

Aiming To Connect With Key Constituencies

FLORIDA ENGINEERS CELEBRATE 2006 NATIONAL ENGINEERS' WEEK



ENGINEERS WEEK® 2006 February 19-25

Many communities across the nation and Florida are embarking on the 55th annual celebration of National Engineers' Week. If you are like many engineers, you may have found yourself wondering how our nation came about celebrating National Engineers' Week. When did this annual tradition begin? Why is this national event so important, and who started it? Most importantly, how can engineers, projects and agencies in your community be recognized for their engineering accomplishments?

National Engineers' Week was founded in 1951 by the National Society of Professional Engineers (NSPE). The NSPE was concerned about the public perception of engineers and wanted to develop a plan to improve their image. With the help of a public relations firm, the NSPE chose a week to focus on engineers' contributions to society. The National Engineers' Week mission then and now, is to increase public awareness and appreciation of the engineering profession.

The NSPE decided that the event would always be celebrated at the time of George Washington's birthday because of his contributions to engineering. Our

nation's first president was a military engineer and a land surveyor. Washington's surveying skills led to his title as the first US engineer. On June 9, 1778, at Valley Forge, PA, General Washington issued an order calling for engineers and engineering education. This order is considered to be the genesis of a US Army Engineering School which was eventually headquartered at Ft Belvoir, VA.

Washington's vision of a nation transformed through engineering is carried out today through our industry leaders' quest for highly trained engineers to develop better technology and superior product development. Engineers translate

BY PAUL BRUGGER, PE, HNTB CORPORATION

ideas into reality, solving practical problems with science and technology so that products, services, and systems can better serve people's needs. The contributions of engineers to society throughout history are immeasurable, and their importance will increase in the future. We need engineering to make our way through an increasingly complex world—whether on the information superhighway or the freeway. We need engineering to address the consequences of change, to insure that we solve problems without creating greater ones. It is with this in mind, that engineering societies around the state of Florida began reaching out to their local universities and industry and community leaders to celebrate the engineers and projects that make Florida great.

In its beginning, National Engineers' Week included a few scattered government proclamations, dinners, and speeches. It has since grown to involve tens of thousands of engineers in a variety of community outreach activities, such as technology and education exhibits at shopping malls, Introduce a Girl to Engineering Day, Future Cities, and MATHCOUNTS competitions, Discover "E," and many others.

In Florida, the first National Engineers' Week celebration dates back to the approximate time the NSPE founded the event in 1951. The program was hosted by the Jacksonville Chapter of the Florida Society of Professional Engineers, now called the Florida Engineering Society (FES).

Currently there are hundreds of engineering societies, corporations and businesses, government agencies, and universities that participate in National Engineers' Week activities around Florida. How activities are organized vary amongst Florida regions, but most are supported by local chapters of the FES or volunteers from local engineering societies and firms forming Engineers' Week committees. Engineers' Week events vary from community to community and include golf tournaments, awards banquets, career fairs, and more. Following is a brief overview of how some Florida communities are celebrating National Engineers' Week.

NORTHEAST FLORIDA

The Northeast Florida region celebrates National Engineers' Week with a number of activities that last throughout the month of February. This year, the Northeast Florida Engineers' Week committee elected to add a casino night, February 10 at the Jacksonville Riverfront Hilton, to the list of events to help raise dollars toward the University of North Florida (UNF) endowment fund. As in previous years, there is also a golf outing on February 20 which supports the Engineers' Week committee scholarships. Typically, the committee awards two \$1,500 scholarships to UNF students, in addition to a \$1,000 scholarship to a high school student to be used at the university of his/her choice. To wrap up the month's events, the committee will host an award banquet on February 25 to honor local engineering leaders and projects.

For more information on these and other Northeast Florida events visit:
www.nefl-eweek.com.

CENTRAL FLORIDA

Every year the Central Florida Engineers' Week committee plans an awards banquet to celebrate outstanding local engineers, projects, firms, and government agencies. The committee also strives to recruit a national, regional, or local industry leader to address the attendees with a compelling and educational keynote speech, and this year is no exception. The 2006 banquet, scheduled for February 25 at Orlando's Church Street Ballroom, will feature the renowned retired General Barry McCaffrey. General McCaffrey currently serves as chairman of HNTB Federal Services Corporation and also serves as an advisory member to the HNTB Companies board of directors. In addition, he serves as a national security and terrorism analyst for NBC News, and writes a column on national security issues for *Armed Forces Journal*. His keynote speech will address "Seven Key Challenges Facing America's Engineers."

Nominees for 2006 Central Florida Engineer of the Year:

- Yassi M. Myers, PE-URS
- Rachel Hutter, PE-Walt Disney World
- Amy D. Scales, PE-FDOT District 5
- Steven L. Precourt, PE-DRMP

Nominees for 2006 Central Florida Engineering Project of the Year:

- UCF Football Stadium-UCF Facilities Planning
- Western Beltway-OOCEA

- I-4/SR 408 Interchange-FDOT District V
- Expanded Central Florida 511 System Rollout-FDOT District V
- Department of Agriculture and Consumer Services-BioSafety Level 3 Laboratory

All proceeds from this event will go towards engineering scholarships in Central Florida.

For more information on this event visit:
www.cflengineersweek.com.

TREASURE COAST

The FES Treasure Coast Chapter has aimed its Engineers' Week activities at educating students at the community college level. They plan to host a career fair at the Indian River Community College (IRCC) to help promote the profession and allow members from the Treasure Coast Chapter to meet members of the newly formed FES IRCC Student Chapter. The Treasure Coast Chapter feels that an education-based activity fits well with FES President John R. Hall's call for education of the engineering profession across the state.

MIAMI

Most of the Miami Engineers' Week activities are organized by the FES Miami Chapter. This year the community will celebrate the engineers and projects that make Miami great with an Engineers' Week Awards Banquet on February 26 at the Radisson Mart Hotel. In addition, they will host a Future Cities competition on February 28 at the Florida International University gymnasium in Miami and a MATHCOUNTS competition February 22 thru 24 at the Miami-Dade College south campus.

