

K-12 Committee Annual Report

Michael J. Davis, PE, Chair



The K-12 Committee is charged with connecting engineers with students and turning students into engineers. The 2009-10 Committee met and exceeded these expectations across

the state. Engineers made presentations, judged science fairs, assisted with Future City Competition®, developed outreach programs with county school boards, assisted JETS, partnered with local science museums and Challenger Learning Center, promoted programs at MATHCOUNTS® events and trade shows, educated teachers on how to teach engineering, and much more. The success in each of the 20 chapters continues to grow and strengthen; for this I say "Thank you."

The K-12 Committee continued with their annual programs that included the volunteer database, monthly K-12 Korner articles in the *FES Journal*, *Discover Engineering* PowerPoint presentation, presentation materials such as the *Engineering, Go For It* books, plus countless hours in coordinating volunteers. This year the committee developed and held the inaugural K-12 awards program. Two awards have been developed to recognize an Engineer Volunteer of the Year and a Teacher of the Year for Engineering. The awards provide cash to the individual recipients and to either their chapter or school as a way to support future K-12 engineering programs. The committee felt it was important to recognize and give back to those individuals who are taking the time to make a difference in the future of the profession.

The activities in the local chapters continue to be the strength of the committee. A summary of the chapter activities is as follows:

- Central Florida – Partnered with UCF College of Engineering and Computer Sciences (CECS) to develop an engineer-teacher connection pilot program; held their successful planning, engineering and science fairs; provided mentors for UCF CECS Leadership Institute; participated in the Great American Teach-In for Orange, Osceola, and Seminole Counties; worked with Megan Clementi, Miss Florida and UCF graduate, on her outreach to girls interested in math and

science; assisted many schools with their science fair programs.

- Big Bend – Kicked off the year with a very successful summer program called SciGirls held at the FAMU/FSU College of Engineering; partnered with the Challenger Learning Center to train FES members on the WeDo™ LEGO® Robotics program, then trained members volunteered in the local elementary schools; assisted the Leon County School Board in supporting the engineering program at Chiles High School; assisted the FAMU/FSU Student Chapter in developing a high school engineering competition; provided judges for middle school science fairs; and plans to continue support of the SciGirls Summer Camp for 2010.
- Broward – Presented the Discover Engineering Program at the MATHCOUNTS® presentation along with providing FES with the most current version. Their presentation at MATHCOUNTS® resulted in requests for seven additional classroom visits.
- Calusa – Held a successful reception that welcomed Ioannis Miaoulis to speak to the local science museum; continuously had volunteers in the classroom speaking to high, middle, and elementary schools; supported local science fairs; held an engineering day in the middle school classrooms; held training sessions for teachers on Engineering in Elementary curriculum in five counties; developed monthly K-12 newsletter and Facebook® page; and planned the K-12 Session at the annual summer conference and exposition.
- Forest Chapter – Held engineering day at Discovery Science Center for K-12, provided judges for middle and high school science fair and continued successful MATHCOUNTS® program for middle school students.
- Gulf Coast – Held science, technology, engineering, and mathematics (STEM) activities at the FSU Panama City campus; profiled careers in engineering to share with students; worked with Bay County school board to bring together the professionals in the community with educators, in a program called Faculty in the Factory.
- Miami – Developed a strong network of K-12 volunteers throughout Miami-Dade County, with each committed to visit elementary, middle and high schools; strongly supported the local Future City Competition® and MATHCOUNTS®; received support from Dade County public schools; expanded K-12 outreach beyond 12th grade, and connected college students with high school classrooms.
- Northeast Florida – Started the school year early with mid-summer meetings between the chapter and school board members and officials to discuss K-12 programs; results of the meeting included a revised PowerPoint program for magnet schools, incorporation of current lesson plans (requiring up front and direct coordination with teachers) into the engineering presentation, and had a significant increase in the number of schools represented in our local MATHCOUNTS® competition. The monthly chapter newsletter includes a regular K-12 activity report which recognizes members (and their companies) for volunteering, and has increased volunteer participation. Over the course of the school year, fifteen of our members volunteered in ten schools and spoke to nearly 1,500 elementary and middle school students located throughout Nassau, Duval, St. John's, Clay, and Putnam Counties. They also volunteered to be judges at five local, state and regional area science fairs. We also volunteered to help the Regional Career Academy Engineering Council (organized by the Jacksonville Chamber of Commerce). This included attending meetings, facilitating discussion, and developing, distributing and analyzing a survey for the Council. Finally, through direct coordination of the FES K-12 program, many members volunteered in Engineers Week activities (e.g., Introduce a Girl to Engineering, JETS TEAMS competition) and Girl Scout and Boy Scout merit badge events. Members also volunteered in other local area engineering and science-based activities including ACE (Architecture, Engineering, and Construction) mentoring, school engineering academies, career fairs, and science fair judging.



