extent

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What role, if any, do they play in your organizational INNOVATION processes?	Through participation in the governance structure (described above), they provide vital input because they are on the front-line and have a hands on point of view; they are or directly touch customers and stakeholders;
What are your most important supply chain requirements?	Communication, providing feedback, technical expertise, timeliness
(4) What are your KEY supplier and CUSTOMER partnering relationship and communication mechanisms?	Group and/or team meetings; 1-on-1 visits and tours with stakeholders; attendance at partner meetings (e.g. MAF); websites, newsletter, email, phone, handouts, DVD

P.2 Organizational Challenges
Describe your organization's competitive environment, your Key Strategic Challenges**, and your system for** performance **improvement.**

a. Competitive Environment

(1) What is your competitive position?	TBD
What is your relative size and growth in your industry or markets served?	TBD
What are the numbers and types of competitors for your organization?	Re Outreach and competition for student face time: *Junior Achievement, internet job search/recruiting, High Tech Corridor, FCAT prep, MOSI* Re Professional Development: *Endeavor Academy, private providers, ATE Centers, School districts* Re Enrollment in FLATE-originated programs: *other similar CC programs, other technical programs, training providers, private educational institutions, employers, Lead the Way* Re Curriculum Adoption: *ATE centers, private providers, individual faculty*
(2) What are the principal factors that determine your	Re Outreach: *Pervasiveness of materials and brand/name, support by industry, support by academia;*

Appendix C

success relative to your competitors?	Re Professional Development: *Repeat customers, positive feedback,* Re Enrollment & Curriculum Adoption: *Curriculum relevance, support by industry, flexibility, cost*
What are any KEY changes taking place that affect your competitive situation, including opportunities for INNOVATION and COLLABORATION, as appropriate?	Raised security concerns, fewer but more skilled jobs, legislative actions, changes in school policies and budgets, rapid changes in technology, aging of the workforce;
(3) What are your KEY available sources of comparative and competitive data from within your industry?	Other ATE Centers, US DOL, workforce boards, AWI, NAM, NSF, DOE, professional publications
What are your KEY available sources of comparative data from outside your industry?	TBD
What limitations, if any, are there in your ability to obtain these data?	Timeliness and accuracy of reports, costs to acquire and accessibility of reports and information

b. Strategic Challenges

What are your KEY business, organizational, human resource STRATEGIC CHALLENGES and advantages with organizational SUSTAINABILITY?	Challenges: *renewal/approval of grant, student recruitment (enrollment into CC programs), long-term source of funding and organizational structure, awareness of FLATE in the educational community, defining our impact, competition for like funds; the unfavorable perception of the manufacturing industry and its job opportunities, Host institution's policies/restrictions as they relate to salary rates* Advantages: *Only provider of curriculum reform, DOE approved ET degree, Partnerships and collaborations,*