For more information on these events contact: Engineers' Week Banquet, Luis Olivares, PE at 305-261-2006 or lolivares@avart.net; Future Cities, Rod Rodriguez, PE at 305-445-2900 or rrodriguez@c3ts.com; and MATHCOUNTS, Hector Badia, EI at 305-445-2900 or hectorb@c3ts.com.

In conclusion, there are many ways local communities can celebrate the projects and engineers that have enhanced their societies. It all begins with having your engineering staff take part in the existing Engineers' Week programs, and continuously working with the local engineering societies and agencies. The good news is that interviews with local engineering societies indicate that support for National Engineers' Week is strong at

the local level. For more information on National Engineers' Week activities visit the following Web sites: www.eweek.org, www.engineeringsights.org, www.discoverengineering.org, and www.futurecity.org. Although participation is good, Engineers' Week events take a lot of effort from a lot of people to organize, and many local committees can always use more volunteers. Contact your local Engineers' Week committee to get more information on how you can support future events, as it just takes getting the right people together to make Engineers' Week happen in your community. ■

About the Author:

Paul Brugger, PE, joined HNTB in 1979 and is currently a senior project manager in the Miami office. He has more than 35 years of experience in civil engineering projects

both in the private and public sector. He has participated in aviation facility projects, stormwater drainage, water and wastewater pipeline and treatment projects, and roadway planning and design projects. He has served in program management, project management and project engineering roles in these aviation, environmental and transportation projects. He has been an active member of the FES Miami Chapter since 1993 and has held several roles including president, treasurer, member of the board of directors, and state director.

The Quest for Engineers

The Challenge of Recruiting and Retaining Staff in Today's Competitive Job Market.

BY DAVID W. GWYNN JR, PE, HNTB CORPORATION

In the 10 years between November 1995 and November 2005, the state of Florida saw employment in the architectural and engineering fields grow nearly 66 percent.¹ Florida, whose transportation infrastructure is struggling to keep up with the state's rapidly growing population, is home to an abundance of engineering firms—many more than there were just a decade ago. Yet, while the number of engineering firms in the state continues to rise, the number of engineering graduates has become stagnant—a statistic that has proven to be an obstacle for human resource professionals.

A decade ago, human resource professionals with engineering firms across the state of Florida had an abundance of candidates from which to choose. Filling positions was relatively easy. In fact, most engineering graduates were happy just to get a job with a decent company. Now, the tables have turned. There are not enough qualified candidates to go around, and in fact candidates have the luxury of being selective about where they choose to work. Not only are firms finding it harder to attract employees, they're finding it harder to keep them.

STEP 1: RECRUITMENT

Yvonne Lopez-Diaz, Southeast Division Human Resource Consultant with HNTB Corporation, a 3,000 person multi-discipline firm with 62 offices nationwide, is just one of many human resource professionals facing the challenge of staffing an increasingly busy engineering firm. She understands that to find qualified candidates for employment, companies must think beyond just an advertisement in the local paper or professional association Web site. "There are so many avenues open to firms when searching for qualified engineering candidates," said Lopez-Diaz. "In addition to print and Internet advertising, HNTB utilizes a number of other methods to source potential employees. In order to capitalize on the limited amount of available qualified engineers, human resource professionals first need to know where to look. It's a little like searching for a needle in a haystack, but help is out there. And certain perks, such as the employee referral bonus programs, provide additional advantages. Our best recruiters are our own staff members, and we

encourage them to refer individuals whom they feel will add value to our growing company."

Employee referrals are a good source for identifying qualified candidates for employment. Since referrals are a reflection on themselves, employees are inclined to refer candidates whom they know well and respect on a professional level. Additionally, employees are likely to have a good sense about the candidate's ability to fit in with the organizational culture. As an incentive for employees to assist with the recruiting process, many firms offer referral bonus programs.

Recruitment Tools:

- Print advertisements
- Internet postings
- Employee Referrals
- Professional Associations
- Colleges and Universities

Professional associations are another excellent source to utilize when searching for candidates. Not only is this a good way to network professionally, but it also provides human resource professionals with an opportunity to meet potential candidates and discuss career opportunities within the firm. Many professional associations offer online job postings, or advertisements in their newsletters as an additional recruitment method for firms to advertise their career opportunities. The Florida Engineering Society and Institute of Transportation Engineers are just two organizations that posts job opportunities on-line (www.fleng.org and www.ite.org).

Another excellent resource for finding both entry-level and experienced professional candidates is through colleges and universities. This is a source HNTB uses often. "Over the past several years, HNTB's Lake Mary office has developed a strong partnership with various academic institutions throughout Florida," said Lopez-Diaz. "Our firm offers internships to students, and many of them want to continue on with HNTB post-graduation. It is very important for firms to develop and maintain relationships not only with students, but key individuals and groups at colleges as well. It could mean the difference between an employee spending three months at a firm, or three decades.

We subscribe to an "often and early" model at HNTB. It is important to get involved with your local academic institutions often by establishing relationships with the student chapters, academic advisors, and participating in career fairs, just to name a few. When you find that student who is just too good to pass up, you have to capitalize on that circumstance and offer them an internship opportunity. Offering internship and co-op opportunities allows your organization to grow from the grass roots level."

STEP 2: RETENTION

Employee retention is another challenge facing engineering firms today. Once you've got the employee, how do you retain them? Engineering candidates have more options than they did just 10 years ago. In order to be a contender, firms need to stay competitive and on the cutting edge of the industry. Candidates are looking for more than just compensation for the hours they work. This means offering not only competitive salaries, but a comprehensive benefit package, flexible work schedules and the opportunity to work on challenging projects. "Employees are looking for much more than money these days," said Lopez-Diaz. "Firms that offer 'the total package' are going to be more successful at retaining employees than those that just offer an attractive salary."

