



South Florida Business Roundtable Florida Power & Light, Juno Beach February 22, 2010

The South Florida Business Roundtable was hosted by Florida Power & Light in Juno Beach on February 22, 2010. Forty STEM stakeholders were in attendance.

Mary Chance, Executive Director of the Consortium of Florida Education Foundations and lead partner on the project opened the session by welcoming all participants and providing background information on the **STEM**Florida project. She thanked host FPL and invited Buck Martinez to provide introductory comments.

On behalf of Florida Power and Light (FPL), the South Florida Business Roundtable host site, Buck Martinez began the session by welcoming all participants to their Juno Beach office complex. He said that for many years, Florida Power and Light had teamed with education to create a public/private partnership to enhance teaching and learning throughout their service area. He added that he was delighted that today his corporation could host this long overdue dialogue to focus on business needs for a STEM proficient workforce.

Providing an overview of current FPL initiatives, he talked about three utility scale projects now underway by FPL in the region. He shared details concerning a Desoto solar initiative serving 3,000 homes, a Kennedy Space Center activity and a joint solar/gas project as examples of FPL's recent expansion. Concerning out of state investments, he talked about the corporation's investment recently of some 2 billion dollars in windmill renewable energy efforts in Texas. One area especially important to education, he said, is FPL's work with school districts to provide solar panels as a part of their renewable energy efforts. He concluded by sharing his concern that Florida is facing a major challenge in growing renewable energy resources. Currently, he said, Florida has no renewable energy legislation which definitely limits business opportunities and growth in the state.

Pam Tedesco, **STEM**Florida Project Manager served as the Roundtable moderator and opened the business panel presentations by recognizing each of the panelists, beginning with the host, Rod Adams, Director of Property & Sales Tax of Florida Power & Light; Pam Houghten, Director of Education Outreach for Torrey Pines Institute for Molecular Studies; and Maria Hernandez, Director of Growth Markets Strategy for IBM

After introductions of the three business panelists, Ms. Tedesco, the **STEM**Florida Project Manager and Business Roundtable Moderator, opened the panel discussion by addressing Rod Adams. She recognized Florida Power & Light's involvement in education at both the secondary and post secondary level and asked him to share their involvement programs, the results of those and why the company jumped into supporting STEM educational efforts. Mr. Adams began by stating that there were basically six factors that influenced the company's decision to increase their involvement in education. First, a critical need to establish a pipeline for the company's workforce talent development was paramount for them. Second, he said within that pipeline, the company desired to increase technical skills training available. The third driving factor was to improve the "soft skills" or written and oral communication skills of their workforce applicant. This included developing attitudes that promote lifelong learning expectations. Understanding that the new workplace is virtual, he added that the



fourth and fifth motivations were to promote the 21st Century requirement for being proficient in a second language, along with an expanded vision of the global work environment. For example, he said that Florida Power & Light is not only working in twenty-eight states, but building in Spain and has assets in other nations. The sixth factor was a summary of all the previous reasons for their “jump” into supporting STEM educational programs, the challenges and competition associated with recruiting new employees. He said that the company understands that they must create and maintain the business environment to readily recruit those new employees needed to maintain their competitive edge.

The second member of the panel, Pamela Houghten, was asked to relate her company’s need for a workforce that is proficient across all STEM disciplines. As an opening introduction for Ms. Houghten, the moderator shared briefly about Florida’s significant investment in the state’s life sciences industry and how Torrey Pines Institute for Molecular Studies fits into that structure. Ms. Houghten answered by saying that her company must seek the best talent worldwide to fill the Ph.D. level positions, but was employing research technicians, and other support positions from within the State of Florida. Torrey Pines Institute is also pleased to know that Florida Atlantic University has plans to create a medical college as Ph.D., M.D. degree graduates often choose to go into research. Torrey Pines Institute is working with state universities and colleges to fill other positions. Even so, she stated that the most difficult area to address was in the K-12 arena. It was her observation that an alarming number of secondary students are not prepared to effectively transfer to post-secondary education for additional training which is needed for their workforce. She added that Torrey Pines Institute has joined with Indian River State College to create the Biotechnology and Bioinformatics programs to help create a pipeline for STEM proficient talent development to help fill their needs. She continued to stress that the Torrey Pines Institute does not want to bring people from the outside to work in Florida, and prefers the STEM proficient talent pool within the state to grow to meet her company’s needs. She ended by saying that education, with STEM proficient workers as the result, is vital to Florida’s economic future.

