



**COMMISSION AGENDA:**

4.15.14 #22

**Commissioner Susan Latvala**

Pinellas County Board of County Commissioners

315 Court Street

Clearwater, FL 33756

(727) 464-3276 Tel (727) 464-3022 Fax

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## **MEMORANDUM**

**TO:** Honorable Members, Board of County Commissioners

**FROM:** Susan Latvala, Chair

**SUBJECT:** Tampa Bay Advanced Manufacturing Skills Initiative

**DATE:** April 10, 2014

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I have attached a copy of the Tampa Bay Advanced Manufacturing Skills Initiative project for your review. Also included are support letters, Charlotte white paper and a projected monthly cash flow chart.

This item will be presented at the April 15th board meeting under Commissioners Miscellaneous.

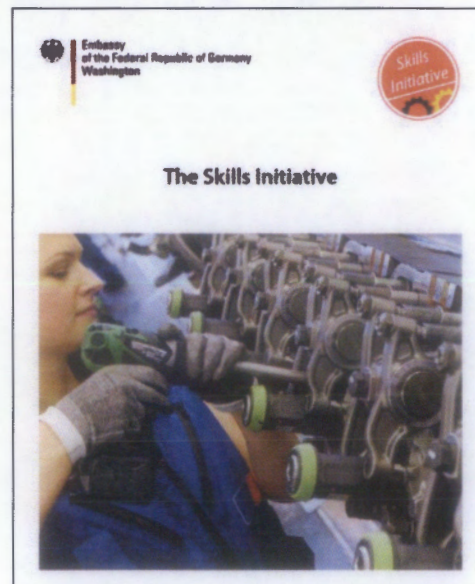
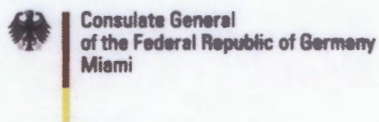
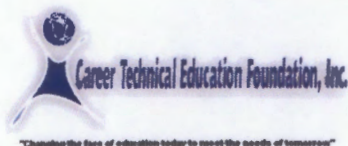
**cc:** Norman Loy, Manager, Board Records  
Paula Gonya, Agenda Coordinator

**Attachments**



# TAMPA BAY ADVANCED MANUFACTURING SKILLS INITIATIVE

**A Tampa Bay Regional Alliance Establishing Regional Industry Certification Training Centers (ICTC's) Using the Internationally Recognized Advanced Manufacturing German Apprenticeship Model**







## **2013 MANUFACTURING GAP ANALYSIS**

*(Hillsborough-Pinellas Manufacturers Gap Study – AUG '13)*

- **Job Vacancies In 107 Skill Sets**
  - 2,139 current job vacancies as of April 2013
  - 2,765 job vacancies within next 12 months
  - 3,457 job vacancies within next 36 months
- **Advanced Manufacturing Position Examples From Top 25 Positions**
  - CNC Machinist–#2
  - Industrial Maintenance Mechanics–#3
  - CNC Machine Operators–#4
  - Quality Inspectors–#10
  - Mechanical Design Engineer–#11
  - Electro-Mechanical Assembler–#14
  - Electronic Test Technician–#20
  - Mill Operator–#25
- **Gap Analysis Recommendation: Explore the German Apprenticeship Model**





# PROJECT RATIONALE

- **German Skills Initiative Publicly/Officially Endorsed By German Embassy/Us Dept. Of Commerce (05/16/12)**
  - Recognized Worldwide For Blend Of Theoretical & Practical Hands-on Apprenticeship Programs (Mentioned in President's 2012 & 2013 State of Union Address)
  - German Companies Have Made Huge Investments In Advanced Manufacturing In The US, But Can't Find Adequate Workforce (i.e., VW, BMW, MERCEDES)
  - German Government Making Worldwide Best Practice Standards, Curriculum & Training Manuals Available To Companies And School Systems in The US
- **Can Be Modified To Meet US Workforce Needs & To Fill Educational Voids Currently Not Provided**
  - Follow successful APPRENTICESHIP 2000 Model In Charlotte, NC
- **Complements Secondary And Post Secondary Education**
  - Sets Up Pipeline To Keep Students Local (2 Years High School + 2 Years Post Secondary Required)





# PURPOSE

- **Establish Industry-driven Advanced Manufacturing ICTC's In 3 Counties (1 In Each)**
  - 3 Innovation Training Centers (ICTC's) To Be Fully Equipped & Tooled For Advanced Manufacturing Training
  - Form Consortium Of 5-10 Manufacturers In Each County
    - To Direct ITC Needs
    - To Hire Apprentices
- **Fill Workforce Skills Void Using German Apprenticeship Model**
  - Grow Own Local Technical Workforce Pipeline Starting With Students At Age 16
  - Create A Cumulative Labor Pool Of Resources With Advanced Manufacturing Skillsets
  - Fill Existing Skills Gap Needs With Apprentices In Starting Positions
- **Strengthen Tampa Bay Economy In Advanced Mfg. & Engineering**
  - Create Highly Skilled Workforce To Attract Advanced Mfg. Companies To Area
  - Give Young Entrepreneurs Skills To Start Up New Ventures





# APPRENTICESHIP 2000 PARTNERSHIP MODEL

- **Evolved From 1995 – 2014 (Started With Austrian And German Company Partnership)**
  - APPRENTICESHIP 2000 Officially Starts In 1996 In Collaboration With Central Piedmont Community College (CPCC)
  - Over The Years, 8 Manufacturers Have Joined APPRENTICESHIP 2000
  - First Graduating Class In 2000 (inspiring the name APPRENTICESHIP 2000)
- **2011–Siemens Locates Power Turbine Manufacturing To Charlotte In Based Upon Workforce Training Programs At CPCC**
  - 2012–Siemens Joins APPRENTICESHIP 2000, Announces 70 Apprentices Will Be Trained Through APPRENTICESHIP 2000 & CPCC
- **2013–CPCC Announces Cooperative Agreement With Germany**
  - Will Offer German IHK (German Industry and Trade Chamber of Commerce) Certifications For Siemens And CPCC Students





# STATISTICAL DATA

## *FROM APPRENTICESHIP 2000 IMPLEMENTATION IN NC*

- **Track Record Of Success**

- Founding Company Has Graduated 51 Apprentices, With 40 Still Employed After 19 Years (since start-up)
- APPRENTICESHIP 2000 Partners Have Retained 85% Of Employees Who Started As Apprentices In High School
- More Than 650 High School Students Have Been Through An Orientation With APPRENTICESHIP 2000 Partner Companies
- APPRENTICESHIP 2000 Partners Have Hired 244 Apprentices Since 1995

- **APPRENTICESHIP 2000 Has Graduated 121 Students**

- 53 Students Are Training As Apprentices This Year





# APPRENTICESHIP 2000 IMPACT ON NORTH CAROLINA

- **Apprenticeship 2000 In Charlotte Has Spawned Many New Apprenticeship Partners In NC**

- 14 NC Based Manufacturing Companies Have Started Apprenticeship Programs Following This Model
- 5 Additional Community Colleges In North Carolina Are Now Offering Apprenticeship Programs With Partner Companies Following This Model
- CEO Roundtable Of The Carolinas Formed In 2012
  - 70 Manufacturers In North And South Carolina Meet Twice A Year
  - Focus Is Fostering New Apprenticeship Partnerships Within Their Companies

- **GIZ, A German Not-for-profit, Locates Office In Charlotte In 2012**

- Assists German Companies Worldwide To Address Workforce Skills Issues
- Bridges Workforce Gaps For German Companies
- Helps German Companies To Establish Apprenticeship Partnerships





# APPRENTICESHIP 2000 WEBSITE



Today's high-tech equipment requires manufacturing companies to have a well trained and highly skilled workforce. The Apprenticeship 2000 program is a 4-year technical training partnership in the Charlotte, NC region designed to develop people for such a workforce. We recruit juniors and seniors from local high schools. Students that qualify for Apprenticeship2000 train for exciting career opportunities!

Some of the advantages include:

AAS degree in **Mechatronics Engineering Technology**

Apprenticeship Certification from NCDOL

Earn a min. of \$34,000/year at completion

Benefits (Medical/Dental, Paid Holidays)

Guaranteed Job after Graduation

Travel Opportunities

8000 hour program

Get paid to go to school!

Careers in the following professions:

Tool and Die Maker

Electronics Technician

CNC Machinist

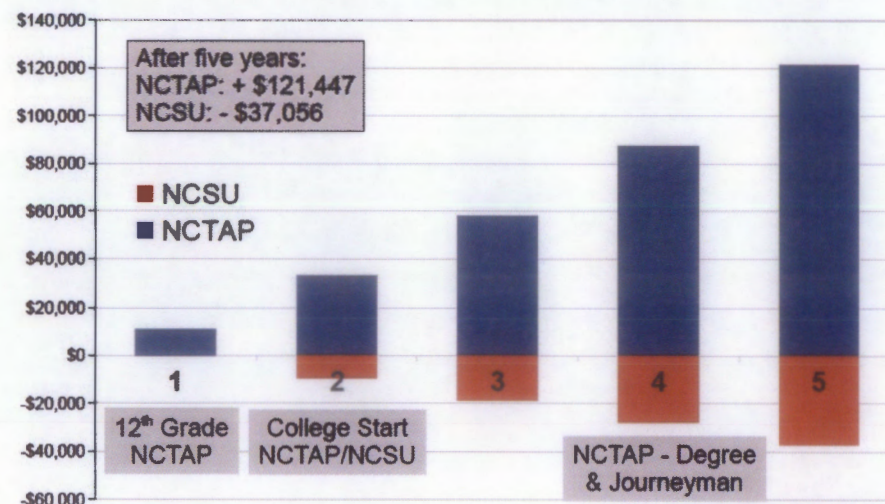
Machine Technician

Mold/Plastics Technician

Welding Fabricator



5-Year Cumulative Cash Flow Comparison  
NCTAP Apprentice - vs - NCSU Engineering Student  
(see assumptions & outcomes on next pages)



NCTAP - career start  
NCSU - senior year





# VISION OF COUNTY ICTC PROGRAMS

- **Requirements For Optimum Effectiveness**
  - 5,000 SF ICTC Within 30 Minute Driving Radius From Manufacturers And Education Facilities (One In Each County)



- Co-located At A Manufacturer, In Rented Space At An Industrial Park, Or Co-located At An Educational Institution (HS, College, Vo-tech, University)
- Managed As A Separate Entity By The TB ICTC Executive Director Under Supervision Of The TB ICTC Governing Board