Sometimes it is the seemingly little things that matter most. With a high number of working parents these days, many employees look to companies that are close to home or that offer flexible work schedules to provide an acceptable balance between family and career. Others choose a firm for the type of work it does. Some engineers want to work on high-profile bridge design projects. Others want to improve safety on city streets. Says Lopez-Diaz, "In an age when so many people consider their work 'just a job', it is refreshing when one can find an organization that offers them not only a career, but a career they enjoy."

Recruiting internally is a way to not only fill vacant positions, but to recognize and reward current employees as well. Many



Top 10 Reasons to Stay:

- Competitive Compensation
- Comprehensive Benefit Package
- Deferred Compensation Options
- Flexible Work Schedules
- Work on Exciting/Challenging Projects
- Reward & Recognition
- Training Opportunities
- Career Development Opportunities
- Mentoring & Coaching
- Leadership Development

companies have chosen to look inward when searching for qualified candidates. Some offer relocation packages when promoting from within.

Whether firms choose to search within the company for talent, or to jump into the very small pool of graduating engineers, all companies are faced with the same challenge: attracting and retaining highly qualified engineers. Next to teaching, engineering has the largest number of professional practitioners, with electrical engineering encompassing the largest number of engineers.² With growth in Florida—one of the fastest growing states in the country—showing no signs of slowing, the demand for bigger and better infrastructure also increases. And, with the demand for more infrastructure comes the demand for more engineers to make it happen. Firms will need to “think outside the box” and utilize every available recruiting option, as well as offer competitive salaries and benefit programs, in order to foster an environment where employees are happy and engaged, and most importantly where their firm is viewed as the employer of choice. ■



About the Author:

David Gwynn Jr, PE serves as a vice president and officer in charge for HNTB's Lake Mary office. He has more than 22 years of experience in transportation

engineering projects throughout the Southeastern United States. He has participated in projects ranging from planning, PD&E and traffic engineering studies to large roadway and interchange design projects. He has also managed more than 50 continuing engineering services contracts for various state, county, and municipal agencies.

Sources (1): *Labor Market Statistics*, www.labormarketinfo.com.

(2): The Institute of Electrical & Electronics Engineers, Inc.



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July 27-29, 2006

The Breakers, Palm Beach

“Engineering: It’s All Elementary”

“Engineering: It’s All Elementary” was selected as the theme in recognition that engineering affects the lives of everyone and is fundamental to our society. The word elementary, when used in the context of the theme, also recognizes the basic educational aspects vital to engineering (ie, science, math, and problem-solving).

From sessions for students, to multiple continuing education for Professional Engineers—this conference is sure to offer something for everyone.



HOTEL: Mark your calendar now to be at The Breakers in Palm Beach, July 27-29, 2006, to take part in this exciting annual event. In fact, be among the first to reserve your room at The Breakers by calling reservations toll-free at 888-273-2537. Please reference Florida Engineering Society to receive the discounted group rate of \$140 single or double occupancy. There is no resort fee and self-parking is complimentary (\$12 valet).

KEYNOTE SPEAKER: CRAIG ZABLOCKI, POSITIVELY HUMOR



A nationally known speaker and consultant, Craig has spoken to over 600,000 people internationally and in all 50 states. Craig has shared the platform with President George Bush, Al Gore, and Tom Peters. A background in business, teaching in an inner-city school, and performing in a professional improvisational comedy troupe allows Craig to speak from a unique perspective. His unscripted style has been compared to a hybrid of Robin Williams and Wayne Dyer. One participant of his program wrote, “We should harness his energy—it could power a small city. His passion and commitment to making a difference is contagious!”

Calendar of Events

FEBRUARY

Chapter MATHCOUNTS Competitions throughout the month

- 3 FICE Transportation Committee
- 10 Florida Building Code—Structural Wind Loading, Tampa
- 14-16 Advanced Work Zone Traffic Control Course, Ft Lauderdale
- 16 FICE/FDOT Drainage Standard Indexes Course, Ft Lauderdale
- 16-18 Florida Engineering Leadership Institute, Hyatt Regency Jacksonville Riverfront, Jacksonville, FL
- 19-25 Engineers’ Week
- 22 FICE Transportation Committee

MARCH

- 8-9 FICE/FDOT Pond Design, Tampa
- 29 FES Board of Directors Meeting, Kleman Plaza, Tallahassee
- 29-30 Florida Engineering Leadership Institute, Tallahassee
- 29-30 Professional Engineers’ Legislative Days, Tallahassee
- 30 FICE Board of Directors Meeting, FICE Headquarters, Tallahassee
- 31 MATHCOUNTS State Competition, Orlando
- 31 FPEI Award Submittals Due to FES Headquarters

APRIL

- 6-7 GMCEC Conference, Altamonte Springs
- 14 FICE/FDOT Automated Fee Proposal/CITS Training
- 14 FECON, FPEG, and FICE Award Submittals Due to FES Headquarters
- 27 Florida Building Code—Structural Wind Loading, Miami
- 27 Advanced Work Zone Refresher Course, Palm Beach Gardens

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Committed to Engineering Education

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2005-2006

YOUR CONTRIBUTIONS MAKE IT POSSIBLE TO:

- Assist students in and into engineering
- Provide resources to engineering programs in Florida
- Promote diversity in engineering education
- Raise public awareness of the role of engineering in society

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Young Engineers Speak Out:

Why They Entered the Profession and Thoughts on Moving Forward.
Comments from Faculty Who Got Them Here.

BY CHARLEY WILLIAMS, MANAGER, BUSINESS DEVELOPMENT,
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC

In celebration of Engineers' Week, we invited several past recipients of the FES Young Engineer of the Year Award to reflect on why they chose the engineering profession, their strategies for balancing office and home, their recommendations for how the profession could raise its brand image, and their review of retention/benefit issues that ring true for them. In addition, we invited several of our Florida engineering faculty to comment on enrollment trends and the next crop of engineering graduates.

WHAT MADE YOU CHOOSE THE ENGINEERING PROFESSION?

LEO: I wanted to go into engineering because I liked math and science. I also wanted to work outside. I made that decision at age 16, and am still happy with that decision today.

SMITH: I think it is just who I am, always have been. Never satisfied with doing something just because I'm supposed to—rather looking for why it is done and how to do it better.