Panel member Maria Hernandez of IBM was asked to share their “Model T” approach to the company’s workforce requirements which she had shared earlier with the moderator. Ms. Hernandez began by saying that since IBM works globally, “growing the market” is the driving force. With today’s challenging environment, she added that her company is considering the realities of the economy. In doing so, they looked at the “T” from “STEM” and determined that the letter could serve as an object lesson concerning their efforts. The “T” definitely represents engineers, computer scientists and other STEM proficient workforce members, but IBM believes that the soft skills for effective 21st Century service must be a vital part of the structure. She illustrated by pointing to the “T” in STEM and sharing that the top part of the “T” represents those well-rounded skills, those broad skills required for effective company service today. She said that their approach was no longer just selling equipment, but more importantly answering the customer’s question, “How are you going to fix my business problem?” Therefore, she added, their goal is to apply technology to solve business problems for their customers. The vertical segment in the “T” symbolized the deep technical skill required. Therefore, in their “T” model, deep technical skills are married with broad business aptitudes. Their focus around the world, she said, was in the emerging growth markets such as Singapore, where a “leapfrog” approach to apply the latest technologies available is found everywhere. It is vital, she explained, to develop multicultural understanding throughout our educational system and make the acquisition of a second language essential to our educational design. She concluded by providing insight for the participants into something “dear to my heart”, she said. As a woman in technology, she expressed deep concern that our state is losing girls’ interest in STEM during their middle grade years. She said that it is imperative that Florida keeps our girls engaged by providing opportunities to develop career paths, to see research facilities and to explore engineering experiences during their transformational years.

Following the panelists comments, the participants were divided into small groups for discussion. A summary of those discussions follows.



South Florida Business Roundtable

Group Discussion Summary

Discussion Topics

STEM in Florida from the 35,000' level

What are your current challenges with regards to securing appropriately trained & qualified STEM talent? What are the specific skills you need?

Challenges

Many challenges employers are having relative to securing the workforce needed were presented. Expanding the pipeline of students in STEM courses is necessary to increase the number of STEM graduates. Currently, the South Florida business community is hiring a significant number of foreigners as it cannot find the talent it needs within the state/national citizenry. This will be compounded specifically in several industries where increased upcoming retirements will be affecting the numbers of new STEM skilled personnel needed. A marketing program to encourage youth what STEM careers exist in Florida's key industries would be helpful. Such efforts need to reach out to parents as well.

Traditional training programs need to be revised and enhanced. We need to recognize that today's students are different kinds of learners; they're not "book learners". By incentivizing training, for



both students and teachers, to connect and integrate the application of STEM curriculum, they would have valuable experience and not just background knowledge. Business leaders, however, questioned whether all teachers can effectively teach the application of STEM; it's a new skill set they will need additional training to acquire.

Businesses recognized the value of lifelong learning noting that continuous learning is critical, but many companies don't address continuing education for their employees.

An additional challenge noted was the current state of the economy. Businesses acknowledged that it is hard to encourage heavy STEM education now when companies aren't currently hiring. College enrollment has increased significantly during the recession and having jobs for the talented graduates will feed continued enrollment in those areas.

Skills

Skills in demand by the South Florida business community, which includes target industries of IT, biotech, manufacturing, finance and energy, include a stronger foundation in basic/core subjects, as well as in STEM. The businesses value the industry certifications provided through the career academies. The need for improvement in soft skills was by far the strongest calling. Students need to master creative thinking, problem solving, have socialization skills and interpersonal skills and the ability to communicate well. The application of STEM material is important and essential for students to learn. Additionally, students need preparation for the successful transition to higher education.

Also noted was the need for instructional personnel to have skills upgraded. Teachers need to have a core competency in their subject area and should be provided ongoing training to keep that knowledge current as technologies, etc. change.

From your hiring experiences, what education facilities/training programs are successfully creating the talent you need? What facilities/programs do not?

Businesses said that successful programs include those in which business partnerships exist and are strong, where companies influence the curriculum and also provide employees to teach some courses and suggested that increased interactive partnerships at earlier levels of education would yield still better results. They noted successful internship programs and the Dwyer program at the high school level. Specific post secondary programs cited were the University of Florida's IFAS program that takes a scientific approach to crops, Florida State University's science focus, University of Miami and NOVA's marine sciences program in which education meets with industry and the University of Central Florida is viewed as an expert in IT. University of Miami was also noted as having excellent medical and engineering programming.