# PINELLAS COUNTY ICTC PROGRAM

- **Targeted ICTC Collaborative Partners**

- Champion HS – East Lake Engineering Career Academy
- Champion Lead Business – Melitta, Kramski or Oscor
  - Targeted Core Group of Manufacturers – Melitta, Kramski, Oscor, KUP Solutions, Tampa Bay Machining, McCormick Stevenson, PCM Precision, Advanced Protection Technologies, Pero Engineering & Sales, Automated Tool & Mold, CavaForm International, H&S Swanson Tools
- Champion Vo-Tech Education – Pinellas Technical Education Centers (PTEC)
- Champion College – Saint Pete College



# PASCO COUNTY ICTC PROGRAM

- **Targeted ICTC Collaborative Partners**
  - Champion HS – River Ridge Engineering Career Academy
  - Champion Lead Business – Pharmaworks
    - Targeted Core Group of Manufacturers: Pharmaworks, Bauer, Turbine Diagnostics, Bay Tech Industries, Seaway Plastics, EMS, Zeppelin Systems, VLOC, PALL Aeropower
  - Champion Vo-Tech Education – Marchman
  - Champion College – Pasco-Hernando State College (PHSC)





# HERNANDO COUNTY ICTC PROGRAM

- **Targeted ICTC Collaborative Partners**
  - Champion HS – TBD
  - Champion Business – TBD
    - Target Core Group of Manufacturers and Engineers: Chasco Maschining, Aluma-Guard, Chapman Tool & Mold
  - Champion Vo-Tech College – TBD
  - Champion College – Pasco-Hernando State College (PHSC)
  - Champion University St. Leo University



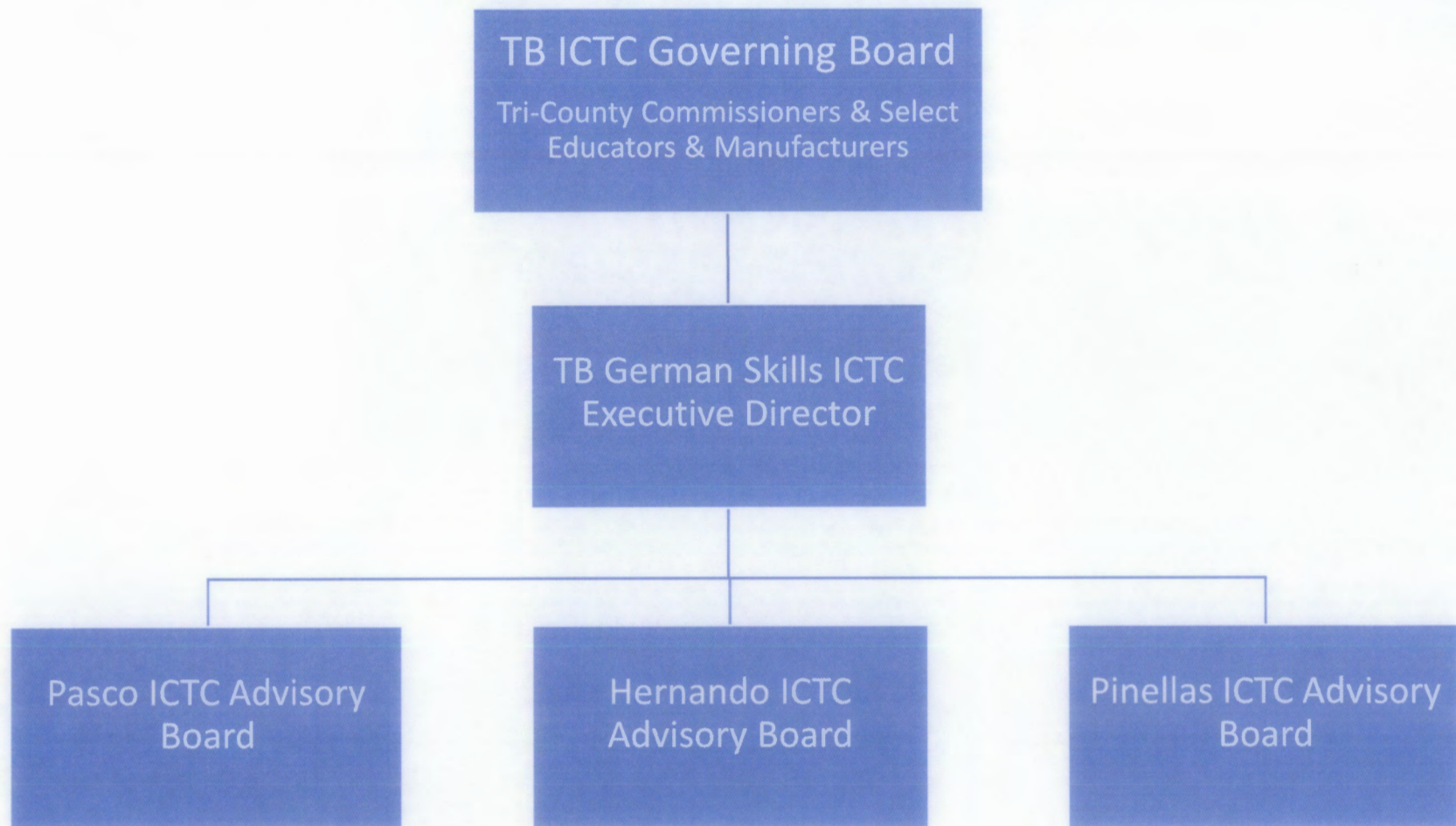
# COMMUNITY STAKEHOLDERS

- **INDUSTRIAL (Manufacturers And Regional Industry Clusters)**
  - Decisions on Advanced Manufacturing Training Requirements
  - Commitments to Participate in Local ITC and to Join Consortium
  - Hiring Apprentices to Train at ICTC and Work at their Company
  - Potential Use of Shared Facilities for ICTC location
- **GOVERNMENT, POLICY MAKERS AND EDC's (Local, State, Regional And Federal)**
  - Funding Commitment
  - Oversight of Funding Distribution in Region
- **EDUCATIONAL INSTITUTIONS**
  - Form Collaborative Partnerships with Industry & Government
  - Potential Use of Facilities for ITC location
- **PARENTS & STUDENTS**
  - Commitment to 3-4 year training program
  - Willingness to sign contract with Manufacturing Employer to Work for Company after 4 year training



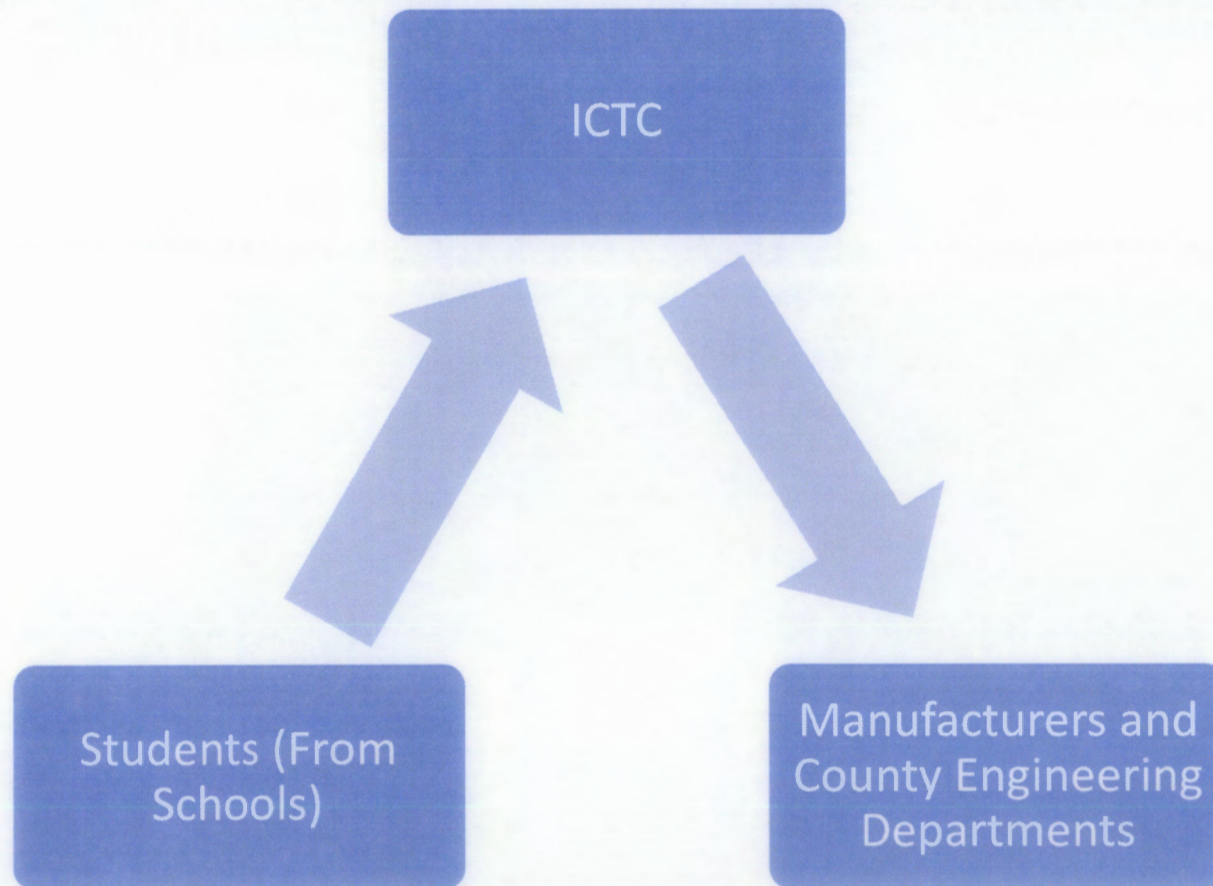


# ORGANIZATION OF TAMPA BAY ADVANCED MANUFACTURING SKILLS ICTC's





# ICTC PROCESS



Local Student Apprentices Learn Advanced Manufacturing Skills At ICTC And Apply Skills At Local Manufacturers and County Engineering Departments