MADDOX: I loved math and problem-solving. Today, I am driven by the challenges in dealing with the business aspects of our profession versus the technical issues. I have learned that these two issues are usually intertwined. This gives me the best of both worlds.

LONG: I wanted to be a part of something that impacted people's lives and create things that people will use everyday. I wanted this not for the fame, but for personal pride and comfort.

WE KNOW WE ARE LOSING ENGINEERING STUDENTS TO OTHER PROFESSIONS. WHY IS THIS?

CHOPRA: The reputation of engineering continues to lag behind other professions such as law and medicine. In addition, in the mind of the student, the monetary compensation and visibility after completing a very rigorous curriculum are typically not comparable to other avenues.

RIZZOLO: I definitely think that we're losing potential students to other

professions. I think there's two big problems contributing to this: (1) Our society does not place an emphasis on math and science, and (2) students today all want to be CSI's—in other words, there are no TV shows or video games that glamorize engineering.

LEO: Engineering isn't "sexy" to someone making a career decision. There needs to be a better way to communicate to the youth that what engineers do is cool!

RIBARIC: The problem is that the society wants technology. Civil in particular isn't as "technology hip" as the electronics and computer engineering.

LONG: The students I have spoken with have indicated that they were not aware of
Continued on the Next Page

PARTICIPATING FES YOUNG ENGINEERS OF THE YEAR:



Charlotte Maddox, PE,
PBS&J, Tampa (2001)



Kathy Leo, PE, PBS&J,
Orlando (2002)



Jim Thompson, PE,
Wantman Group, West
Palm Beach (2003)



Sandra Smith, PE,
Miller Legg,
Port St Lucie (2004)



J. Casey Long, PE,
CH2M Hill, West Palm
Beach (2005)

Several young engineers contributed survey responses for this article; we simply did not have enough space to accommodate all the excellent suggestions and observations. They are: Rachel Andre, PE, GEC; Brian Bobo, PE, HNTB; Loreen Choate, PE, FDOT; Eduardo Guinard, PE, Parsons Brinckerhoff; Janet Middleton, PE, Inwood Consulting; Matthew Musante, PE, DRMP; Brian Ribaric, PE, HDR; Chris Rizzolo, PE, URS; and Aixa Vazquez, EI, Finfrack.

Participating engineering faculty included: Martin Wanielista, PhD, PE and Manoj Chopra, PhD, PE, College of Engineering and Computer Science, University of Central Florida (UCF), Dr. Joseph Zayas, Professor of Physics, Pensacola Junior College; and Dr. Bashir Sayar, Jacksonville University.

Young Engineers Speak Out Continued

all of the fields of engineering. I also do not feel enough emphasis on the science and engineering professions are made to middle and high school students. If we attract students at an earlier age into our profession, then we are more likely to attract more at the college level.

WANIELISTA: We are losing engineering students because the profession is not supporting scholarships, parents or mentors are lacking, and we are not promoting the profession in the popular media. We need a TV show... dancing with an engineer or some equally popular theme. It is important to promote the image of the engineer.

Other professions are funding education and promoting the ideas that education is more important than holding part-time jobs. As professionals, we need to be more active with our University in giving our time and money. It is time to give back to our educational roots.

Also, and most important... as parents and employers, encourage our students to become full-time students. Next, teach them that there are no easy or quick answers. Instant gratification is for video games. Also enlighten them to the need to maintain technological superiority in a global economy. The most alarming trend is that as a country we continue to lose our edge in engineering inventions and dominance as we continue to produce fewer engineers. That is the trend that we must reverse. Having capable students is one way to reverse the trend. Lets promote ourselves more.

LEO: I believe we are working well at the University level but not early enough to get the students from high or middle schools.

SMITH: It isn't the easiest degree to earn. So the rewards for hard work need to be more obvious. It is a highly respected profession in many other countries, but here in the United States the focus is on the more glamorous or perceived "quick money" opportunities.

MUSANTE: Studying to become an engineer is difficult. I would say just as hard as for doctors and lawyers, yet the praise and pay fall short of these other highly-acclaimed professions. I think when faced with adversity and tough times, salary plays an important role in a young student's mind.

CHOPRA: Current students are better prepared in certain technology-enhanced skills such as the use of computers,

presentation skills, and web research. However, the level of preparation in science and mathematics has not shown much improvement in the past 10 years or so. In some cases, the reliance on technology has diminished the ability to logically analyze problems and use fundamental principles of math and science. It is important to inform the incoming students about the issues in engineering such as professionalism, rigor, and independent, analytical thinking.

WHAT CAN THE ENGINEERING COMMUNITY DO TO PROACTIVELY ADDRESS THE SHORTFALL IN NEW ENGINEERING GRADUATES?

THOMPSON: The basic connections need to be made at a much lower level—perhaps at elementary schools. All engineers should visit their children's schools and promote engineering; discuss with nieces and nephews or friends of the family. Promote the profession and dispel the myths! Show everyone that you are a fun-loving and outgoing person.

ZAYAS: I believe that the first steps should be taken in the middle and high school years to promote engineering and science education at an early age.

RIZZOLO: I'd like to see professional engineers working with undeclared freshman and sophomore students at colleges and universities. Engineering majors have cleared all the hurdles already in the basics. We need to focus on recruiting freshman and sophomores into the engineering programs.

CHOPRA: The long-range remedy needs to be effective leadership and strong motivation. Bill Gates of Microsoft has tried to speak out on both of these issues. The Gates Foundation is striving to improve the level of technological education in our country. Tom Friedman of the New York Times continues to write effectively on the competition from the world, the phenomenon of globalization, and the need for a rigorous educational curriculum. It is important that the leaders (politicians, educators, school boards, etc.) heed these warnings so that we do not lose our edge in the world.