	reputation, institutional support

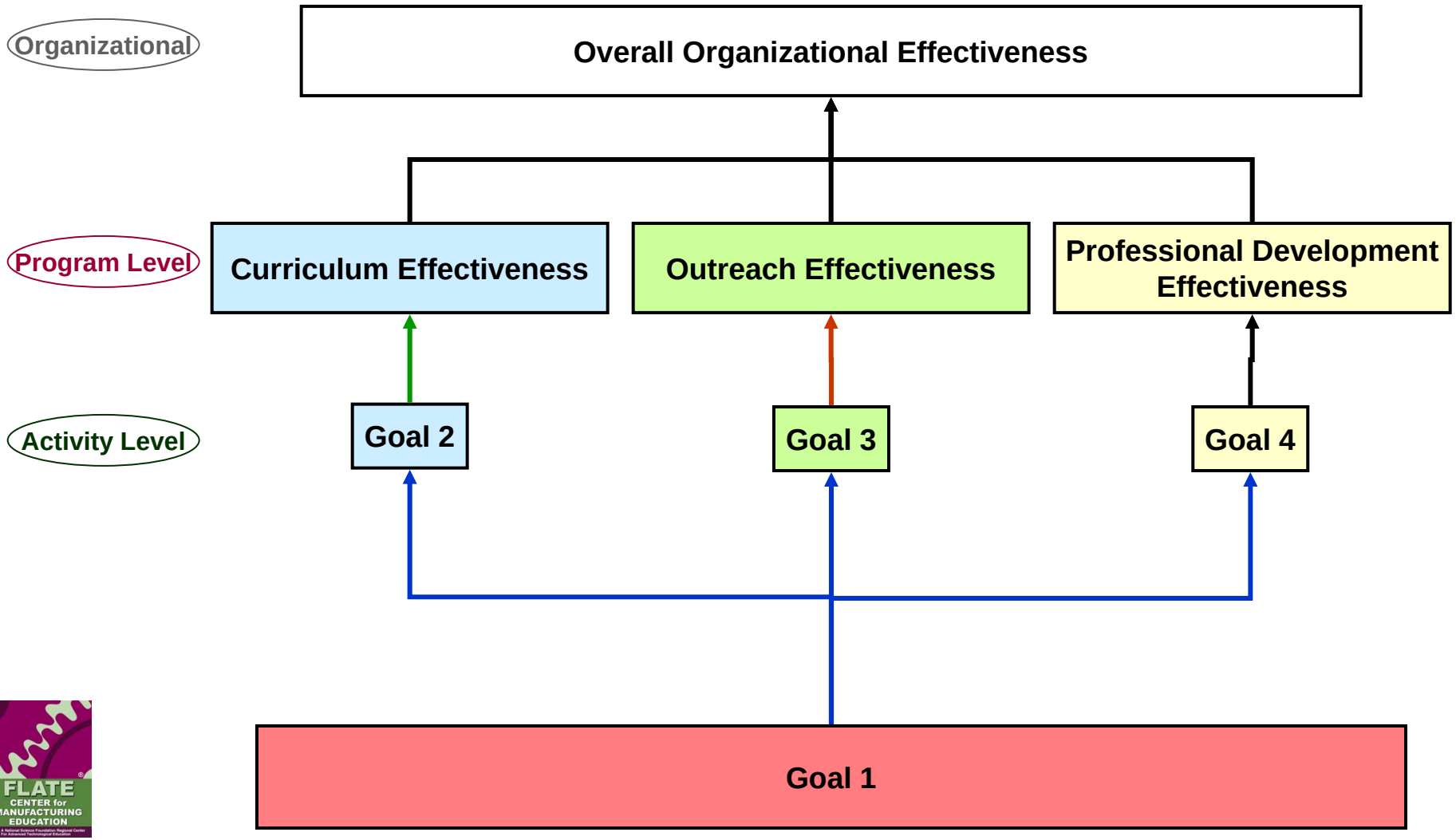
c. Performance Improvement System

What are the key elements of your PERFORMANCE improvement system, including your evaluation and LEARNING PROCESSES?	Baldrige/Sterling model approach to improvement. Feedback collection, analysis, implementation of changes; staff professional development opportunities

Appendix E

FLATE – Strategic Hierarchy

2008-2011



FLATE – Strategic Hierarchy

2008-2011

Organizational

Program Level

Activity Level

Overall Organizational Effectiveness Measures

Number of Students placed into the manufacturing workforce

- **Number of Students enrolled in manufacturing programs (Community College and High School)**

FLATE - Strategic Hierarchy

2008-2011

Organizational

Program Level

Activity Level

Curriculum Effectiveness Measures

- Community Colleges
  - **CE-1** % of implementations in existing programs
  - **CE-2** % increase in students participating
  - **CE-3** # of new programs
  - **CE-4** # of new specializations
  - **CE-11** # of college level completers (through various sources)
- High Schools
  - **CE-5** % adopting Automation & Robotics framework
  - **CE-6** % increase in students participating in Automation & Robotics framework
  - **CE-7** % integrating MSSC standard in existing non-FLATE framework
  - **CE-8** % increase in students participating re: MSSC standard in existing non-FLATE framework
  - **CE-12** # of high school level completers (through various sources)
- PSAVs
  - **CE-9** % integrating MSSC standard in existing non-FLATE framework
  - **CE-10** % increase in students participating
- **CE-13** # of other programs asking for curriculum model as best practice
- **CE-14** # of students using Made In Florida Learning Challenges
- **CE-15** # of students taught soft skills module

FLATE - Strategic Hierarchy

2008-2011

Organizational

Program Level

Activity Level

Outreach Effectiveness Measures

- Florida Trend Magazine's NEXT issue - manufacturing advertorial
  - **OE-1** # of contacts by category
  - **OE-2** # of qualified leads forwarded to post-secondary schools
  - **OE-3** # distributed career planning handouts
- Tour Survey results (re: perceptions of attendees; identifying responses to specific selected questions)
  - **OE-4** Student data
  - **OE-5** Industry data
- **OE-6** # hits on the Made-in-Florida (MIF) website
- **OE-7** # MIF DVDs distributed
- **OE-8** # hits on FLATE.ORG website
- Industry contribution to FLATE's outreach effort
  - **OE-9** Cash value
  - **OE-10** In-kind value

Professional Development Effectiveness Measures

- **PDE-1** Level 1 usefulness/ applicability measures collected at professional development events/training sessions
- **PDE-2** # of participant contact hours in workshops and training
- **PDE-3** # of participant contact hours in ET Forum
- **PDE-4** Faculty behavioral changes in the workplace as a result of attendance at professional development events/training sessions (planned data collection)
- **PDE-4** Faculty self-evaluation of performance changes in the workplace as a result of attendance at professional development events/training sessions

FLATE - Strategic Hierarchy

2008-2011

Organizational

Program Level

Activity Level

Goal 2

2.1 Two community colleges will have adopted the AS/AAS Engineering Technology (ET) Degree.

2.2 Align appropriate technical high school frameworks for articulation with the ET Degree.

2.3 Create a map to minimize replicate courses in the ET Degree.

2.4 Have identified where MSSC gaps are present in ET Degree core.

2.5 Adopt/adapt curriculum content based on MSSC gap analysis.

2.6 Develop a post secondary adult vocational framework for articulation to the ET Degree.

2.7 One high school technology program will have adopted the FLATE developed frameworks that articulate to the ET Degree.