# PROPOSED FUNDING STRUCTURE

- **P3 Public/Private Partnership (Manufacturers, County, State And Federal)**
  - To Provide Space For German Style Skills Training And Equipment
  - To Provide German IHK Qualified Instructors For Training And Mentoring
  - To Provide Four Year German Skills Apprenticeship Training To 180 Students (60/Co) & over 1000 Students in 3 years Totaling Ad Hoc Training
- **Equal Seed Funding Commitments From Each County (3 Counties)**
- **Lobby Legislature For State Match**
  - Potentially from Workforce or Appropriations Budget Line Item
- **Potential US Department Of Commerce Match State And County Funding Commitment**





# COUNTY/STATE SEED FUNDING COMMITMENT

| Funding Entity   | FY 2014-2015<br>Year 1 | FY 2015-2016<br>Year 2 | FY 2016-2017<br>Year 3 | Total Request |
|------------------|------------------------|------------------------|------------------------|---------------|
| State of Florida | \$1,200,000            |                        |                        | \$1,200,000   |
| Hernando         |                        | \$ 200,000             | \$ 200,000             | \$ 400,000    |
| Pasco            |                        | \$ 200,000             | \$ 200,000             | \$ 400,000    |
| Pinellas         |                        | \$ 200,000             | \$ 200,000             | \$ 400,000    |
| US DOC           | TBD                    | TBD                    | TBD                    | TBD           |
| Funding Total    | \$1,200,000            | \$ 600,000             | \$ 600,000             | \$ 2,400,000  |





# ANNUAL BUDGET

| Line Item Expenditure                                    | FY 2014-2015<br>Year 1 | FY 2015-2016<br>Year 2 | FY 2016-2017<br>Year 3 |
|--|------------------------|------------------------|------------------------|
| Regional Executive Director 3 ICTC Directors (Part-Time) | \$ 190,000             | \$ 190,000             | \$ 190,000             |
| Part-Time Instructors                                    | 100,000                | 300,000                | 300,000                |
| Operating Costs  | 260,650                | 260,650                | 260,650                |
| Equipment – Capital Investment & Set Up & Maintenance    | 600,000                | 50,000                 | 50,000                 |
| Supplies/Materials                                       | 45,000                 | 45,000                 | 45,000                 |
| Expenditure Totals                                       | \$1,195,650            | \$ 845,650             | \$ 845,650             |





# ANNUAL PROGRAM REVENUE PROJECTIONS

| Program                               | Annual Enrollment |         |         | Tuition Per Student | 3 Year Projected Revenue |
|---------------------------------------|-------------------|---------|---------|---------------------|--------------------------|
|                                       | Year 1            | Year 2  | Year 3  |                     |                          |
| Advanced Mfg. Apprenticeship Training | 30                | 90      | 180     | \$ 3,400            | \$ 1,020,000             |
| CNC Operator Training                 | 40                | 80      | 80      | \$ 1,250            | \$ 300,000               |
| Welding Training                      | 40                | 80      | 80      | \$ 1,250            | \$ 300,000               |
| Mechatronics Training                 | 40                | 80      | 80      | \$ 1,250            | \$ 300,000               |
| Summer Camp                           | 40                | 40      | 40      | \$ 850              | \$ 102,000               |
| <b>TOTAL REVENUES</b>                 | 286,000           | 640,000 | 946,000 |                     | \$ 1,872,000             |
| <b>STUDENTS</b>                       | 180               | 340     | 370     |                     | 890                      |





## POTENTIAL PRIVATE/PUBLIC CASH CONTRIBUTIONS & DONATIONS

- **Company Partner Contributions**
  - Partner Companies
  - In-kind Cash Contributions From Vendors
- **Philanthropic**
- **Charitable Organizations**
  - Such as Bill & Melinda Gates Foundation, etc.
  - Local Education Foundations
- **Federal/State Grants**
  - Local Workforce Boards
  - US Department of Commerce Workforce Incentive Programs





# 3 YEAR OPERATIONAL PROJECTION

|   | FY 2014-2015<br>Year 1 | FY 2015-2016<br>Year 2 | FY 2016-2017<br>Year 3  |
|---|------------------------|------------------------|---|
| Seed Investment   | \$1,200,000            | \$ 600,000             | \$ 600,000  |
| Program Revenue   | \$ 294,000             | \$ 490,000             | \$ 946,000  |
| Funding Carryover   | 0                      | \$298,350              | \$542,700   |
| Subtotal  | \$ 1,494,000           | \$ 1,388,350           | \$ 2,088,700  |
| Operating Budget  | \$1,195,650            | \$ 845,650             | \$ 845,650  |
| Contingency Account<br><i>(to be applied to next years<br/>budget to supplement county<br/>funding)</i> | \$ 298,350             | \$ 542,700             | \$ 1,243,050<br><i>(CONTINGENCY FUNDS<br/>TO BE USED TO LAUNCH<br/>3 ADDITIONAL ICTC'S)</i> |





# CONTACT INFORMATION

**Bryan Kamm**  
**Assistant Chapter Director**  
**GACC South, Florida Chapter**  
**[gaccfl@gaccsouthfl.com](mailto:gaccfl@gaccsouthfl.com)**  
**813-987-6340 (Office)**  
**813-415-7514 (cell)**



April 4, 2014

|   | AUG '14      | SEPT '14     | OCT '14      | NOV '14      | DEC '14      | JAN '15      | FEB '15      | MAR '15      | APR '15      | MAY '15      | JUNE '15     | JULY '15    | AUG '15     | TOTAL        |           |             |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|--------------|-----------|-------------|
| 1. Cash On Hand                             |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           |             |
| (A) Sales Volume [Dollars]                  |              | ####         | ###          | \$388,484.00 | ####         | \$376,968.00 | ####         | #####        | ###          | ###          | ###          | ###         | ###         |              |           |             |
| 2. Cash Receipts                            |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           |             |
| (a) Cash Sales                              | \$400,000.00 |              |              |              |              |              |              |              |              |              |              |             |             | \$400,000.00 |           |             |
| (b) Collections from Credit Accounts        |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| (c) Loan or Other Cash Injection            |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| 3. Total Cash Receipts                      |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           |             |
| [Total Cash Inflow]                         | \$400,000.00 | \$0.00       | \$0.00       | \$0.00       | \$0.00       | \$0.00       | \$0.00       | \$0.00       | \$0.00       | \$0.00       | \$0.00       | \$0.00      | \$0.00      | \$400,000.00 |           |             |
| 4. Total Cash Available                     |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           |             |
| [Balance cash out] (B)                      | \$400,000.00 | \$400,000.00 | \$394,242.00 | \$388,484.00 | \$382,726.00 | \$376,968.00 | \$351,213.34 | \$325,258.68 | \$261,804.02 | \$198,349.36 | \$134,894.68 | \$64,543.00 | \$43,358.00 |              |           |             |
| 5. Cash Paid Out                            |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           |             |
| (a) Rent                                    |              |              |              |              |              | \$2,680.00   | \$2,680.00   | \$2,680.00   | \$2,680.00   | \$2,680.00   | \$2,680.00   | \$2,680.00  | \$2,680.00  | \$21,440.00  |           |             |
| (b) Gross Wages (excludes withdrawals)      | \$           | 2,778.00     | \$           | 2,778.00     | \$           | 2,778.00     | \$           | 5,228.00     | \$           | 5,228.00     | \$           | 9,375.00    | \$          | \$65,377.00  |           |             |
| (c) Payroll Expenses (Taxes, etc.)          |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| (d) Utilities                               | \$           | 2,000.00     | \$           | 2,000.00     | \$           | 2,000.00     | \$           | 2,000.00     | \$           | 2,000.00     | \$           | 2,000.00    | \$          | \$24,000.00  |           |             |
| (e) Supplies (Office and operating)         |              |              |              |              |              |              | \$200.00     | \$200.00     | \$200.00     | \$200.00     | \$200.00     | \$200.00    | \$200.00    | \$1,400.00   |           |             |
| (f) Repairs and Maintenance                 |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| (g) Advertising                             |              | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00    | \$280.00    | \$3,360.00   |           |             |
| (h) Auto, Delivery, and Travel              | \$           | 420.00       | \$           | 420.00       | \$           | 420.00       | \$           | 420.00       | \$           | 420.00       | \$           | 420.00      | \$          | \$5,040.00   |           |             |
| (i) Accounting and Legal                    |              | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00     | \$280.00    | \$280.00    | \$3,360.00   |           |             |
| (j) Purchases (Training Materials)          |              |              |              |              |              | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00   |              |             |             | \$5,000.00   |           |             |
| (k) Telephone/Internet                      |              |              |              |              |              | \$200.00     | \$200.00     | \$200.00     | \$200.00     | \$200.00     | \$200.00     | \$200.00    | \$200.00    | \$1,600.00   |           |             |
| (l) Cleaning Services                       |              |              |              |              |              | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00  | \$1,000.00  | \$8,000.00   |           |             |
| (m) Insurance                               |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| (n) Taxes (Real Estate, etc.)               |              |              |              |              |              | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00   | \$1,000.00  | \$1,000.00  | \$8,000.00   |           |             |
| (o) Interest                                |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| (p) Other Expenses]                         |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| YEAR 1 -Equipment Set-up For ICTC           |              |              |              |              |              | \$8,333.33   | \$8,333.33   | \$8,333.33   | \$8,333.33   | \$8,333.34   | \$8,333.34   |             |             | \$50,000.00  |           |             |
| YEAR 1 -Renovations For ICTC                |              |              |              |              |              | \$           | 3,333.33     | \$           | 3,333.33     | \$           | 3,333.34     | \$          | 3,333.34    | \$20,000.00  |           |             |
| Raw Materials                               |              |              |              |              |              |              |              |              |              |              | \$           | 3,750.00    | \$          | \$11,250.00  |           |             |
| (q) Miscellaneous [Unspecified]             |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| (r) Subtotal                                | \$0.00       | \$5,758.00   | \$5,758.00   | \$5,758.00   | \$5,758.00   | \$25,754.66  | \$25,954.66  | \$25,954.66  | \$25,954.66  | \$25,954.68  | \$32,851.68  | \$21,185.00 | \$21,185.00 | \$227,827.00 |           |             |
| (s) Loan Principal Payment                  |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| (t) Capital Purchases [Equipment & Tooling] |              |              |              |              |              |              |              | \$           | 37,500.00    | \$           | 37,500.00    | \$          | 37,500.00   | \$150,000.00 |           |             |
| (u) Other Start-up Costs                    |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| (v) Reserve and/or Escrow [Specify]         |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| (w) Owner's Withdrawal                      |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| 6. Total Cash Paid Out                      |              |              |              |              |              |              |              |              |              |              |              |             |             | \$0.00       |           |             |
| [Total Cash Outflow]                        | \$0.00       | \$5,758.00   | \$5,758.00   | \$5,758.00   | \$5,758.00   | \$25,754.66  | \$25,954.66  | \$63,454.66  | \$63,454.66  | \$63,454.68  | \$70,351.68  | \$21,185.00 | \$21,185.00 | \$377,827.00 |           |             |
| 7. Cash Position                            |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           |             |
| [End of month] (4 minus 6)                  | \$400,000.00 | \$394,242.00 | \$388,484.00 | \$382,726.00 | \$376,968.00 | \$361,213.34 | \$325,258.68 | \$261,804.02 | \$198,349.36 | \$134,894.68 | \$64,543.00  | \$43,358.00 | \$22,173.00 |              |           |             |
| Essential Operating Data                    |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           |             |
| [Non-cash flow information]                 |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           |             |
| A. Sales Volume [Dollars]                   |              |              |              |              |              |              |              |              |              |              |              | \$          | 34,000.00   | \$           | 34,000.00 | \$68,000.00 |
| B. Accounts Receivable [End of Month]       |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           |             |
| C. Bad Debt [End of Month]                  |              |              |              |              |              |              |              |              |              |              |              |             |             |              |           | \$0.00      |