ANDRE: For the past 3 years, I have traveled across Florida and other states conducting Tau Beta Pi Engineering Futures Leadership Seminars for the benefit of engineering students at various universities. This program aims to help future engineers hone their leadership skills and improve their professional lives by providing useful tools such as people

skills, team work, analytical problem solving, and conflict resolution techniques, among others. I wish these extra curricular courses had been available when I went to college. Having a good handle on these techniques can make a huge difference in job satisfaction and advancement within the profession.

BALANCING THE TIME BETWEEN OFFICE AND HOME IS A CONTINUAL CHALLENGE. HOW DO YOU SHAPE YOUR PRIORITIES IN BOTH WORLDS?

THOMPSON: I'll share a short story. One of my biggest accomplishments was starting my own business, and my biggest disappointment was starting my own business with 2 children under the age of 3. Even though I had 3 clients in the first month, I decided to dissolve my company and join a larger firm. My time with my children as they grow up is more important than my career.

LEO: Finding the time for life balance is important. Making the time is essential. Drill down to what is really important and focus on that.

RIZZOLO: I think today's young engineers have a different approach to work than our predecessors. I don't know if there's a certain "trick" to balancing life in and out of the office, but simply a mind-set.

SMITH: I make time to play as hard as I work. Most of the burnout factor in our profession seems to come from just trying to keep up with the pace. If we are more selective about the work we do (love the work we do as individuals and have our firms get better fees for that work) we can do a little less volume of work but do all of what we do better. As is often said, "work smarter, not harder."

MADDOX: People are asked to do more and more both inside the office and in the community. Throw into the mix two working parents where childcare, household issues, and personal errands have to be handled during the course of the day—you get people who are working around the clock. Plus, with everyone wired and constantly available with cell phones, pagers, Blackberries, and the like, there is no downtime. The trick to balancing life in and out of the office is flexibility in the workplace and effective time management.

LONG: With the growth of technology to make us more efficient it also demands we perform faster. Projects that used to take 6 months are now expected and are

produced in 3 to 4 months. I feel that the expansion of technology is creating a level of counter-productivity that is affecting quality of life. In addition, we are moving to a global society where international travel and projects are not uncommon. Travel is exhausting and demanding on all facets of life. Also, using good time management skills to balance your production work with your meetings can reduce overtime. If overtime is required, developing a way to do this from home.

WHAT STEPS NEED TO BE TAKEN TO ELEVATE OUR ENGINEERING BRAND?

LEO: We need to take more pride in being an engineer.

RIZZOLO: This is extreme, but I'll use it to make a point about the engineering brand: What's the most popular segment of "Modern Marvels" on the History Channel? "Engineering Disasters." I think they're up to Volume 18.

THOMPSON: The fees engineers charge are always a sticking point. Do you negotiate the rate with your doctor or lawyer? No. So why do engineers have to continuously justify their fees? Also, there are always engineering firms out there ready to do the job for lower and lower fees. A client needs to look at the long-term costs associated with low-fee contracts and determine if it is worth the scope reduction, schedule lengthening, or increase in liability.

SMITH: It isn't the case with every project or every client, but if you've ever heard that old saying "faster, better, cheaper: pick two" it really does seem that too often people are willing to settle for the "faster" and "cheaper." It is hard to really take pride in work done that way.

WHAT BENEFITS IN THE WORKPLACE ARE GETTING THE MOST DISCUSSION?

LEO: Salary. Given the shortage of engineers coming out of school, salaries are going up. I think the industry and our clients are still in denial.

THOMPSON: By far, the greatest determining factor is salary. Even though the total compensation package is worth more in one firm than the other, the bottom line is the almighty dollar. When it comes to benefits, vacation time is the most important to me. I would also love to see a 4-day work week. Another factor is firm culture. I think the young engineers today are more critical of their work environment than their parents were

in their first jobs.

LEO: Company benefits: What are most important to me? Vacation.

RIZZOLO: Time off! Generally, younger engineers don't need all of the sick time, disability, etc, that is offered—that is why a PTO system that combines sick and vacation time is more attractive than a traditional method of days off.

MADDOX: A lot of the interesting benefits that I see being explored are to address the work-life issues and to get people more engaged in the profession. Mentoring programs, flexible working hours, tenure-based sabbaticals, 360-degree reviews—all of these are unique ways in which managers and industry leaders are looking to attract and retain professionals.

MENTORING IS OFTEN DISCUSSED AS AN IMPORTANT TOOL FOR THE YOUNG ENGINEER, YET PROGRAMS ARE OFTEN UNDERSTATED AND INFORMAL. WHAT IS YOUR EXPERIENCE?

SMITH: There is a fine line between mentoring and butting in. The greatest reward is seeing someone succeed that you work with. Mentoring isn't a process that can be tracked with a score card, because it may be the one thing someone mentioned in passing that meant more to the individual than hours of input from another who was formally assigned as a mentor.

THOMPSON: Mentoring is the single most important activity anyone can do for a young engineer. I was lucky to have a great mentor who shaped my career. A mentor can be more than one person. If you keep your eyes and ears open, you can learn just as much by watching someone doing something wrong as you can by watching them do something right.

LONG: Mentoring gives incentive, hope for advancement, and builds pride and confidence in the company at an early age.

ENGINEERS ARE SOMETIMES ACCUSED OF BEING TOO INSULAR. ONE WAY TO PROACTIVELY ENHANCE THE ENGINEERING BRAND IS SIMPLY BY INTERACTING WITHIN OUR OWN COMMUNITIES. THE CHALLENGE: MAKING TIME. WHAT ADVICE DO YOU HAVE FOR THE PROFESSION?

THOMPSON: I really enjoy volunteering in the community. I have judged and been involved in elementary, middle, and high-school engineering-related competitions.

MADDOX: Get involved. By being one of those who is committed, you will build up your own recognition in the profession and the community while establishing friendships and connections with others who are equally as motivated. Your network will be one comprised of the people who have the same level of commitment and the same values—and the benefits will far outweigh the efforts.

LEO: I have some time, but have had to make a balance between work and family (two young children). I have participated in the Lake County Bicycle and Pedestrian Advisory Committee and most recently in Junior Achievement. It has made me well-rounded and this vision carries through other things that I do. I've also met some great folks from the community.