2.8 Consolidate ET core course numbers to a minimal set.

2.9 Facilitate at least 1new ET Degree specialization track and/or certificate.

2.10 Join an ATE consortium to determine the feasibility of a Virtual Factory learning platform.

2.11 Create an articulation pathway for the ET Degree into a B.S. Engineering Degree.

2.12 There will be at least 1 Engineering College articulation with the ET Degree.

2.13 Facilitate 8 ET Degree adoptions by Florida Community Colleges.

2.14 Facilitate 8 ET Degree high school programs to ET Degree articulations.

2.15 Facilitate 6 new ET Degree specialization tracks and/or certificates.

2.16 Be the permanent liaison between FLDOE and community colleges for development/revisions of technical curriculum frameworks.

FLATE - Strategic Hierarchy

2008-2011

Organizational

Program Level

Activity Level

Goal 3

3.1 Implement the components of the “Made in Florida” (MIF) campaign statewide.
3.2 Have 5 different MIF Design Challenges based on FL manufacturing facilities and related to appropriate STEM skills.
3.3 Have a series of 6 interactive "manufacturing career pathways” on the MIF website.
3.4 Showcase community college exemplary training facilities on the MIF website.
3.5 Facilitate 1 additional “Made in Florida-Up Close” video sponsored by a Florida based manufacturing company.
3.6 Partner with MAF and the RMAs to support student activities.
3.7 Make available an exportable turnkey MIF outreach kit.
3.8 Implement statewide representation on its Industry Advisory Committee.

Goal 4

4.1 Schedule a training series for the Florida Engineering (ET) Technology Forum.
4.2 Offer one additional integrated Toothpick Factory Simulation event.
4.3 Identify its professional development instructor team.
4.4 Schedule one training event at the Florida Engineering Technology (ET) Forum.
4.5 Deliver a MSSC Certification training for relevant faculty.
4.6 Deliver STEM teachers workshops in partnership with the NASA supported Endeavor Academy.
4.7 Offer 3 integrated Toothpick Factory Simulation events.
4.8 Offer 3 professional development courses on ET Degree specialization content and/or instructional development.
4.9 Deliver 3 MSSC Certification training sessions.
4.10 Develop 1 additional Toothpick Factory© expansion module.

FLATE - Strategic Hierarchy

2008-2011

Organizational

Program Level

Activity Level

Goal 1 (enabler and supporter for all Goals 2 through 4)

1.1 Secure funds from at least one State Center of Excellence.
1.2 Have an operational 501(c)(3) not-for-profit corporation.
1.3 Secure funds for least 1 Florida Dept of Education Perkin's project.
1.4 Execute the administrative host-developed institutionalization plan.
1.5 Secure external funds for programmatic activities.
1.6 Have a transportable Sterling/Baldrige assessment model to meet NSF ATE needs.
1.7 Conduct an organization self-assessment based on Sterling/Baldrige criteria to monitor performance and measure impact.

Appendix F

FLATE	*Curriculum Effectiveness*				
Measure		**Source of Data/Definition**	**File Name**	**Other Notes**	2004 - T.O.
CE-1	Community Colleges - % of implementations in existing programs	# adoptions divided by the number of colleges on the FLATE Annual Enrollment Survey		baseline (non - ET Degree) programs from 06-07	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4
CE-2	Community Colleges - % increase in students participating	DOE Data (was FLATE Annual Enrollment Survey)			2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4, 6.1.1, 6.2.1, 6.2.2
CE-3	Community Colleges - # of new programs	Enrollment Survey, DOE, direct contact		Criteria: submitted to DOE	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4
CE-4	Community Colleges - # of new degree specializations & CCC's	FLATE Annual Enrollment Survey, DOE, direct contact		Criteria: submitted to DOE	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4
CE-5	High Schools - % adopting Automation and Robotics framework	By district and DOE list to start and confirm		Email to CTE district contact list; include newly aligned frameworks in	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4
CE-6	High Schools - % increase in students participating	DOE/FETPIP data (lagging); later contact with specific schools; use #students in mfg all programs as denominator		Confirmation with the schools. (FETPIP data lagging by 2years)	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4, 6.1.1, 6.2.1, 6.2.2
CE-7	High Schools - % of HS integrating MSSC standard in existing non-FLATE framework;	Contact with specific schools; use #students in mfg programs as denominator		HS Enrollment Survey to be developed	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4
CE-8	High Schools - % increase in students participating;	DOE/FETPIP data (lagging); later contact with specific schools; use #students in mfg programs as denominator		HS Enrollment Survey to be developed	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4
CE-9	PSAVs - % integrating MSSC standard in existing non-FLATE framework	Contact with specific schools; use #students in mfg programs as denominator		Find out the current frameworks that are being used	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4
CE-10	PSAVs - % increase in students participating	DOE/FETPIP data (lagging); later contact with specific schools; use #students in mfg programs as denominator (Eng Assistant)		Confirmation with the schools. (FETPIP data lagging by 2years)	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4, 6.1.1, 6.2.1, 6.2.2
CE-11	Community Colleges - # of college level completers (through various sources)	DOE Data (was FLATE Annual Enrollment Survey)		include degree and certificates	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4, 6.1.1, 6.2.1, 6.2.2
CE-12	High Schools - # of HS level completers (through various sources)	DOE/FETPIP data		Confirmation with the schools. (FETPIP data lagging by 2years)	2.2.1, 2.2.3, 2.3.1, 3.1.1, 3.1.4
CE-13	# of other programs asking for curriculum model as a best practice	Local collection in FLATE (email, phone); DOE, direct contact		# information requests to FLATE and consulting	2.2.1, 2.3.1, 3.1.1, 3.1.4
CE-14	# of students using Made in Florida Learning Challenges	# Downloaded; Projected use by teachers downloading lesson plan		projected number from teachers' promisary note	2.2.3, 3.1.1, 3.3.1, 4.1.2,
CE-15	# of students taught soft skills module	# Distributed; Classes done by FLATE + Projected # students taught by teachers receiving distribution		projected number from teachers' promisary note	3.2.1, 3.3.1
CE-16	# of schools adopting Courses developed for CC partners	# of schools adopting Courses developed for CC partners		?	3.3.2
CE-17	# of requested MSSC CPT based articulation requests at ET Degree Schools	FLATE direct inquiry to the ET Degree program chairs		Normalize with # of MSSC CPT's awarded in Florida	