## **BENEFITS OF ADVANCED MANUFACTURING SKILLS INDUSTRY CERTIFICATION TRAINING CENTERS (ICTC's)**

- **PROVEN APPRENTICESHIP MODEL FROM CHARLOTTE, NC** (see <http://www.apprenticeship2000.com>)
  - A program being promoted nationally through German Skills Initiative Endorsed by the U.S. Department of Commerce and German Embassy launched in 2012. See: <http://m.germany.info/contentblob/3846858/Daten/3101511/SkillsInitiativeBrochurePDFalt.pdf>
  - **GERMAN AMBASSADOR PETER AMMON:** *"Skills Initiative is a win-win idea. Everyone benefits. German-American cooperation in workforce skills development will provide opportunities in local communities across the USA for good jobs, quality training and businesses that succeed in the US and global markets."*
- **FISCALLY SOUND ROI FOR TRI-COUNTY/STATE MATCH FUNDING**
  - 180 Student Apprentices Training at ICTC & Working for Companies
  - 590 Student/Trainees Going Through 6 week Certification Programs
  - 120 High School Students Participating in Summer Camp
  - 890 Students Affected by ICTC Programs in 3 Years
  - State/County 3 year ROI (\$2.4 M/890 students = \$2,697 per student)
  - Self-Sustaining Program after 3 years
- **ECONOMICAL SYSTEM OF POOLING RESOURCES**
  - Skills Needs Directed by Advanced Manufacturers in Tri-County area
  - One Executive Director over all ICTC's. One part time Coordinator, two part time Instructors at each Training Center
- **BRIDGES MANUFACTURERS, COMMUNITY COLLEGES WITH HIGH SCHOOL ENGINEERING ACADEMY STUDENTS**
  - 2+2 apprenticeship program (2 years HS; 2 years post-secondary)
  - Directs local HS students into local post-secondary education
  - ICTC focuses on practical hands-on training using global standards
  - Collaborates with post-secondary to provide mandatory academics
  - Students paid while working & going to school during 4 year program
  - Students earn college credits and industry certifications without debt
- **HELPS MANUFACTURERS FIND THE SKILLED WORKFORCE THEY NEED**
  - See Hillsborough Pinellas Manufacturing Skills Gap Analysis (<http://www.manufacturingskillsgap.com>)
  - Two types of training courses: 4 year apprenticeships and 6 week "hands on training" in specific manufacturing skills.
  - Fee for Apprenticeship Training is \$3,400/yr/student; Fee for 6 week Certifications is \$1,250/class/student
- **PRODUCES ECONOMIC TOOL TO ATTRACT GROWING NUMBER OF EUROPEAN ADVANCED MANUFACTURERS LOOKING TO MOVE TO USA**
  - Michael Preston, Enterprise Florida *"I need this tool in my tool box."*



## **ATTACHMENT J – IMPACT OF APPRENTICESHIP 2000 IN CHARLOTTE, NC**

### **Apprenticeship 2000 (Ameritech, Blum, Chiron, Daetwyler, Pfaff Molds, Sarstedt, Siemens, Timken)**

In 1995, Blum, Inc., a subsidiary of Julius Blum GmbH from Austria, started the first apprenticeship program in the Charlotte area using the Austrian, German, and Swiss dual system as a model. After many attempts to train workers with “so called” manufacturing experience available on the market, the company found these workers lacking the technical experience and innovation required for their workforce. These weaknesses led Blum to the apprenticeship approach. Because Blum lacked the number of students required to fill a class at the local community college, Blum decided to train the workers themselves.

Blum interviewed some students from the local high schools interested in the apprenticeship program and selected their apprentices. Blum learned through this experience, that given the opportunity, American students were just as capable of learning the technical skills as the apprentices at their parent company in Austria. From Blum’s success in this first year trial, Blum began discussions with other advanced manufacturing companies in the area who shared the same dilemma of not being able to find the skilled technicians, but not having enough students to support a full class at the community college. From these discussions Apprenticeship 2000 was founded and launched by Blum and Daetwyler in 1996, with Timken, Ameritech and Sarstedt gradually joining forces in the consortium. It grew to 5 companies who now together can meet the minimum 8 student class size requirements of the community college. Together they approached Central Piedmont Community College (CPCC) with their training requirements and CPCC started providing the specialized class room training. The program was called Apprenticeship 2000, because, being a four year apprenticeship program, the first class graduation would take place in the year 2000. Apprenticeship 2000 offers specialized apprenticeship training for the following skilled professions:

- Tool and Die Maker
- Electronics Technician
- CNC Machinist
- Machine Technician
- Mold/Plastics Technician
- Welding Fabricator
- Quality Technician

Benefits of the program advertised on the website are:

- AAS degree in **Mechatronics Engineering Technology**



- Apprenticeship Certification from NCDOL
- Earn a min. of \$34,000/year at completion
- Benefits (Medical/Dental, Paid Holidays)
- Guaranteed Job after Graduation
- Possible Travel Opportunities
- 8000 hour program
- Tuition is paid 100% by companies
- Get paid to go to school!

Beginning each December Apprenticeship 2000 holds an open house for students and parents every year during their junior or senior year to visit each of the companies. From this open house, students can sign up for a four day orientation that will be held together with two companies for 3 ½ hours each day after school. After orientation the companies select their candidates for a six week summer paid internship program to take place between their junior and senior year. After completing the summer internship, the companies offer OJT (on-the-job- training) during their senior year, if selected as apprentices. Once selected, the student leaves the high school at noon to work for the company in the afternoon.

In addition, Blum has shared with us the following information:

- Tuition is paid by the Apprenticeship 2000 partner companies 100% (books are covered 50%)
- Guaranteed salary at end of apprenticeship program is \$34,000/year
- Apprenticeship wages start at \$9.- and goes up to \$14.-. Blum has monthly evaluations that could result in higher pay every 6 months
- The senior year is a 50/ 50 deal with the high schools
- Half a day at the high school and the afternoon at the partner companies
- This works really well since after all the years the Apprenticeship 2000 program has established relationships with counselors in various high schools
- The counselors help us with finding the right candidates and especially help with scheduling the right courses for the senior year

Blum reports an incredible retention rate of 80% of the more than 50 trainees that have come through their apprenticeship program since its inception. Today, 19 years later, many of these trainees have advanced into management and engineering roles within the company. Below are some statistics for Blum and the Apprenticeship 2000 program over 19 years as follows:

#### **Blum**

- 8 partner companies recruit from 25 local high schools
- Blum alone has graduated 51 apprentices



- Blum alone has an 80% retention rate of graduated apprentices who have been working more than 5 years with Blum since graduating from the program
- All who have left Blum are employed elsewhere using the skills they learned through Apprenticeship 2000

#### **Apprenticeship 2000**

- In the last 19 years more than 650 high school students have been through an orientation with the companies
- The partnership collectively have hired 244 apprentices since 1995
- The partnership collectively have graduated 121 students
- Collectively, 53 students are training as apprentices in this year's program

The dual model works for small sized companies like Ameritech, as well as large company's like Timken with 1000+ employees. Apprenticeship 2000 has a mixture of European and American companies in its partnership. Over the years the Apprenticeship 2000 consortium has grown to 8 companies adding Pfaff Molds, Siemens and most recently Chiron. Currently, this consortium has decided not to add additional companies due to control and management relating to this size of consortium and all of the collective needs being met. The reason this partnership works is best summed up by Andreas Thurner, Blum's Apprenticeship Training Manager, ***"The important thing is that the commitment from the top management has to be there. We all plan multiple years ahead and therefore have the funds and understanding that we have to plan and commit to this training model."***

Blum's apprenticeship program is probably the best example in the United States, where the European based apprenticeship Education System has been modeled successfully. The four year apprenticeship program starts at 17 years old with senior High School students. Blum and the Apprenticeship partners in the consortium replicate the hands-on practical training practices similar to how it is being done in Europe, by actual hands-on training in the work place. In fact, since the program's inception, Blum has dedicated more than 10,000 square feet of training space for a training center within their company's facility. Blum also put in place full time paid instructors and the company has invested millions of dollars into specialized equipment in the training center. This practice more commonly takes place in Europe but investments of this scale are only used by certain companies involved in the dual system.

Siemens is the most recent partner to join the Apprenticeship 2000 consortium. Incidentally, it relocated its power generator facility from Orlando to Charlotte because of the success of the German Dual system in Charlotte. Siemens will eventually train and fill up to 70 apprenticeship positions in cooperation with



Apprenticeship 2000. With its inclusion into the consortium, CPCC has recently announced a cooperative agreement with the German IHK in Karlsruhe to begin offering German IHK certified training at CPCC. Clearly, the location of Siemens to Charlotte and the progress within CPCC could not have been made without the foresight, vision and success of the Apprenticeship 2000 consortium.

Now 19 years later, the German advanced manufacturing business community in the Greater Charlotte area has grown to over 200 German owned manufacturing subsidiaries. This is a classic case study and model economic development example where industry-driven training needs are met by the community and the community prospers from the initiative.