SMITH: There is always time for some community involvement. A day helping Habitat for Humanity or volunteering for another organization, civic or charitable, is so rewarding that it is usually worth much more than the time invested. We are supported and encouraged to participate, as is apparent from the number of activities I've participated in through FES the 10 years I've been a member. I think it is obvious to all of our firm's leaders, as it is to me, how important the contacts are that we make through our involvement. Many of these are relationships that will last long after the hours we spend on the actual activity.

END POINTS

LEO: What is my preferred method of networking? Performance. If you perform, the network finds you.

THOMPSON: If you show initiative, you will be given responsibility. If you are responsible, you will be able to lead. When you are leading, know when to follow. ■



Charley Williams is a native of Jacksonville and has lived in Orlando since 1990. Prior to managing business development for GEC, Charley worked on Capitol Hill for a Florida

Congressman, served on the state desk for the National Association of Homebuilders, directed a policy research trade association for southern legislators and governors, and helped to coordinate Orlando's successful World Cup soccer effort. A personal career highlight: a self-imposed seven-month sabbatical in Africa and Brazil.

VIEW from the TOP:

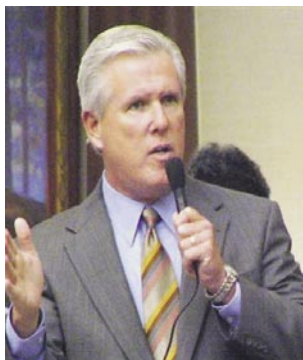
What some industry leaders are saying about the engineering profession, the year ahead, future trends, and workforce challenges.

BY JOANIE SCHIRM, PRESIDENT, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC (GEC)



Mike Hermesmeyer, PE, CEO and President, LBFH, Inc, Palm City

Engineer Hermesmeyer graduated from Missouri-Rolla. He joined LBFH, Inc in 1989, becoming their CEO and President seven years ago. He currently serves as Vice President of FICE, a Board member and past Chair of the Martin County Economic Council, and Vice Chair of the Martin County Industrial Development Authority. He was named Engineer of the Year in 1990 and 2002 by the FES Treasure Coast Chapter.



Representative Stan Mayfield, PE, Florida House of Representatives, Vero Beach

Engineer Mayfield graduated from the University of Florida in 1987 with a degree in civil engineering. He was elected to the Florida House in 2000. Other public service includes Assistant Superintendent/Facilities and Support Services for St Lucie County School District from 1997–2001 and being on the Indian River County School Board from 1992–1996. He was a past Board member of the Community Child Care Resources, past member of the Treasure Coast Kiwanis, Indian River County Chamber of Commerce, and a member of the FES. He is a professional engineer and general contractor for Mayfield Group Construction.

Have you ever wondered what makes a city, region, or state great? How can an entire region enhance its economic future and compete on an international level? According to author Richard Florida, engineers comprise one of the most desirable and innovative categories, called the super-creative core.

Joining engineers in this key strategic grouping are architects, the sports industry, arts, and entertainment. Based on Florida's book, *Rise of the Creative Class*, he credits a top-tier creative class as the fundamental driver for the envied level of community synergy. Simply put—engineers can drive change,

the kind of change that leads to “greatness.”

We asked several of Florida's super-creatives in the engineering community a few questions about long- and short-term trends and challenges. We found a diversity of solutions in how they perceive their missions, visions, and values.

WHAT ARE OUR GREATEST CHALLENGES IN THE INDUSTRY AS WE LOOK AHEAD TO 2006?

STUTLER: I believe that the industry has some challenges in 2006 as well as opportunities. As for challenges, the higher than anticipated cost increases of building projects is one of the biggest challenges. For the Florida Department of Transportation (FDOT), the net result of cost increases significantly greater than projected is the delay of specific project phases in order to balance our project expenditures with revenues. We are putting together a summit with the industry to discuss the cost increases. I am hopeful that we can get our arms around the trends and see if there are any options

that we can consider.

Another challenge is the labor market of skilled labor for construction and engineering. FDOT as a leader in the road and bridge building industry should be at the table alongside the industry doing everything we can to encourage young people to consider a career in the field.

As for opportunities, we are celebrating the 50th anniversary of the Interstate System in our country and in Florida. It is a good time to have a dialogue regarding our transportation network for the next 25 to 50 years. I think we should think boldly in this regard. I am optimistic that we can begin a meaningful dialogue.

WATTS: The biggest issue in our entire industry is the inability to attract and retain the right people. We are all aware of it—we just don't seem capable of addressing it. We all know it's there. For now, we appear more than willing to swap

employees at ever-escalating prices rather than to deal with it. If we don't solve the labor shortage issue, there is absolutely no way that fees can keep up with costs.

ZUMWALT: Our biggest single constraint in Florida is the limited workforce of the future as the "baby-boomers" enter retirement. Our strategy at PBS&J is to position ourselves as the employer of choice to promote a culture of leadership, a "culture/values" approach in a "growth/value" organization. In other words, we want each member of our team to be proud of the journey and the financial result. We obviously have to blend both to be successful, but I feel the value-added comes from the heightened culture and work environment that you invite your employees to co-create. That awareness can translate into long-term loyalty, motivation and be able to weather unexpected surprises.

One such example is PBS&J University which has its own Board of Regents (employees) with a full-time director. A continuous learning environment has been a cornerstone of our company and the results have been phenomenal. It helps keep people with us on the journey. Our turnover was as high as 18% five years ago and now hovers around 10%.

Most companies may have their own retention strategies. But in the long run, our industry may have to make some bold moves to ease the looming limitations on available workforce.

MAYFIELD: I realize that the continuing litigation issues in Florida are on the minds of many of our companies. We continue to chip away at tort reform in Florida. Frivolous lawsuits are one of the biggest headaches. I am hoping that we can limit advertising/800-numbers for "ambulance chasers." There seems to be support within the trial attorney organization for this as well.

But let me remind you that Representative Trudi Williams, PE and I are the only two licensed engineers in the Florida House of Representatives. We have a challenge.