FLATE	*Outreach Effectiveness*				
Measure		**Source of Data/Definition**	**File Name**	**Other Notes**	**2004 - T.O.**
OE-1	Florida Trend Magazine's NEXT issue (manufacturing advertorial) - # of contacts by catagory	Florida Trend response card data		Breakdown responses by selected choices	1.2.3, 5.4.2
OE-2	Florida Trend Magazine's NEXT (manufacturing advertorial) - # of qualified leads forwarded to post-secondary schools	Florida Trend response card data sorted by zip & aligned with post-secondary institutions		keep post-secondary contact list updated	1.2.3, 5.4.2, 6.1.1
OE-3	Florida Trend Magazine's NEXT (manufacturing advertorial) - # distributed career planning handouts	Local collection and tracking		handouts emailed per student and school contact	1.2.3, 5.4.2
OE-4	Tour Survey results (re: perceptions of attendees) (modify this by identifying responses to specific selected questions)	Tour survey results database – student data			4.1.4, 5.4.2
OE-5	Tour Survey results (re: perceptions of industry) (modify this by identifying responses to specific selected questions)	Tour survey results database – industry data			4.1.4, 5.4.2
OE-6	# hits on the Made-in-Florida (MIF) website	From webmaster's report		isolate 4 top hit pages, scholarship and curric specific pages	1.2.3, 2.1.1, 2.2.2, 3.1.2, 5.2.1, 5.4.2
OE-7	# MIF DVDs distributed & # of MIF views on the website	From local file & from post-use survey			4.1.3, 5.4.2, 6.1.1
OE-8	# hits on the FLATE.org website	From webmaster's report		website data	1.2.3, 2.1.1, 2.2.2, 3.1.2, 5.2.1, 5.4.2
OE-9	$ value of industry cash contribution to FLATE's outreach effort	Follow-up survey with industry participants; break down by cash in in-kind/cash local file			1.2.3, 5.4.2
OE-10	$ value of industry in-kind contribution to FLATE's outreach effort	Follow-up survey with industry participants; break down by in-kind in in-kind local file			1.2.3, 5.4.2
OE-11	# of Moderated Sessions, # of Attendees	MAF Summit			4.1.1, 5.4.2
OE-12	Annual # of Nominees and # of Awardees	Awards and Recognition			4.1.2, 5.4.2
OE-13	# of hits on MIF Scholarship page	Scholarship		website data	4.2.2, 5.4.2
OE-14	# of students in Summer Camps, Evaluation data	Summer Camps			4.1.4, 5.4.2

FLATE	*Professional Development Effectiveness*				
Measure		**Source of Data/Definition**	**File Name**	**Other Notes**	**2004 - T.O.**
PDE-1	Level 1 usefulness/ applicability measures collected at professional development events/training sessions.	Training workshop survey results (some standard questions across all workshops)		Includes out-sourced training/conferences	5.1.1, 5.3.1,
PDE-2	# participant contact hours in workshops/training	Rosters		Includes out-sourced training/conferences	5.1.1
PDE-3	# participant contact hours in ET Forum	Rosters		Community College-supported training and development	3.1.4, 5.3.1
PDE-4	Faculty self-evaluation of performance changes in the workplace as a result of attendance at professional development events/training sessions (not currently collected)	Follow-up (3 or 6 months) with new survey to ask whether training information has been put to use and whether it improved performance, etc.		Start for Toothpick Factory	

GOAL 1

Create an administrative region for FLATE that will have statewide recognition as an educational resource for manufacturing-related curriculum, content, and activities.

OBJECTIVE	Year 0		Year 1		Year 2		Year 3		Year 4		Year 5	
	12/31/03	06/30/04	12/31/04	06/30/05	12/31/05	06/30/06	12/31/06	06/30/07	12/31/07	06/30/08	12/31/08	09/30/09
1.1.1 The Director and Chief Financial Officer will be appointed. **[1]***												
1.1.2 The National Visiting Team is established. **[1]***												
1.1.3 The Center's Executive Committee and Regional Advisory Board will be established. **[1]***												
1.1.4 The Center will conduct a workshop with educational partners and stakeholders to identify and prioritize manufacturing education related regional resources and needs. **[2,3]***												
1.2.1 The staff will be fully functional in the three institution partners' facilities. **[1]***												
1.2.2 The Regional Advisory Board and Executive Committee will hold its inaugural meeting. **[1]***												
1.2.3 Promotional materials for statewide distribution will have been designed. **[6]***												
1.2.4 A long-term strategy for transition into a more self-sufficient entity will be defined. **[2]***												
1.3.1 Complete the implementation of a compatible Baldrige operational plan to assure effective management and evaluation of its projects. **[4]***												
1.3.2 Defined additional Target Objectives that reflect the current economic environment and still complement our initial activities status. **[2]***												
1.3.3 Conduct a 2-year Baldrige model self-assessment study of Specific Goal 1. **[4]***												
1.4.1 Establish the sustainability of operational objectives defined in years 1 – 3 as measured by stakeholder feedback and assessment as well as continuation funding. **[2]***												