Challenges stated include a general lack of qualified talent being produced so employers are required to import that talent from other regions. The region needs more schools that focus on engineering and effectively reach out to students to increase enrollment. The United States' lower educational requirements relative to school year length was cited as a detriment. The level of state funding is also limiting Florida's educational successes. Representatives said that business needs to have a stronger presence in the world of education.

- What changes do you see in the future – how far out?
Attention on STEM enrollment must begin at earlier educational years, and Florida's educational processes must be assessed to ensure that the curriculum has applicability to real jobs. Florida must also fund education at a higher level in order to attract the talent it needs. Increased value will continue to be placed on industry certifications rather than traditional school completion points (graduation, school issues certification, etc.). More focus on students' mastery of the "basics" is needed. The business representatives also noted that other countries appear to have successfully mastered the education/talent development process as evidenced by their higher and increasing math and science competency scores; the United States needs to mirror those countries that are most successful.

Policy issues

- What policy barriers are out there and how can they be overcome?
(Legislative/Regulatory, Systemic – Federal and/or State, etc.)
The business representatives cited a wide array of policy barriers. From a regulatory perspective, concerns were voiced about the length of the school year, Florida's low financial investment in education, and insurance issues that limit the involvement businesses can have with students. Additionally, the business community questioned the value of the FCAT.

Educational output issues were related to the lack of employability skills – graduates are not ready for job requirements, they lack soft skills, need remediation, and there is no training for life skills

Other concerns raised by the South Florida business community were the need for Florida to get away from being only a “tourism” state, the lack of a “flagship” university to create a culture of high skills and no statewide strategic plan in education.

STEM solutions

- How does your company / can your company support STEM education – early ed, middle school, secondary, post secondary?

The South Florida business community is actively involved in the region’s education system. Business representatives leverage relationships with chambers of commerce, etc. to work collaboratively with educational institutions to serve as mentors, on advisory boards and promote community education. One business partners by taking high school dropouts and allows them to work a few hours per week at its facility.

- How does your company support STEM education transformation – national, state, local level?

Business representatives named several ways they support STEM education transformation, all at the state or local level. They offer apprenticeships, support youth programs and science fairs, and serve on the boards of community and state colleges. One representatives currently serves on the Florida Council of 100 Higher Education Task Force. Even with this level of activity, business representatives also indicated they want and need guidance as to how they can effectively participate.

- What does your company do to support student internships and/or teacher externships? What challenges exist that limit the support you can give?

Student internships are regularly offered in South Florida. Businesses report they have effectively created partnerships for internships and they are used frequently in construction, however they also say that more summer activities focused on work would be beneficial. Additionally, grant programs for teacher externships were also noted.



- Name successful STEM programs you’re aware of

As noted in all other regions, career academies that provide real-world application of education received high acclaim. Additionally, the business community said that its interaction through chambers of commerce have facilitated interaction with educational institutions. Interestingly, Purdue University’s construction and engineering programs were noted. Not receiving commendation was Florida’s FCAT: “FCAT needs to go away!”

What are the top 3 STEM priorities relative to developing a STEM proficient workforce?

Strong consensus was seen among the business responses to this question. Those responses can be grouped into three areas: partnership, culture and funding.

The business community said that gaining access to the schools (K-12) would be beneficial and even suggested a model concept to force more partnership between school districts & businesses by requiring a private match of a certain percentage for school districts to obtain their public dollars.

Increased business interaction will also increase the number of internships, externships and apprenticeships available.

Creating a culture that values education and the development of higher skill sets was also deemed a priority. Inspiring students – beginning at young ages – to see the opportunities for high wage employment in STEM areas will likely drive more students to pursue STEM courses. The business community observed that today's youth are driven by instant gratification and it will be a challenge to impress upon them that hard work pays off in the long term. Placing a greater focus on K-12 is a foundation for the development of STEM skills. Greater challenges for students and higher quality training for teachers is needed.

With regards to funding, the business representatives said that appropriate funding from the state level is needed to support education, K-20 and the state should stop compromising education for lower tax rates. More resources need to be made available to teachers for both instruction and for their professional development. Increased funding could be furthered with the requirement for school districts/educational institutions being required to find a private match for those public dollars. Additional funding specifically allocated to STEM education was cited as a need.