HERMESMEYER: Nuisance lawsuits, in the \$5,000 to \$9,000 range, are becoming bigger issues within the industry. No doubt, it is impacting our project costs. I believe Florida has more attorneys per capita than any other state. The trial attorneys are a formidable and exceedingly well-funded lobby. At some stage we need to address this dynamic. Case in point: let's work to increase participation in the FICE Consulting Engineers Legislative Council (CELC). We are currently at 80 members, each contributing \$1,000. Our goal is simple: reach 100 members and have \$100,000. CELC's goal is to keep current engineering issues in the forefront of legislative attention. Actively supporting pro-engineer candidates is the single most effective tool in this effort. With 395 engineering firms that are members of FICE, we should be able to accomplish this goal.

WHAT IS THE OUTLOOK FOR TRANSPORTATION IN FLORIDA?

WATTS: Transportation is never going to be able to keep up with the increasing demand for mobility. In fact, one major challenge in Florida is that rising construction (particularly materials) and right-of-way costs are having such significant impacts on agency work programs that increased revenues for transportation are having to be used to offset these rather than provide needed capacity. Highways are going to increasingly need help from transit in any number of forms. Coastal development and redevelopment must also be carefully scrutinized in order to provide as much protection to life and property as possible. This, in itself, says that it is going to be more expensive to live in the coastal areas.

STUTLER: FDOT should be about two significant things: (1) getting people where they want to go and (2) getting goods to market. I am encouraged by the vision being created in communities around the state. FDOT should be a partner with local communities assisting them in achieving their vision. The demands are greater than the funds to meet them so it is important that investments achieve the 'biggest bang for the buck.'

Continued on the Next Page

Denver Stutler, PE, Secretary, Florida Department of Transportation (FDOT), Tallahassee



Principal with CDM. He served as a Senior Fellow for Senator Connie Mack in the 105th Congress.

Ben Watts, PE, Former Secretary, FDOT, CEO, Carter and Burgess, Fort Worth

Engineer Watts graduated from the United State Military Academy at West Point in 1969. He joined the Florida Department of Transportation in 1974. In 1989, Governor Bob Martinez appointed him Secretary of FDOT and was reappointed by Governor Lawton Chiles in 1991 and 1995. In 1997, he went into private practice and joined the firm of Carter & Burgess, Inc, as Principal and Senior Vice President. In 2004, he was named their CEO and President.



John Zumwalt III, PE, CEO and Chairman of the Board, PBS&J, Tampa



Engineer Zumwalt joined PBS&J in 1973, just after graduation from the University of Rhode Island with a degree in civil and environmental engineering. Under his leadership, PBS&J became recognized nationally, voted one of the *Top Places to Work For* in the industry, won a coveted Stevie Award for Human Resources, the prestigious Cutting Edge Award from the Miami Chamber of Commerce, and named to

the *Hot Firm 2004* list of fastest-growing engineering firms by Zweig White Associates. He is past president and director for FES, past president of FICE, and a founder of the Florida Engineering Leadership Institute. He has been recognized for his Outstanding Service to the Engineering Profession and awarded the Governor A. W. Gilchrist Award for public service. He serves on the Boards for the Florida Chamber, Florida Tax Watch, and Enterprise Florida. He was inducted into the Engineering Hall of Fame at the University of Rhode Island.

View from the Top Continued WHAT CHALLENGES ARE WE FACING WITH RECRUITMENT AND RETENTION IN THE WORKPLACE?

WATTS: On the recruitment side we need to work with the educational institutions, beginning in the middle schools, to help students understand that an engineering career is not only a great career, but also a rewarding one. The benefits review/retention issue is a constant process with us. That said, I don't believe that benefits are the key issue driving turnover. I think that it goes right to the heart of the relationship between employee and supervisor. No matter how many times we say that we are in the "people business," we seem willing to forget it when things get really, really busy.

HERMESMEYER: We began concentrating on campus recruitment in earnest nine years ago. As our process has evolved we have focused on several benchmarks for selection. In addition to the preferred grade point of 3.5-3.0, we key in on activities where leadership was exercised versus passive membership. We have found we get more support from the mid-sized schools where placement offices aggressively seek out strong relationships with employers. We have now gone outside the state of Florida in our recruitment efforts.

ZUMWALT: One of the unintended consequences of the Patriot Act is that we are losing some of our best foreign students due to changes in the visa waiver program and other impediments. No one seems to be addressing the long-range implications of this trend: could we be making ourselves an island nation and how long before we see the unintended consequences of this policy? Singapore, Amsterdam, Toronto, Sydney, and Dublin are just a few of the 24/7 cities that will attract this talent pool.

MAYFIELD: We need to make it easier for students to access the classroom. Whether it's satellite feed or on-line instruction—we can't continue to allow access to instruction become a disincentive. This is an increasing problem for the traditional student in our urban environments. We must find ways to make it easier for engineering students to progress through the educational pathway.

STUTLER: I think there are industry challenges. The overall pay issue is one that we can improve. To me, the pricing of engineering services should be priced more along the value of problem-solving

rather than the commoditizing of services. I believe there is great value in problem solving. I also think that we should encourage students that have an interest in mathematics and science to consider the engineering field. FES sponsors many good programs around the state that can be built upon.

FLORIDA HAS NOW EXPERIMENTED WITH DESIGN/ BUILD FOR OVER 5 YEARS. HOW WOULD YOU CHARACTERIZE THIS EXPERIENCE?

WATTS: I am afraid that design/build (D/B) is becoming seen as a panacea for all the ills that owners, both public and private, see in the construction process. If we really do believe that "time is money," in terms of dollars spent on the initial product—I don't see a great deal of savings. If we believe that we can transfer the liability away from the owner to the contractor, it will continue to expand. Certain projects lend themselves to design/build: others do not. We are becoming more selective in which projects we choose to pursue.

Simply
put—
engineers can
drive change
that leads to
“greatness.”