***[ ]** = corresponding Baldrige Evaluation Component

GOAL 2	Year 0		Year 1		Year 2		Year 3		Year 4		Year 5	
	12/31/03	06/30/04	12/31/04	06/30/05	12/31/05	06/30/06	12/31/06	06/30/07	12/31/07	06/30/08	07/01/08	09/30/09

Create for statewide implementation educational delivery system that contains curriculum, content, and technical programs to support high performance manufacturing.

OBJECTIVE	
2.1.1	Build and maintain a FLATE website to serve as the primary dissemination platform for manufacturing curriculum, content, and activities. **[6]***
2.2.1	Include as partners community colleges across the State's central corridor that have or want to have manufacturing-related programs and/or courses. **[3]***
2.2.2	Work with other ATE centers, NCME and MATEC, to develop a clearing node for statewide dissemination of existing manufacturing-related curriculum and activities. **[6]***
2.2.3	Work with the Florida Department of Education Chancellor's Office to establish goals and objectives for FLATE's manufacturing curriculum and content statewide implementation plan. **[2]***
2.3.1	Extend partnerships to all community colleges throughout the State with existing manufacturing and related programs. **[2]***
2.4.1	Conduct a 2-year Baldrige model self-assessment study of Specific Goal 2. **[4]***
2.5.1	Institutionalize a state-wide program implementing a technology-based delivery system. **[4]***

***[ ]** = corresponding Baldrige Evaluation Component

GOAL 3	Year 0		Year 1		Year 2		Year 3		Year 4		Year 5	
	12/31/03	06/30/04	12/31/04	06/30/05	12/31/05	06/30/06	12/31/06	06/30/07	12/31/07	06/30/08	07/01/08	09/30/09

Adapt, and/or create needed regional related manufacturing curriculum, content, activities, and/or services that cannot be adopted from existing NSF, NSF-ATE and other appropriate sources.

OBJECTIVE												
3.1.1 Design a Career Path Plan (CPP) to facilitate A.S. manufacturing and related technologies students to articulate with State BAS and BS programs and include pathways from Middle and High Schools. **[6]***												
3.1.2 Develop a Linked Distance Learning (LDL) curriculum system for manufacturing courses in the State. **[6]***												
3.1.4 Establish a state-wide working group to validate reform of the A.S. manufacturing Technology for statewide distribution. **[1]***												
3.2.1 Provide to our partners a module for teaching the soft skills needed for successful management/employee interactions on the manufacturing floor(Feb 06). **[6]***												
3.3.1 Provide to our stakeholders application modules and demonstrations for manufacturing and/or related technologies. **[6]***												
3.3.2 Provide to our partners and affiliates a demonstration course developed from best practices with a structure that is conducive to non-traditional scheduling times and delivery platforms. **[6]***												
3.3.3 Conduct a 2-year Baldrige model self-assessment study of Specific Goal 3. **[4]***												
3.4.1 Finalize curriculum and program service development as measured by student, faculty, and stakeholder assessment. **[4]***												

***[ ]** = corresponding Baldrige Evaluation Component

GOAL 4	Year 0		Year 1		Year 2		Year 3		Year 4		Year 5	
	12/31/03	06/30/04	12/31/04	06/30/05	12/31/05	06/30/06	12/31/06	06/30/07	12/31/07	06/30/08	07/01/08	09/30/09

Create a viable Manufacturing Education Awareness System (MEAS) that promotes manufacturing careers, honors outstanding manufacturing education champions and educators, and that fosters industry supported academic scholarships in manufacturing education.

OBJECTIVE	
4.1.1 Co-sponsor with industrial partners an annual regional conference with sessions of interest to area manufacturers as well as professional development sessions for regional manufacturing faculty. **[3]***	
4.1.2 Present an industry-sponsored MEAS acknowledgement award to an outstanding champion and/or educator in manufacturing related education. **[6]***	
4.1.3 Develop and produce “Made in Florida” outreach video for student recruitment and outreach efforts,**[6]***	
4.1.4 Partner with Regional Manufacturing Associations and economic development organizations to conduct outreach student tours. **[6]***	
4.2.1 Inaugurate the MEAS Student Honor Roll to bring credit and recognition to outstanding students in manufacturing and related programs. **[6]***	
4.2.2 Inaugurate an industry-sponsored MEAS scholarship program for students in manufacturing and/or related educational programs. **[6]***	
4.3.2 Conduct a 2 year Baldrige model self-assessment study of specific Goal 4. **[4]***	
4.4.1 Validate sustainability of the Manufacturing Education Awareness System (MEAS) as measured by its ongoing execution of Specific Goal 4 Target Objectives. **[4]***	

***[ ]** = corresponding Baldrige Evaluation Component

GOAL 5

Year 0		Year 1		Year 2		Year 3		Year 4		Year 5	
12/31/03	06/30/04	12/31/04	06/30/05	12/31/05	06/30/06	12/31/06	06/30/07	12/31/07	06/30/08	07/01/08	09/30/09

Create and implement a faculty development program for technical and educational skills as they relate to best practices for high performance manufacturing in the state.