- Northwest Florida – Continued with a successful MATHCOUNTS® program for 2010. New this year, volunteers participated in the I Love Science program for fifth graders. Once per month, volunteers go into the classroom to work with students to complete a science experiment. FES members participated in judging a regional science fair competition for middle school and high school students along with annual e-week banquet planning and funding.
- Palm Beach – Chapter members held 34 events, provided 688 man-hours, and reached out to 3,618 students at 20 schools. Programs supported included MATHCOUNTS®, Drop It, Build It, Fly It, Thrill It, 2009 annual conference K-12 session, SECME after school program, SECME Olympiads, Project Lead the Way® (PLTW), career days, and classroom presentations. Chapter member Dave Stewart, PE created a reusable suspension bridge project kit for grades 3-12. Chapter Board Member Joanne Koerner, PE also co-managed (with ASCE) a high school elective course, Introduction to Engineering. A golf tournament raised \$13K in funds for scholarships to high school and college students.
- Pinellas – Supported Boca Ciega High School's PLTW program which reached academy status for 2010-11 school year; participated in the Great American Teach-In; and is coordinating construction planning to reduce energy consumption by three schools—Northeast High School, Meadowlawn Middle School and Sexton Elementary School—by installing photovoltaic solar panels as a pilot program. The chapter also mentored three of nine middle schools participating in Future City Competition®, and supported the Yes We Care program as a partner with the University of South Florida.
- Ridge – Had the opportunity to provide volunteers to participate in the mathematics textbook review for K-8 and high school A and B committees, the text books selected will be used from 2010-16; presented the Discover Engineering Program during local MATHCOUNTS® competition; and reached out to 8th grade students during a special presentation.
- Tampa – Scheduled meetings at magnet engineering high schools to assist with recruiting middle school students interested in math and science; highlighted engineering students in monthly chapter newsletter; and continues to partner with MATHCOUNTS® program.
- Treasure Coast – Coordinating efforts between local MATHCOUNTS® and PLTW volunteers; participated in job shadowing program where students are invited into the work environment.

Thank you to the many volunteers that made the K-12 programs a success. I would like to personally express my appreciation to the committee volunteers, monthly K-12 article writers and all those who are helping to make a difference by volunteering in the classroom. A special thanks goes to Kate Ray for keeping the committee organized, on-track, and for making my life easier.

Order Of The Engineer

“Upholding Devotion to the Standards and Dignity of the Engineering Profession”



Order of the Engineer Ceremony being held at the the FES/FICE 94th Annual Summer Conference and Exposition at the beautiful Marco Island Marriott Beach Resort, Golf Club & Spa on Saturday, August 7

About The Order

The Order of the Engineer was initiated in the United States to foster a spirit of pride and responsibility in the engineering profession—to bridge the gap between training and experience, and to present to the public a visible symbol identifying the engineer.

The first ceremony was held on June 4, 1970 at Cleveland State University. Since then, similar ceremonies have been held across the United States at which graduate and registered engineers are invited to accept the Obligation of the Engineer and a stainless steel ring. The Order is not a membership organization; there are never any meetings to attend or dues to pay. Instead, the Order fosters a unity of purpose and the honoring of one's pledge lifelong.

The Obligation is a creed similar to the oath attributed to Hippocrates (460-377 B.C.) that is generally taken by medical graduates and which sets forth an ethical code. The Obligation likewise contains parts of the Canon of Ethics of major engineering societies. Initiates, as they accept it voluntarily, pledge to uphold the standards and dignity of the engineering profession and to serve humanity by making the best use of Earth's precious resources. To participate, call FES at 850-224-7121.