HERMESMEYER: I have been an active member of the Design/Build Institute of America (DBIA). Once you hear the word "bid," it is no longer design/build. D/B works best when responsibility is truly shared between the owner, the architect/engineer, and the contractor. D/B in its current usage, really low-bid, could come back in 5 to 10 years as increased maintenance costs. This is a disservice to the citizen. One solution might be to have state agencies spend more energy in the scope development phase.

ZUMWALT: By now, most professional engineers have participated in design/build. D/B by its very nature has someone wedged between the classical owner/engineer relationship of privity and trust... a contractor. D/B has many merits as a project-delivery approach, but its long-term impact on the professionalism of the profession in terms of how society views engineers is yet to be seen.

In order to preserve that long-standing relationship that helps make us a profession, we are willing to step it up to CM-at-Risk as a delivery system. To this end, we have launched our own CM-at-Risk affiliate company, which gives you that owner's/engineer relationship while taking on the added/managed risk of construction.

In design/build, some contractors tend to see engineering as a commodity. This being the case, we'd rather see ourselves in the lead. Understanding value and proper risk/reward pricing is the holy grail of engineering. In order to get more reward, engineers must be comfortable with more risk.

STUTLER: I think that it is recognized as a viable method of delivering projects. It is clearly in the toolbox. There can be a substantial time savings using D/B. But it is not a panacea. At FDOT, it certainly has become a consideration in the early phases of many projects. There are pros and cons that should be evaluated on the basis of complexity and costs of individual projects.

The D/B method does change the dynamics of the role of the engineer more than probably any other person in the project compared to the design, bid, and build model.

ADVOCACY: HOW CAN ENGINEERS PARTICIPATE EFFECTIVELY TO IMPACT IMPORTANT POLICY DECISIONS?

STUTLER: Policy involvement is a perfect match for our industry. Why? Engineering training is all about problem-solving. When I was a member of ASCE in Central Florida, I carried a vanity plate on the front of my car: "We're a People-Serving Profession." What a terrific message to carry forward. Opportunities for engineers to be involved at some level of government are limitless—and it could really be rewarding. One of the differences between public and private sector service is the sheer volume of interactions we have on the public side with both people and issues. I routinely handle 100 e-mails a day, 50 phone calls, and 15 meetings. Effectively managing and digesting those

competing interests is a skill that engineers cultivate and thrive on. Yet the truth is, most of us in the profession don't do much beyond engineering. How can we change this?

WATTS: First, let me say that it is not only in the best interest of our industry to be part of the key policy decision process, but it is our responsibility as professionals to be part of it. We can participate directly in the political process by supporting those candidates who understand and fairly represent our issues. We can also provide input, especially from a professional and technical perspective, as decision makers formulate policy positions. It all goes back to being in the "people business"...if we establish solid, credible relationships with those are policy makers, they will turn to us for counsel.

HERMESMEYER: Traditionally, engineers simply don't show up at the policy stage of public involvement. Most firms do underscore community involvement of some sort—if you want to speed up your career path, you do it. But this is a challenge for our profession.

Engineers are by nature 60-70% introverted. It has been my pleasure to serve as past chair of the Martin County Economic Council but it was not always easy. At times I had to go before the Board of County Commissioners about growth pattern issues, and this took me out of my comfort zone. Now at LBFH, we have lowered billable productivity 10-15% in order to encourage public involvement. This has resulted in meaningful involvement and reduced workload pressures.

ZUMWALT: My observations are that our industry is simply not at the table for the early policy planning and decision-making cycles. This is a critical shortfall. As an industry, we need to understand the importance of policy. The first rule of being active in your community is very simple: You have to leave your office. You may start serving with the Chambers and on task forces, but at some stage you begin a transformation: you are no longer offering engineering advice on a committee. As you progress and begin to walk with civic leaders, you are asked to advise on public policy. The problem for us industry-wide is that nowhere along the engineering education continuum do we teach anything about public policy. Our discipline is a natural for the complexities of policy organization, research, and interpretation. I tend to key in on the research angle. Research leads to policy, policy leads to design, design leads to construction. Research is the head of the chain. I wish more of us would focus at the head of the pack.

MAYFIELD: As engineers, we spend our college years and careers learning how to break systems into pieces. I can't think of a better application than the political world.

It's our very nature to ask the tough questions. We need that detailed line of questioning in government that is by nature... chaotic! Our engineering industry needs to venture out from the four corners of the statutory requirements, get out of the comfort zone, and get involved.

What would be a first step? Consider getting involved in a local campaign. It's a fascinating exercise in getting to know your community. A House race in Florida can now cost as much as \$250-

\$350,000—plenty of room for detailed organization, tracking, and strategic outreach.

SCHIRM: Here's a parting idea: perhaps if we are serious in moving some of these advocacy suggestions forward, we could incorporate a new category: "public policy impact" into our next round of E-week award application criteria. Let's celebrate the initiatives around the state! ■



About the Author: As president of Geotechnical and Environmental Consultants, Inc (GEC), Orlando, Joanie Schirm has led the company to serve clients throughout the State of Florida.

Celebrating its 15th anniversary this year, GEC takes pride in its motto, "at the very foundation of our community." Joanie's most recent community activities include Chair, I-4 Design Review Committee for Orlando Mayor Buddy Dyer and Chair, The Get Around Team(GAT) Team, a group of Orlando stakeholders promoting expansion of downtown transit circulators to connect people and shape places.

Redesigned Web Site - www.fleng.org



FES is proud to announce the launch of its redesigned Web site. Along with the new look comes a variety of new features and sections. We hope you enjoy the amazing 2006 Engineering Excellence Award winners rotating throughout the site and explore new services such as **Find A Firm** located in FICE/PEPP. The **Conferences and Training** menu incorporates seminars and other educational opportunities into one easy-to-use format. Member Services offers you **instant access to local chapter** information with the use of a regional map. Membership tools are readily available for ideas toward recruitment and retention of members. Our **sponsors' logos** and their Web sites are accessible as they appear on continually changing pages. While you are browsing, be sure to check out the **Practice Sections'** new look. If you have concerns comments, or would like to sponsor the site, please contact us at fes@fleng.org.