OBJECTIVE	
5.1.1	Schedule a "hands-on" workshop for manufacturing and related technology faculty on the technologies and operations involved in the integrated performance of highly automated manufacturing equipment. **[5]***
5.2.1	Provide for faculty on the FLATE website, a dynamic resource section of appropriate technical and educational professional development opportunities within the state. **[6]***
5.3.1	Schedule, support, and facilitate presentation of at least 3 "hands-on" workshops at 2 member community colleges that present best practice concepts in high performance manufacturing. **[6]***
5.3.2	Conduct a 2 year Baldrige model self-assessment study of specific Goal 5. **[4]***
5.4.1	Secure operational support funds from the State to expand FLATE's faculty development interactions with manufacturing and related educational programs throughout the state. **[6]***
5.4.2	Develop a model for specific industry partnerships between academic institutions and industrial partners, including industry adopted high school or school class to work with internships, co-ops, tours, speakers, etc. **[4]***
5.4.3	Institutionalize the faculty development program as a sustainable aspect of technology currency as measured by faculty and stakeholder feedback. **[4]***

***[ ]** = corresponding Baldrige Evaluation Component

GOAL 6

	Year 0		Year 1		Year 2		Year 3		Year 4		Year 5	
	12/31/03	06/30/04	12/31/04	06/30/05	12/31/05	06/30/06	12/31/06	06/30/07	12/31/07	06/30/08	07/01/08	09/30/09

Create an exciting manufacturing and technology educational environment that encourages and facilitates under-represented student participation in partner educational programs and activities.

OBJECTIVE												
6.1.1 Implement Under-represented Student Participation Plan, UPP, using best practice strategies to recruit and retain more Hispanic Students to technology-based careers using best practice strategies. **[3]***												
6.1.2 Develop an interactive relationship with teachers and parents in a predominately African-American elementary school to promote the awareness and value of manufacturing careers. **[3]***												
6.2.1 Implement UPP components to expose, recruit, and retain more female students to technology-based careers using best practice strategies. **[3 – 6]***												
6.2.2 Implement UPP components to expose, recruit, and retain more African American students to technology-based careers using best practice strategies. **[3 – 6]***												
6.2.3 Conduct a 2 year Baldrige model self-assessment study of Specific Goal 6. **[4]***												
6.3.2 Assure the continuation of under-represented student participation as measured by stakeholder involvement in and commitment to Goal 6 objectives. **[4]***												

***[ ]** = corresponding Baldrige Evaluation Component

KEY

START-UP | ON-GOING | DONE | IN PROGRESS

National Science Foundation
www.madeinflorida.org
www.fl-ate.org

March 4, 2009

Data Request Committee
c/o Dr. Mark Baird
Florida Department of Education
325 West Gaines Street, Ste. 744
Tallahassee, FL 32399-0400

Dear educational colleagues,

The Florida Advanced Technological Education Center, FLATE, is a National Science Foundation (NSF) Regional Center of Excellence, committed to ensuring that Florida has a well-prepared workforce for manufacturing and related technologies. The Center is one of 36 NSF-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 is a leading resource for education and training expertise, leadership, projects, and services to promote and support the workforce in Florida's high performance production and manufacturing community. It does this through outreach and recruitment activities; statewide curriculum reform for advanced technological education; and professional development for faculty, teachers and working professionals.

As we know, manufacturing and related technical careers available to high school, technical school, and community college graduates depends on our ability to provide curriculum that meets industry's needs. One of FLATE's tactics to support this need has been the development, dissemination and support of industry-relevant unified system of education for manufacturing and engineering technologies in Florida. We completed the first phase of this project with:

- The State's approval in March 2007 of the "Engineering Technology" curriculum frameworks for A.S. /A.A.S. degrees with its 5 specialization tracks and 9 different college credit certificates;
- A statewide articulation agreement based on the MSSC Certified Production Technician certification and community colleges that offer the Engineering Technology degrees that has been approved by the state's articulation coordinating committee;
- Submission of new Secondary and PSAV frameworks in "Automation and Production Technology", for adoption in the 2009-10 academic year, that align with the MSSC CPT certification.

In addition, since 2004 the Center has collaborated with Manufacturers, Manufacturer Associations, Florida DOE, Workforce Florida, and the Banner Center for Manufacturing to:

- Provide language for Career and Prof. Academy legislation and testified before House and Senate subcommittees.