The Apprenticeship 2000 example provides measurable and tangible proof that the European Dual System of Education can affect positive change to a community. It is also evidence that if the community is willing to listen to the needs of industry and participate in joint efforts to deliver the training required for advanced manufacturing, it will attract other companies with the same high tech advanced training needs. The progress to date would not have been possible, had Blum and other local industries not banded together as the Apprenticeship 2000 consortium to challenge the local education system and drive the training needs required by their companies.

To learn more about Apprenticeship 2000, please visit their website at <http://apprenticeship2000.com/>.

However, though this model is certainly one of the best in the country, the Apprenticeship 2000 consortium's decision not to take on more partners has presented challenges to other small to medium companies even within the Greater Charlotte area who want to follow the dual system approach and create apprenticeships. Students from other firms can enroll in the CPCC classes intended for Apprenticeship 2000 students, as long as there is room. But, usually the challenges are far deeper than just class availability. For example, if other companies have needs for special classes that do not match the classes offered for the Apprenticeship 2000 students, the companies face run into the same obstacle that Apprenticeship 2000 companies faced in having too few students to support a community college class. This problem becomes harder to solve for firms outside the CPCC service area. But, fortunately, Apprenticeship 2000 has established a strong foundation in the Charlotte area for other areas to model their own programs.

Though Apprenticeship 2000 has closed its door to new partners, it has helped to spawn and support multiple apprenticeship programs to be established based on the Apprenticeship 2000 model in different counties in the Carolinas. Below are



some examples including the apprenticeship support by the North Carolina Department of Labor for apprenticeship programs:

- Apprenticeship Catawba (a 5 company partnership with CVCC)
- Greiner Bio-One in Monroe NC together with SPCC (South Piedmont Community College)
- NCTAP (North Carolina Triangle Apprenticeship Program) A 7 company partnership with Wake Tech Community college
- STEAG and CEO Roundtable of Carolinas' Advanced Manufacturing Companies (70 companies in North and South Carolina)
- STEAG Apprenticeship College Training (ACT) Program with Gaston College
- Location of German International Cooperation (GIZ) to Charlotte in June 2013, a German not-for-profit that helps German companies implement the German Dual Education vocational training system  
<http://www.giz.de/en/mediacenter/13952.html>
- North Carolina Department of Commerce's Apprenticeship Program  
<http://www.nclabor.com/appren/appindex.htm> \*

\*There is a note at the former North Carolina Department of Labor site that says the following "***The Apprenticeship and Training Bureau transferred to the N.C. Department of Commerce effective Jan. 1, 2014. The new phone number is 919-814-0303.***"

The success of Apprenticeship 2000 has clearly impacted the apprenticeship programs in North Carolina economic development, so much so, that the State's Apprenticeship Program has been transferred from the North Carolina Department of Labor to the North Carolina Department of Commerce!

Below are summaries about some of the existing programs ongoing in North Carolina that have been spawned by the Apprenticeship 2000 success.

**Apprenticeship Catawba (A consortium of 5 companies with CVCC)**

On September 13, 2013, The Hickory Record reported the start-up of Apprenticeship Catawba. It is a community collaboration starting with a consortium of 5 companies (**Technibilt, Sarstedt USA, Tenowo Nonwovens, GKN Sinter Metals and ZF Chassis Components**), the Catawba Valley Community College, the North Carolina Department of Labor, as well as high schools in Alexander, Catawba and Lincoln counties to offer four year apprenticeships.

The apprenticeship Catawba model is very similar to Apprenticeship 2000:

- Orientation site visits to the companies during the junior year
- Interviewing and Screening of Companies and Students
- Selection of candidates for a week long orientation in the Spring

- A six week paid internship during the summer
- Selection of the top candidates to begin the four apprenticeship programs
- First year of apprenticeship starts in the senior year where the student works OJT (on-the-job-training hours (half day at school in the morning and at the company in the afternoon
- Apprentices go to work full-time after high school graduation
- In the second year, students begin to attend the community college one day a week and work at the company for four days a week
- Company pays for college tuition and books
- After the four year program is over, the apprentice graduates with an Associate Degree in Mechatronics Engineering Technology or Computer Integrated Machining technology
- Apprentices also receive a Journeyman's Certificate through the NC Department of Labor signifying completion of 8,000 hours of on-the-job-training
- Apprentices who complete the program successfully have a guaranteed job waiting for them starting at \$34,000 or more

This is an example how one successful pilot in a region can spark interest and support within the community, and how the momentum and enthusiasm can build within that region.

#### **North Carolina Triangle Apprenticeship Program (NCTAP)**

Below is the description of the NCTAP directly off the website:

*"The NCTAP is an apprenticeship program designed to develop experts needed in the modern workforce. An apprenticeship offers a unique start to a professional career. The program, based in North Carolina's Triangle area, focuses on integrated basic training which develops technical, methodical, and social skills. The core training utilizes hands-on approach to develop skills across a wide range of disciplines. Starting in the 11<sup>th</sup> grade of high school, this 4-year program is divided into modules, with classes at Wake Tech Community College and paid, on-the-job training at participating Triangle employers. **NCTAP is proud to be associated with Apprenticeship 2000, a highly successful program in the Charlotte area, and the NC Department of Commerce's Apprenticeship and Training Bureau**".*

There are seven partnering companies in collaboration with NCTAP. These companies are:

- Allied Automation – Apex, NC
- ATI Industrial Automation – Apex, NC
- Buehler Aeroglide – Cary, NC

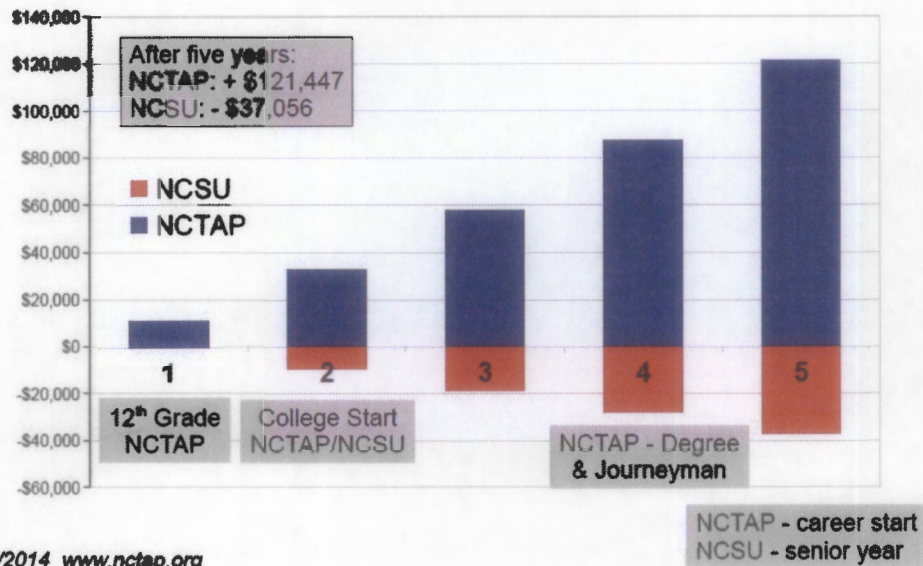


- **Captiveaire – Youngsville, NC**
- **Madern USA – Apex, NC**
- **Shunk – Morrisville, NC**
- **Superior Tooling – Wake Forest, NC**

Below is an excerpt from the NCTAP website comparing the NCTAP Apprenticeship program with costs incurred as a North Carolina State University Engineering student:



### 5-Year Cumulative Cash Flow Comparison NCTAP Apprentice - vs - NCSU Engineering Student (see assumptions & outcomes on next pages)



### 5-Year Cumulative Cash Flow Comparison NCTAP Apprentice - vs - NCSU Engineering Student ~ Assumptions ~

#### NCTAP

- living costs identical to NCSU
- income based on current (2/2014) pay scales, fixed over duration
- no inclusion of bonuses, OT, value of any benefits
- value of Wake Tech tuition and fees is \$1,242.50/yr x 3 years = \$3,727.50, applied for years 2-4, fixed to 2014 costs
- costs for books & supplies at Wake Tech not included in calculations

#### NCSU

- all tuition, fees, etc. fixed to 2014 costs:
- <http://www.ncsu.edu/future-students/can-i-afford-it/>
- no debt service included
- living costs identical to NCTAP
- no additional income during school or breaks
- engineering degree completed in eight semesters

2/2014 www.nctap.org





## 5-Year Cumulative Cash Flow Comparison NCTAP Apprentice - vs - NCSU Engineering Student ~ Outcomes ~

### NCTAP

- \$121,447 cumulative income
- Four years industrial experience
- Two-year, Associate's Degree in Applied Science - Mechatronics
- College credits transfer into 4-year degree program, commonly earned later
- Journeyman's Certificate from NCDOC & USDOL
- Guaranteed job after NCTAP graduation
- No college costs or debt

### NCSU

- \$37,056 cumulative college costs
- No industrial experience
- Bachelor of Science Degree in Engineering
- No guarantee of a job
- \$23,000 average college debt at graduation:
- [http://projectonstudentdebt.org/state\\_by\\_state-data.php](http://projectonstudentdebt.org/state_by_state-data.php)

2/2014 [www.nctap.org](http://www.nctap.org)

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### **STEAG and CEO Roundtable of Carolinas' Advanced Manufacturing Companies**

In Kings Mountain, NC, Hans Hartenstein, President of the German-owned company, STEAG Energy Services, LLC, wanted to start an apprenticeship program for his company. He first looked to the Apprenticeship 2000 consortium, but quickly learned that the consortium was not taking on new partners. Also, his local community college had not yet developed a program to accommodate his apprentices. He then began discussions with other companies in the area that also wanted to grow apprenticeship programs and found there were a great many companies willing to participate. With this encouragement, he started the CEO Roundtable of Carolina's Advanced Manufacturing Companies (including Apprenticeship 2000 companies) to explore opportunities within the area to increase the apprenticeship programs. The CEO Roundtable meets once every six months or so. It provides a venue for advanced manufacturing companies to meet to discuss efforts in the area to close skills gap, including implementing apprenticeship programs in the area. The goal is for all companies to be well informed and to collaborate on improving the workforce development in the area. This forum has launched an excellent collaboration in the Greater Charlotte area that includes companies and educational institutions from North and South Carolina.

STEAG announced in August 2013 the start of their new apprenticeship program, the STEAG Apprenticeship College Training (ACT) program. It was recently registered with the North Carolina Department of Labor. Every year, STEAG hires 3 apprentices for a

three year program to become “Chemical Operators” and 2 apprentices for a two year program to become “Industrial Mechanics”. Training is taking place in collaboration with Gaston College. At the end of the program, the apprentices will receive a “Completion of Registered Apprenticeship” certificate and an Associate Degree from Gaston College.