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- Establish the *Banner Center for Manufacturing* for complementary workforce training initiatives.
- Facilitate 13 summer externships for STEM & Manufacturing teachers in partnership with the Endeavour Academy.
- Provide 50 Professional Development events impacting 1,563 working professionals.
- Solicit over $270,000 in cash and in-kind donations from companies around the state for "Made in Florida" outreach advertorials, student tours, DVD production/distribution.
- Positively impact over 45,000 high school and middle school students with the "Made in Florida" campaign.
  - 2,014 students, 194 teachers, hosted by 40 different manufacturers in 98 "Made in Florida" Industry tours.
  - 15% increase in numbers of students interested in manufacturing careers.
  - Over 11,520 responses to date from 2 annual advertorials distributed to all Florida H.S. students.
  - Over 32,000 students viewed "Made in Florida" video with 850 DVDs distributed.
  - Over 1,070,000 website hits since 12/05 on www.madeinflorida.org.
  - 40 presentations to 2,643 students, 196 teachers, and 244 community & workforce development members.
- Provide 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.
- Over 2,688 FLATE Focus Newsletters distributed nationwide from January 2007 to now.
- Develop a model for industry endorsed 2-year curriculum for A.S./A.A.S. degrees in Engineering Technologies.
- Dissemination of a model for integrating national skill standards into technician 2-year degree curriculum by 9 national presentations, posters, and published papers on center activities and best practices.
- Develop an industry recognized (Baldrige/Sterling) evaluation model for NSF center and project evaluation.
- Develop and deliver the "Toothpick Factory" (simulation game based on soft skills for classroom delivery) to 159 students and 19 parents as well as facilitated related professional development for 95 faculty.

These systemic changes and outreach initiatives create a statewide unified structure for manufacturing and engineering technologies education that encourages school districts to create career academies aligned with the CAPE Act legislation, technical schools and community colleges to update their programs to align with performance measures based on national industry recognized certifications, opportunities for incumbent workers to earn industry certifications and articulate into college programs, and most importantly – create graduates that have the skills and knowledge required to work in modern, high-skill, high-wage technical careers.

To document our efforts, measure impact, and better understand the current "state" of these technical programs, we are asking for your help to collect enrollment data. We need to acquire the enrollment data for Florida secondary CTE, technical school, and community college programs related to manufacturing. The initial data we are asking for is from the 2007-2008 academic year. It will establish statewide baseline data to track enrollment in manufacturing

related programs from this point forward. It is our desire that we can then have these same reports generated on a recurring annual basis.

Specifically we would like to collect the aggregated data on an annual basis from what appears to be the CCTCMIS WDIS and Survey 5, post-secondary and secondary vocational databases. The data requested would be aggregated by institution and would not get down the individual student level.

The following outline represents the data we would like to collect.

Secondary

For each of the following programs:

- Automation & Production Technology – 9200100
- Engineering Assisting – 8743000
- Industrial Biotechnology – 8736000
- Production Technology – 8604000
- Materials & Process Technology – 8601100
- Technology Systems – 8600400
- Engineering Technology – 8607000
- Electronics Technology - 8600900
- Industrial Machinery Maintenance and Repair - 8743100

We would like to collect the following school-level data:

- District
- School Name and Number
- School Number
- Career and Professional Academy (Y/N)
- Total Student enrollment in each Technology Program
- Gender of Students *(% Male, %Female)*
- Racial/Ethnic Category of Students *(% by category)*
- Internship Participants in Program
- Gender of Internship Participants *(% Male, %Female)*
- Number of Program Students who Graduate with a Std. Diploma
- Gender of Program Graduates *(% Male, %Female)*
- Racial/Ethnic Category of Graduates *(% by category)*
- Industry Certification Identifier
- Industry Certification Outcome
- Percent of graduates employed in mfg/eng occupations or continued on to higher education (*)

Adult Vocational

For each of the following PSAV programs:

- Automation & Production Technology – J100100
- Electrical & Instrumentation Tech (EIT) - I150404
- Electromechanical Tech (EMT) - I150403
- Engineering Related Tech (ERT) - I159999
- Industrial Tech (IT) - I150603
- Micro Electronics Mfg Processing (MEMP) – I150499
- Industrial Plastics (IP) - I480604
- Machining (MACH) - I480503
- Precision Metal Fabrication (PMT) - I480504
- Sheet Metal Fabrication Tech (SMFT) - I480506
- Industrial Electronics (IE) - I470105
- Engineering Tech (ET) -8607000
- Industrial Machinery Maintenance and Repair - I470303

We would like to collect the following school-level data:

- District
- School Name and Number
- Total Student enrollment in each Technology Program
- Gender of Students *(% Male, %Female)*
- Racial/Ethnic Category of Students *(% by category)*
- Internship Participants in Program
- Gender of Internship Participants *(% Male, %Female)*
- Number of OCP Completers
- Gender of OCP Completers *(% Male, %Female)*
- Racial/Ethnic Category OCP Completers *(% by category)*
- Number of Full Program Completers
- Gender of Full Program Graduates *(% Male, %Female)*
- Racial/Ethnic Category of Full Program Graduates *(% by category)*
- Industry Certification Identifier
- Industry Certification Outcome
- Percent of graduates employed in mfg/eng occupations or continued on to higher education (*)

Community & State College

For each College that offers one or more of the following programs and certificates:

- Eng.Tech.-Advanced Manufacturing - 1615.061300
- Eng.Tech.-Advanced Manufacturing - 0615.061300