Another example of an innovative concept for high school proposed for the Charlotte area is the concept for the Entrepreneur High School which is being founded by a German national Hans Freulich.

Below is a brief summary of the proposed high school.

### **Entrepreneur High School**

Also recently proposed in the Charlotte is a Vocational-Technical Charter High School for the area, called the Entrepreneur High School. The first major hurdle, approval by the State of North Carolina, has been overcome. However, sufficient funding still needs to be secured to implement the Entrepreneur High School. This innovative approach to education is very similar to the German Berufsschule and extends well beyond the capabilities of a normal public school system. It is unclear whether the school will be implemented.

The flyer for the proposed Entrepreneur High School asks the following questions:

- Want to have a good paying job at age 18?
- Want to avoid paying back loans for college tuition?
- Want to start your own business?
- Want to learn in a 21<sup>st</sup> century environment with a laptop for each student?
- Want to attend a high school that focuses on your individual needs and preferences?

Specialized career tracks are proposed to being offered are:

- Automotive
- Carpentry
- Electrical
- HVAC
- Masonry
- Plumbing
- Welding
- Advanced Metal Manufacturing Technologies
- Mechatronics
- Robotics
- 3D Printing
- Technical Computer Design



- Advanced Industrial Welding Technologies

Successful apprenticeship programs set the stage for innovative charter schools like this one to be formed within the region. These students would be prime candidates for replicating aspects of the German Dual Education System.

Although the German Dual Education system cannot and should not be implemented in the U.S. in its entirety, the dual system can inspire the development of pilots that extend beyond the boundaries of the normal public school system. It will take an innovative partnership between all the stakeholder groups. Manufacturing companies can be the driving force in establishing a robust training curriculum based upon the successful German Dual Education system.

### **Education Stakeholders involved in the Greater Charlotte Area**

Several regional high schools are already involved in the German dual education apprenticeship model, including:

- Alexander County School
- Cabarrus County Schools
- Catawba County Schools
- Charlotte-Mecklenburg Schools
- Gaston County Schools
- Iredell-Statesville Schools
- Lincoln County Schools
- Mooresville Graded School District

The three regional Community Colleges involved in the German apprenticeship model are:

- Catawba Valley Community College
- Central Piedmont Community College
- Gaston College

Altogether, the result of all these efforts collectively for the Greater Charlotte area is a strong and growing well trained workforce pool of young students that are ready for work with highly technical skills. This strong labor pool is an attractive draw for existing

industrial employers, as well as new prospective companies interested in locating to the area.

The acceptance and enthusiasm of apprenticeship programs in the Greater Charlotte area did not happen overnight. But now, all four major stakeholder groups are committed and engaged. Perhaps the most important and most difficult group to reach is the acceptance and understanding of the parent and student stakeholder group. The general public in the Greater Charlotte area has witnessed living proof how the change has stimulated growth in the community. More students and parents are accepting apprenticeship as a viable alternative to the traditional choice of going to a four year university, often incurring a debt that is difficult to repay and hoping to find a decent paying job with no practical work experience when you graduate.

One outstanding example of high school programs in the Charlotte area successfully providing the training required for apprenticeship programs is the Olympic Community of Schools. Below is a brief summary about their program and successes.

#### **The Olympic Community of Schools - Work-Based Learning and Skills Training**

The Olympic Community of Schools has received extensive media attention -- local, regional, and national -- because of its meaningful work-based learning program which proudly features a German-styled apprenticeship program accomplished through a partnership with a coalition of 10 European advanced manufacturing firms located in the Charlotte, NC area.

Olympic received a \$1.2 M grant in 2005 from the Bill and Melinda Gates Foundation and transformed itself from a normal secondary educational institution of 2,000 students into a campus of five theme-based high schools with each also housing a career academy that follows the structure created by the National Academy Foundation (<http://naf.org/>). Scores on state mandated tests have increased by over 65% since Olympic became 5 high schools emphasizing small school core values, authentic project-based learning, and career readiness.

One of the options for students at Olympic is attending its STEM High School and enrolling in their career Academy of Engineering. Beginning in their Freshman year, these students take a nationally acclaimed pre-Engineering curriculum created by Project Lead The Way as their electives. In addition to their normal and customary college preparatory classes, a typical sequencing of elective classes for an Olympic Academy of Engineering students looks like:

#### **Freshman Year**

Drafting

Introduction to Engineering



**Sophomore**

Principles of Engineering  
Digital Electronics

**Junior**

Computer Integrated Manufacturing  
Physics  
Introduction to Energy

**Senior**

Engineering Design & Development  
Mechatronics, Construction Academy, or Energy Workforce Classes at the Community College

One of the key differentiating features of a career academy is providing students a continuum of work-based learning experiences in pursuing the objective of preparing “career ready” teens. The career academy sequence of experiences as well as the direction of the career academy is determined solely by a Board of Directors comprised entirely of STEM employers and practitioners (for example – the Board is responsible for deciding what classes and “career ready” experiences a student must complete to earn a special Academy of Engineering certificate at graduation).

A normal sequence of work-based learning experiences for our students includes:

**Freshman Year**

Career Assessment; Resume Writing; Career Fair; Project-Based Learning; Vex Robotics

**Sophomore**

Job Shadow; Employer Field Trips; Vex Robotics; Mechanical Aptitude Test

**Junior**

Entrepreneurial Engineering Design Competition; Mock Job Interviews; FIRST Robotics; Internship & Apprenticeship Competitions

**Senior**

Internships or Apprenticeships; FIRST Robotics; Career and College Cost-Benefit Analysis; LinkedIn

**Apprenticeships and Internships**

Olympic contends that work-based learning is vital for a student to graduate both career and college ready, and that some form of paid workplace experience is essential.

Olympic actively and continuously approaches the business community with attempting to provide its students more positions to “learn and earn.”

With its apprenticeship program, Olympic becomes a strategic partner by actively recruiting students based on the skill sets and qualities requested by partner-employers. A coordinated campaign has been created in a collaborative fashion to inform students, parents, and educators about the evolution of high skills manufacturing in America and the great career opportunities which exist.

Here is an example of a program created by our public-private partnership to increase awareness about advanced manufacturing and the available career pathways --  
<https://www.emergingissuescommons.com/voices/37>

### **Public-Private Partnership**

Since 2006 when Olympic became a small schools campus, over 250 business have volunteered 18,000 hours and donated over 6 M in cash and in-kind towards joint efforts to make Olympic students “career ready.” Olympic actively pursues the business community in asking them to accept ownership and a key leadership role with education in the 21<sup>st</sup> century. Today one of the most highly emphasized objectives of public education is creating “career ready” students which is vital since 4 M jobs remain unfilled in America today due to a serious skills gap that exist because of a disconnect between business and education. Employers know what “career ready” is or isn’t, and this fact remains the key reason why Olympics’ 5 different career academies only allow business professionals and practitioners to serve on the Board of Directors and make decisions about how best to prepare the workforce of the 21<sup>st</sup> century with a basis of knowledge and skills that is relevant.

In 2014, as a result of the leadership and engagement of the business community, Olympic will open a new school with an advanced manufacturing theme which features an Advanced Technology Center providing students a fundamental basis in high skills manufacturing.

### **Project-Based Learning**

Olympic emphasizes project-based learning where students can demonstrate mastery of classroom content through the application of theory in a real world context. Many of its “classroom projects” have been designed in collaboration between educators and real world practitioners. This results in projects like the one where its Engineering, Architectural, Construction, and Energy academy students actually build a Habitat for Humanity house in its parking lot every year (its Business and Finance career academy students help raise the \$70,000 needed to build it and earn paid Summer internships depending on how well they perform).

In 2010, as part of a \$50M international competition sponsored by the Microsoft Corporation to foster more innovative project-based learning that helps students develop 21<sup>st</sup> century work-based skills, Olympic was recognized as designing three of the top six high school classroom projects in the nation.

### **Other Media Samples and Links about Olympic and its German Apprenticeship Program:**

PBS film about reinventing the Talent Pipeline (All students/apprentices seen are from Olympic) --  
[http://youtu.be/FiJ6SU\\_0bMI](http://youtu.be/FiJ6SU_0bMI)



**NC Institute for Emerging Issues**

Here is a film feature created by the NC Institute for Emerging Issues which was shown to 1,200 NC leaders a year ago (including politicians like Governors McCrory and Hunt, U.S. Senators Burr and Hagan, and business leaders throughout NC) stressing the importance of creating a state environment where advanced manufacturing can flourish and challenging businesses to provide work-based learning so that can occur (internships & apprenticeships) --

<https://www.emergingissuescommons.com/voices/37>

All the students/apprentices you see in the film linked above are from Olympic.

**CNN Special "Putting America Back to Work"** (All students/apprentices seen are from Olympic)

<http://streams.synapticdigital.com/previewlinks/SiemensCNN.wmv>

**NPR Different Road to Success** (Rebeca Espinal is an Olympic graduate)

<http://www.npr.org/2012/07/26/157033600/bypassing-college-dreams-a-different-road-to-work>



January 21, 2014

Pinellas County Administrator  
Robert LaSala  
315 Court Street  
Clearwater, Florida 33756

RE: Tampa Bay German Skills Initiative Project

Dear Mr. LaSala,

I have recently been informed regarding a German Skills Initiative project that would benefit manufacturers in the Tampa Bay region. As I'm sure you are aware manufacturers are faced with an aging skilled workforce and we face a systemic lack in training and attracting new workers into the industry.

A recent skills gap analysis spearheaded by the Tampa Bay Workforce Alliance showed a demand for nearly 3,500 new employees in our industry over the next 24-36 months. The Tampa Bay region houses nearly 25% of the states 17,000 manufacturers and Pinellas County is very strong in manufacturing especially advanced manufacturing processes. Manufacturing is an important economic catalyst in that we are stable businesses, generally have a higher wage structure than other industries, push continuing skill advancement and bring money into the community since our customers are usually out of region, out of state or out of country.

I strongly support this initiative that can leverage a program that is long established and is a model of success. I am aware of and support some of the excellent programs going on in selected Pinellas County High Schools as well as the statewide TRADE Grant initiative being managed by St. Petersburg College involving other regional community colleges. These are promising and excellent programs.