- Eng.Tech.-Advanced Technology - 1615.040301
- Eng.Tech.-Advanced Technology - 0615.040301
- Eng.Tech.-Electronics - 1615.030312
- Eng.Tech.-Electronics - 0615.030312
- Eng.Tech.-Mechanical Fabrication and Design - 1615.080500
- Eng.Tech.-Mechanical Fabrication and Design - 0615.080500
- Eng.Tech.-Quality - 1615.070201
- Eng.Tech.-Quality - 0615.070201
- Engineering Technology – 1615.000001
- Engineering Technology – 0615.000001
    - Engineering Technology Support Specialist (CCC - 0615061304)
    - Automation (CCC - 0615061301)
    - Lean Manufacturing (CCC - 0615061302)
    - Pneumatics, Hydraulics & Motors For Manufacturing (CCC - 0615061303)
    - Applied Technology Specialist (CCC - 0615040302)
    - Electronics Aide (CCC - 0615030313)
    - Computerized Woodworking (CCC - 0615080501)
    - CNC Machinist (CCC - 0615080502)
    - Lean Six Sigma Green Belt Certificate (CCC - 0615070203)
    - Six Sigma Black Belt Certificate (CCC - 0615070202)
- Aerospace Technology - 1615.080100
- Aerospace Technology - 0615.080100
- Chemical Technology - 1641.030100
- Chemical Technology - 0641.030100
    - Chemical Laboratory Specialist (CCC - 0641030101)
    - Scientific Workplace Preparation (CCC - 0641030102)
- Computer Integrated Manufacturing Technology - 1615.049901
- Computer Integrated Manufacturing Technology - 0615.049901
- Biomedical Engineering Technology - 1615.040101
- Biomedical Engineering Technology - 0615.040101
- Electronics Engineering Technology - 1615.030301
- Electronics Engineering Technology - 0615.030301
    - Basic Electronics Technician (CCC - 0615030310)
    - Electronics Technician (CCC - 0615030309)
    - Laser and Photonics Technician (CCC - 0615030311)
    - Robotics and Simulation Technician (CCC - 0615030314)
- Industrial Management Technology – 1606.200101
- Industrial Management Technology – 0606.200101
- Manufacturing Technology - 1615.060302

- Manufacturing Technology - 0615.060302
- Simulation Technology- 1615.080101
- Simulation Technology- 0615.080101

We would like to collect the following institution-level data:

- College Name
- Total Student enrollment in each Technology Program
- Gender of Students *(% Male, %Female)*
- Racial/Ethnic Category of Students *(% by category)*
- Gender of Internship Participants *(% Male, %Female)*
- Internship Participants in Program
- Number of CCC Completers
- Gender of CCC Completers *(% Male, %Female)*
- Racial/Ethnic Category CCC Completers *(% by category)*
- Number of Full Degree Program Completers
- Gender of Full Degree Program Graduates *(% Male, %Female)*
- Racial/Ethnic Category of Full Degree Program Graduates *(% by category)*
- Industry Certification Identifier
- Industry Certification Outcome
- Percent of graduates employed in mfg/eng occupations or continued on to higher education (*)

As you can see from the preceding tables, we are not requesting any confidential student data. We only need unduplicated headcount data for the programs related to manufacturing and engineering technologies throughout the state. We understand that the requested data element marked with an (*) will require long-term tracking and cross-referencing with the FETPIP unemployment/employment records. We can proceed without this element but would like to find a way to collect this key performance metric.

FLATE has leveraged federal funds to affect these systemic reforms for Manufacturing and STEM programs in support of Florida's advanced manufacturing and engineering technology employers. In order to demonstrate true performance verses activity, we need your assistance to collect the impact data. Thank you for your consideration of this request. Please let me know how I can proceed with the formal request of this data for the 2005-06, 2006-07, and 2007-08 academic years, and then how to formalize the process so that the same reports are generated annually after the appropriate reporting period.

Best Regards,

Eric A. Roe, Ph.D.,
Director, FLATE – Florida Advanced Technological Education Center

From: Baird, Mark [mailto:Mark.Baird@fldoe.org]
Sent: Monday, March 09, 2009 2:14 PM
To: Roe, Eric
Subject: RE: Data Request Committee

Congratulations – the Data Request Committee has approved FLATE's request for secondary, PSAV, and College enrollment data related to Manufacturing and Engineering Technology programs.

I ran the request by the committee last Friday and no objections were raised. Since it is coming from a single source (sans employment data) and there is no Data Warehouse involvement, it does not have to be routed through a more formal approval process. Unfortunately, no one from CCTCMIS was at the meeting, but I sent an e-mail to their Bureau Chief, Gene Kovacs, and asked how we should proceed.

A couple of points came up during the conversation at the DRC meeting that I thought you should know about. First, they thought that you might end up with a goodly number of small-n cells (i.e. less than 10 cases). In situations where enough data points are provided that students might be identified by a combination of race, sex, program enrollment, etc, those small-n cells will not be populated. One suggestion was that you might want to aggregate by CIP four-digit series groupings instead of individual programs. Give that some thought as we move through the process.

I or someone from Gene's shop will contact you regarding where we go from here.

-Mark

Mark E. Baird, Ph.D.
Director of Research and Best Practices
Workforce and Economic Development
Florida Department of Education

From: Roe, Eric [mailto:eroe@hccfl.edu]
Sent: Tuesday, March 03, 2009 3:45 PM
To: Baird, Mark
Subject: Data Request Committee

Mark,
Attached is the final document for Friday's meeting.
Please let me know if you recommend any changes.
Thank you for your time and effort on this initiative.
Eric

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Eric A. Roe, Ph.D.
Director, FLATE - Florida Advanced Technological Education Center
Principal Investigator, Employ Florida Banner Center for Manufacturing
HCC - Brandon
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