However, I believe the German Skills project is unique and a highly complimentary adjunct to these other initiatives. As I understand it, this initiative will emphasize the German training model using German training materials and German instructors who have been through the German system and are German IHK Certified. This can be a very valuable and critical adjunct to our existing and developing structure especially as technology demands that we continue to expand and advance our training options.

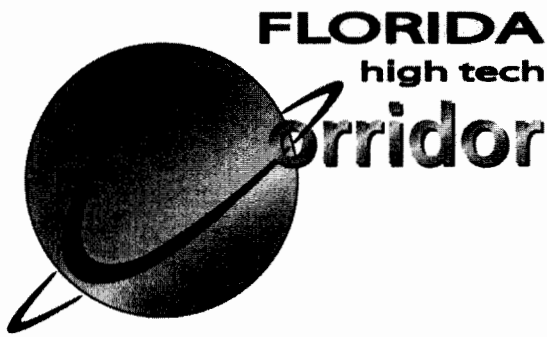
Again, I believe this program is important to the continued health of the manufacturing sector in Pinellas County and the region and strongly encourage your support.

Sincerely,

Jerry Custin  
President/CEO

cc: Commissioner Susan Latvala





April 2, 2014

Bob LaSala  
Pinellas County Administrator  
315 Court St.  
Clearwater, FL 33756

Re: Tampa Bay Advanced Manufacturing Skills Initiative

Dear Mr. LaSala:

On behalf of the Florida High Tech Corridor Council (FHTCC) and its economic development, workforce, higher education and industry partners, I strongly support the Tampa Bay regional alliance proposal for the Tampa Bay Advanced Manufacturing Skills Initiative.

FHTCC was established by the Florida Legislature in 1996 to grow high tech industry and innovation through partnerships that support research, marketing, workforce and entrepreneurship within the 23-county service areas of the University of South Florida, the University of Central Florida and the University of Florida, including Pasco, Hernando and Pinellas counties represented in the regional alliance. These three counties have grown in manufacturing business and I look forward to the strides in further growth with this initiative to train youth.

These counties are home to manufactures, including Pall Aeropower Corp., Zephyrhills Bottled Water Co., VLOC, 3M Electronic Monitoring, Accuform Signs and Airdyne Aerospace. In fact, Pinellas County is ranked second in the state for manufacturing employment and third in the state for manufacturing firms. The strong infrastructure necessary for expanding manufacturing firms includes world-class airports serving passenger and cargo needs, major seaports and convenient access to interstate highways.

Advanced manufacturing is a matter of fundamental importance to the economic strength and national security of the United States. It provides high-quality career paths in the community and increases productivity. It is an important source of exports. It is a key source of technological innovation, and provides essential goods and equipment for commercial markets, the military, the intelligence community and homeland security agencies.

With such an importance on manufacturing, we must continue to have talent in the pipeline. FHTCC makes the commitment to cultivate high tech talent itself, through its techPATH workforce initiative, and is proud to stand by the regional partners in their initiative.

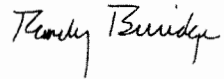
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A regional economic development initiative of:



FHTCC will continue our commitment to grow high tech industry and innovation in our region and leverage partnerships for the successful implementation of the Tampa Bay Advanced Manufacturing Skills Initiative and grow the local manufacturing community.

Best regards,

A handwritten signature in black ink, appearing to read "Randy Berridge". The signature is fluid and cursive, with the first name "Randy" and last name "Berridge" clearly distinguishable.

Randy Berridge  
President

CC: Pinellas County Commissioner Susan Latvala  
Mike Meidel, CEcD, Pinellas County Economic Development director  
Bryan Kamm  
Florida House Speaker Will Weatherford  
Florida Representative Corcoran  
Florida Representative Kathleen Peters  
Florida Senator John Legg  
Florida Senator Wilton Simpson  
Florida Senate President Don Gaetz



February 20, 2014

Dear Mike Merrill, Country Administrator

**Subject: Tampa Bay German Skills Initiative**

RUAG Ammotec USA, Inc. is a subsidiary of RUAG Ammotec GmbH a Swiss owned company with production facilities in Switzerland, Germany, Hungary, Sweden and USA. We have built up the production in Florida during the last four years. We have invested in new production equipment and have hired 29 employees. We have found that finding skilled workers is more difficult here than in our European locations. Therefore we have brought over trainers from Europe and also have offered training for our US employees in Europe. With the "Tampa Bay German Skills Initiative" we see a chance to bring young people to an international education standard for industrial work. As we are supporting the IHK education program in Germany (we have approximately 25 young people in that program) we know that the result will be well trained and motivated employees for the future.

Therefore, we are supporting the "Tampa Bay German Skills Initiative" in the hope that we will find in the near future also well trained young people for state of the art production facilities.

If funding for the Tampa Bay German Skills Initiative is approved by the County and State, our company would be interested in participating in the program in the hiring of apprentices as needed, as well as to help guide the implementation of the German Skills Initiative for Hillsborough County and the Tampa Bay area.

We can assure you that through implementation of such a program in the Tampa Bay area, that it will not only help resolve the lack of existing workforce skills in advanced manufacturing, but training centers such as this one being proposed will also help the County and Region attract other advanced manufacturing companies like RUAG to the area, because finding a workforce with advanced skills is top on any company's list in selecting a new location.

Sincerely



Reinhard Moeller

CEO

April 2, 2014

The Honorable Will Weatherford, Speaker  
Florida House of Representatives  
402 South Monroe Street  
Tallahassee, FL 32399-1300

Dear Speaker Weatherford,

The Tampa Bay Partnership leads the region in advocating for economic development. We understand the issues facing local businesses as they attempt to grow and prosper. One of the most significant obstacles many businesses unfortunately face is finding potential employees with the knowledge and skills necessary to do the jobs that businesses create.

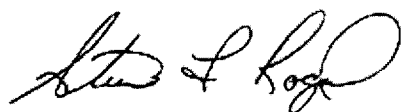
Our region is bursting with talent, but far too often these talented individuals lack the proper education and training to fill positions that become available. This workforce problem is especially acute for manufacturers and small and medium enterprises, which sometimes lack the resources to establish quality in-house training programs. These same smaller entities are the biggest drivers of economic growth and development in our region. It is unacceptable that many small businesses are forced to scale back plans for growth due to a lack of a properly trained workforce. No business in Tampa Bay should have to say no to an opportunity because no one is available to do the job.

For these reasons, we believe that the Tampa Bay Advanced Manufacturing Skills Initiative and the establishment of local Industry Certification Training Centers would be highly beneficial for the region's economic health and development.

Training and curriculum at these centers would be based on the German apprenticeship model, which is recognized the world over for its effectiveness. This initiative provides the Tampa Bay area an opportunity to become a national leader in advanced manufacturing training. It will empower local businesses, attract new enterprises to the market, and grow our economy. Based on current projections there will be almost 3,500 job vacancies in areas covered by these training programs in our market over the next three years, such as machinists and equipment maintenance mechanics. We have an opportunity to ensure that there will be a force of highly trained and qualified job seekers to fill them. All of this can be completed in a very affordable and efficient manner with an average cost of about \$2,600 per trainee.

The Tampa Bay Partnership is dedicated to providing solutions that better train our workforce and supply local businesses with the human capital they need to prosper. We urge you to join us in support of this tremendous opportunity to grow Tampa Bay's economy.

Sincerely,



Stuart L. Rogel  
President & CEO

4300 W. Cypress Street, Suite 700  
Tampa Bay, FL 33607  
Phone (813) 878-2208 Fax: (813) 872-9356  
[www.TampaBay.org](http://www.TampaBay.org)





February 18, 2014

Mike Merrill,  
Hillsborough County Administrator  
601 E Kennedy Blvd, 26<sup>th</sup> Floor  
Tampa, FL 33602

Dear Mr. Merrill,

Southern Manufacturing Technologies, Inc is, and has been for over 30 years, a Hillsborough County based manufacturer of components for Aircraft, Aerospace and Defense. During that time we have grown from 5 employees to 110. Finding skilled CNC Machinists, CNC Operators, Programmers and Process Engineers has always been a challenge. These skills, especially those required for programming and process engineering, in addition to classroom training, require hands on machining experience.

However, today it has reached a critical point where we are turning business away strictly because of the lack of available skilled people. In the past few decades most of the places teaching these skills have closed, not just in the Tampa Bay area but all around the country. A recent Hillsborough-Pinellas Manufacturing Skills Gap study showed a demand for nearly 3500 new employees in our industry in the next 24-36 months. The number 2 most in demand occupation is CNC Machinist and the number 4 is CNC Operator.

To address those needs SMT, with other local NTMA member companies, started the Tampa Bay Machining Apprenticeship. We employ 10 apprentice graduates with more in the program. During the last few years, we have also employed an average of 2 high school and 4 college interns per year. As a small business we have limited resources for training and having additional local programs teaching the needed skills would enable us to hire several more people per year.

One recent local project, in the works and gaining momentum, that could help solve the skills gap is a German Skills Initiative. This program would model itself after the very successful German system for skills training and would be a great help to fill the currently empty pipeline for skilled people. Many of our current interns are engineering students and, as such, tend to leave for mechanical engineering positions, which we do not have. The German dual system of education will have a higher success rate in developing the type of long term employees we need. Manufacturing remains one of the key drivers of economic growth in the Tampa Bay area and is in need of this type of local skills training to continue to lead the local economy.

I strongly support the German Skills Initiative and urge your support representing Hillsborough County.

Sincerely,

A handwritten signature in black ink that reads 'Roy Sweatman'.

Roy Sweatman  
President  
Southern Manufacturing Technologies, Inc.  
5910 Johns Road  
Tampa, FL 33634

Cc: Al Higginbotham  
Bryan Kamm



February 10, 2014

Michelle Baker  
Pasco County Administrator  
8731 Citizens Dr., Suite 340  
New Port Richey, FL 34654

Dear Michelle,

As a Pasco County manufacturer involved in the design and assembly of precision pharmaceutical packaging machinery, our struggles for finding the necessary skilled workforce is by far our greatest challenge in order to grow our business. It is unfortunate that we have accepted the mentality of restricting the pursuit of opportunities for new product developments primarily for that reason. Being an engineering based company, we are constantly looking for solutions to problems, and with talent development being a major one we realized that being involved with the educational process is a critical part of the solution. In order to teach the missing practical hands-on educational element, for the past 4 years we have increasingly employed student apprentices modeling their practical training off of the German system that we know to be successful. Since 2010 we have hired and trained 17 students, 6 of which have continued to work for us, 9 have gone off to college (of which 4 continue to work at PharmaWorks while attending college).

I do not doubt that successful implementation of local training centers, focused on teaching both the fundamental and specific skills needed by the surrounding manufacturing companies, will prove successful in allowing those companies to grow, provide employment, and serving as a magnet to draw in outside industry that recognizes this investment in talent development. We have an opportunity like never before to align programs currently in development /implementation such as Florida TRADE, mechatronics training, IHK, and strong local manufacturing support thanks to the Upper Tampa Bay Manufacturers Association.

Cooperative, non-competitive, non-parochial alignment and cooperation with our surroundings county legislation, economic development, secondary education, and community/state colleges towards this effort is the only way to ensure success in supporting this industry that is recognized as essential for economic stability for the United States.

Pharmaworks continues to pledge our support in doing our part in filling the gaps in the current educational process and requests our county and surrounding counties to do the same by supporting the ITC program.

Sincerely,

Peter Buczynsky  
President



March 3, 2014

Ms. Michelle Baker  
Pasco County Administrator  
8731 Citizens Drive  
New Port Richey, FL 34654

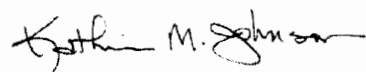
Dear Michelle:

This letter is to provide endorsement from Pasco-Hernando State College (PHSC) for the Tampa Bay German Skills Initiative Pilot Innovation Training Center (ITC) Project. We know there are many details to finalize in relation to this complicated collaboration, but PHSC very much wishes to be part of the discussions and eventual partner in these endeavors.

The PHSC executive administrative staff in academic and technical training and I have met briefly with both Commissioner Kathryn Starkey and ITC Pilot Project representative Bryan Kamm. We all feel that the overall plan has merit as it relates to Workforce Development in manufacturing and look forward to being involved in the continuing discussions and proposed collaborations. Consequently, since it has not been totally determined at this time the actual role PHSC might play in this Tampa Bay German Skills Initiative Pilot ITC Project, please know we remain eager to be part of this proposed regional alliance.

Please feel free to contact me directly should you need any additional information from me or my administrative team.

Cordially,



Katherine M. Johnson, Ed.D.  
President

c: Commissioner Kathryn Starkey  
Bryan Kamm  
Dr. Burt Harres  
Dr. Bonnie Clark  
Dean Ed Goolsby

KMJ:rd

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[www.phsc.edu](http://www.phsc.edu)

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Attention: Mike Merrill, County Administrator

Subject: German-American Skills Initiative Project

Mr. Merrill,

I wish to inform you of my support for the German American Skills Initiative program for the Tampa area. As the Director of Operations for 2 facilities, we are increasingly having a difficult time locating skilled talent in the operation of punch presses and the repair and maintenance of our die sets. Both positions require a highly skilled workforce in both CNC knowledge and practical experience, specifically in the Tool and Die design, repair and maintenance. The inability to quickly fill a role causes excessive down time resulting in loss productivity. When this occurs, hours are cut back to maintain margins and net operating incomes. We have 4 plants in various parts of the US but only in Florida do we have a difficult time locating skilled labor to fill these roles. As a result, orders are moved to other facilities to fulfill customer demands resulting in less hours for the Florida facility.

As you know, most if not all, high schools have removed the traditional Industrial Arts programs from their curriculum. Previously, we were able to fill our open positions with high school or tech students, beginning as a 'C' level and eventually work their way up to a 'A' level. Today, we are unable to fill these roles quickly and those that are available are in such high demand requiring us to raise the rates which affects our competitiveness.

The German American Skills Initiative is an approach that helps to resolve the problem of availability of the skilled labor workforce. I fully support this program to reach out to those who may be 'not college bound' but have the drive and ambition to get a skill and have a good job and career for their families. HPT and MiTek Industries will be interested in participating in the proposed program.

As more and more manufacturing returns to the US, this issue will continue to get worse. An ad campaign and focus on the parents of kids that manufacturing is exciting and fun is needed but also what is needed is a path to get there. The German American Skills Initiative is one of the paths to get there.

Let me know if you would like to discuss this further. Thank you for taking the time to address this issue for not only Tampa but for all of Florida and America.

Ken Jurgensmeyer  
Director of Engineering and Operations  
MiTek Industries, Tampa Stamping Plant  
Heat Pipe Technology, Inc.  
Chairman, Manufacturing Task Force, Tampa Bay Economic Development Council  
Email: [kjurgensmeyer@mii.com](mailto:kjurgensmeyer@mii.com)  
Cell: 352-222-1558



# KRAMSKI

KRAMSKI North America, Inc.  
8222 118<sup>th</sup> Ave North, Suite #650  
Largo, FL 33773

Phone: 727-828-1500  
Fax: 727-828-1535  
Web: [www.kramski.us](http://www.kramski.us)

January 23, 2014

Dear Bob LaSala, County Administrator

**Subject: Tampa Bay German Skills Initiative**

Kramski North America Inc. is a German-owned subsidiary of Kramski Gmbh located in Pforzheim, Germany. We specialize in precision stamping and injection molding. Our manufacturing processes require very specialized employee training. The type of training that we require is both practical and theoretical, whereby making it difficult to find new employees with the appropriate skills.

We are interested in being a part of a consortium of companies that collaborate to receive specialized training using the German apprenticeship model for advanced manufacturing and engineering. We are also interested in participating with an ITC that uses a world-class best practices apprenticeship model that is not offered anywhere else in the Bay Area. This is a unique option that would provide customized training while following best practices and standards that are recognized worldwide.

Should you have any additional questions please do not hesitate to contact me.

Sincerely,



Stefanie Bischoff  
Office Manager/ HR Administrator

KRAMSKI North America, Inc.  
Precision Stamping & Injection Molding  
8222 118th Avenue North Suite 650  
Largo, FL 33773

Tel. +1 (727) 828-1502  
Cell +1 (727) 378-2217  
Fax. +1 (727) 828-1535

CC. Bryan Kamm, Acting Chapter Director of GACC



16506 Pointe Village Drive, Suite 101 • Lutz, Florida 33558-5255  
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**Mayor Camille Hernandez—Ex Officio**

**Michele Baker, Pasco County—Ex Officio**

April 4, 2014

To Whom It May Concern:

On behalf of the Pasco Economic Development Council, Inc. (Pasco EDC), I am writing in support of the creation of the Innovation Training Center Program including an innovation training center in Pasco County.

Pasco County, as well as the Tampa Bay Region, is in need of training to develop a technical workforce to meet the demands of local manufacturers and to help attract advanced manufacturing companies. We recognize this need, and the ITC program is a new approach to help reach the goal of advanced, technical training in Pasco County.

On March 11, 2004, the Pasco County Board of County Commissioners approved a resolution in support of this program with the commitment to matching seed funds not to exceed \$500,000 for administration and operations. This resolution is the culmination of a multi-year initiative to improve vocational training in Pasco County, an effort in which our organization has been deeply involved.

Moreover, the ITC is based on a foundation of regional cooperation and commitment from public schools and post-secondary education institutions to support and facilitate the program's success. These are critical factors, and we believe that there is a level of commitment from the key institutions in our county and region to assure a smooth and sustainable implementation.

In closing, we urge you to provide the opportunity for this important workforce development program to demonstrate its value to our area manufacturers.

Sincerely,

John Hagen, CECd  
President/CEO

JH:sjr



ADMINISTRATION BUILDING  
301 Fourth St. SW  
P.O. Box 2942  
Largo, FL 33779-2942  
Ph. (727) 588-6000

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Michael A. Grego, Ed.D.

April 3, 2014

Mr. Bob LaSala  
Pinellas County Administrator  
315 Court Street  
Clearwater, FL 33756

Dear Mr. LaSala:

Pinellas County Schools strongly supports the Tampa Bay Advanced Manufacturing Skills Initiative and regional training concept to increase the number of skilled individuals ready to fill the void in manufacturing jobs throughout the Tampa Bay area. Pinellas County Schools has been a long-standing partner with other government agencies such as Career Source Pinellas and Pinellas Economic Development in meeting the economic development and workforce manpower training needs in our area.

Pinellas County Schools was a recent partner in the area's Manufacturing Skills Gap Analysis where education institutions, businesses and economic development organizations came together to identify the current needs of the area's manufacturing community and to provide recommendations on how to fill that gap. Pinellas County Schools remains committed to providing pathways in our high school to manufacturing careers as well as postsecondary training opportunities to postsecondary students to meet the needs identified in the study.

Pinellas County Schools and its postsecondary training institutions, Pinellas Technical Education Centers, have long supported manufacturing occupations in Pinellas and the surrounding counties with our award winning programs in Machine Trades, Welding, Industrial Machinery Maintenance and Soldering. We too, recognize the value of manufacturing related occupations to the area's continued economic growth.

Pinellas County Schools views the Industry Certification Training Center concept as a viable method to address the skilled worker shortage in the manufacturing community and is willing to focusing our existing resources to partner with the corporate community, surrounding school districts, state colleges, workforce boards and economic development entities to assist in moving this initiative forward.

You will find Pinellas County Schools to be a committed active partner in the Tampa Bay Advanced Manufacturing Skills Initiative and we look forward to joining others in this venture.

Sincerely,

Michael A. Grego, Ed.D.  
Superintendent

Cc: Will Weatherford  
Kathleen Peters  
Ed Peachy  
Karen Seel  
Dr. William Law





**Electro Mechanical Solutions, Inc.**

www.emsinc1.com

1555 Gunn Highway • Odessa, FL 33556

Tel: 813.792.0400 • Fax: 813.792.0030

March 27, 2014.

Michelle Baker  
Pasco County Administrator  
8731 Citizens Dr., Suite 340  
New Port Richey, FL 34756

Dear Michelle,

As a Pasco County manufacturer and owner of a precision sheet metal and machining company, our struggles for finding the necessary skilled workforce is by far our greatest challenge in order to grow our business. As I'm sure you are aware manufacturers are faced with an aging skilled workforce and we face a systematic lack in training and attracting new workers into the industry. Unfortunately we don't have the time to train a new employee that has no background in our industry.

This is why we backup 100% a local training program focused in teaching both the fundamental and specific skills needed by the surrounding manufacturing companies. The ITC initiative will help companies with a skilled workforce that would help the grow of business and attract new companies into the region.

Sincerely,

A handwritten signature in black ink, appearing to read "Venkata S. Boyanapalli", written in a cursive style.

Venkata S. Boyanapalli  
President