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# Columbus Engineer

Official Publication of the Franklin County Chapter of the Ohio and National Societies of Professional Engineers

## PRESIDENT'S MESSAGE

By Richard Smelker FCC President



April is a very important month. We elect Officers and Trustees for the coming fiscal year. Contained in this issue is the ballot. **BE SURE TO VOTE.**

This month Luncheon program is scheduled on April 17 at LaScala on "Legislation and the Impact on Professional Engineers". See more details below.

State Science Fair is May 10th. Jim Arnold, P.E. needs other PE's to join him in judging the projects. Please contact Jim and let him know that you will help. This is our chance to interact with students interested in engineering. Jim's contact information is 614-299-2133 or Jim@haslettmechanical.com

Also included in this issue an article and pictures about Engineer-for-a Day (EFAD) held February 20, 2014.

(President's Message continued on Page 2.)

## FCC-OSPE April Luncheon Program

**Date:** Thursday April 17, 2014

**Place:** La Scala Restaurant  
4199 W. Dublin Granville Rd., Dublin, OH

**Time:** Registration: 11:30 am  
Lunch: 11:50 am  
Speaker: 12:00 pm  
Closing Remarks: 1:00 pm

**Cost:** Members: \$20.00  
Non-Members: \$30.00

**Registration:** Visit fccospe.org. Pay at door or online at (www.fccospe.org). No access to computer contact Jim Arnold, 614-299-2133, to help with registration.

**Topic:** "Legislation and how it effects the Professional Engineer " There are currently 33 bills in the Ohio House of representatives and Ohio Senate that have an impact on the Profession of Engineering. I would like to highlight a few of the current bills and discuss how Professional Engineers throughout the state can aid the Ohio Society of Professional Engineers in the preservation of the PE License.

**Speaker:** Joseph V. Warino, PE, PS, F.NSPE



Joseph V. Warino is a registered Professional Engineer, registered Professional Surveyor, and Fellow in the National Society of Professional Engineers. He served as President of the Ohio Society of Professional Engineers (2009-2010) and President of the Engineers Foundation of Ohio (2007-08),

2012-13). Joe currently serves the Ohio Society of Professional Engineers as Vice President of Legislation and Government Affairs. Joe received his Bachelor's degree in Civil Engineering from YSU with a minor in Economics. Joe has served on the Advisory Board for YSU's Civil Engineering program for the past 12 years, and was awarded the YSU Outstanding Alumnus Award in 2010. Joe has held several public and professional positions in the Mahoning Valley.

*A certificate for 1 hour Professional Development for attending the program will be presented at the luncheon.*

Last month was a busy month for FCC members. March 8 was the state MATHCOUNTS held at Columbus State, numerous Chapter members participated in proctoring and grading the exams. After our last FCC board meeting, the entries for the Imagine Engineering second grade coloring contest in the FCC area were reviewed. The top three were chosen and forwarded to the State office.

On March 15 the certificate ceremony for new Professional Engineers and Engineer Interns was held at the Statehouse. NSPE President- Elect 2013-2014 Harve Hnatiuk, PE, F.NSPE attended the ceremony and provided comments to the new registrants. Also on that day, District Science Day was held at Columbus State. A number of chapter members reviewed projects associated with engineering and selected the top three for recognition.

Also on March 15, 2014, FCC/OSPE was a cosponsor with Columbus Section of IEEE of a "Stock Market Investment Program" presented by Tai Wong, PE. I believe there were approximately 60 attendees.

The Luncheon on March 20, 2014 at the Worthington Hills Country Club, presented the "I70/I71 South Interbelt Study-Project 2 East Interchange". This was an excellent presentation showing how the I70 and I71 Interchange will be redesigned and constructed.



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## FCC AUXILIARY APRIL EVENT

The Auxiliary to the Franklin Co. Chapter of OSPE will meet for a noon luncheon on Tuesday, April 15, at Worthington Hills Country Club, 910 Clubview Dr. South, Worthington, Ohio. There will be a program perfect for spring--Mark Miller, PhD who is with the Franklin Park Conservatory will speak.

Jane Smith will give the invocation and lead the pledge of allegiance; Betty Cunibert is to be hostess. All prospective members and guests are welcome. Please call Jean Mitchell at 262-7071 to make a reservation.

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**FRANKLIN COUNTY CHAPTER  
OHIO SOCIETY OF PROFESSIONAL ENGINEERS  
BALLOT FOR ELECTION OF OFFICERS  
2014 – 2015**

**2013-2014 Previously Elected Positions**

**President** – Steve Wilson, PE  
*American Electric Power*

**Treasurer** – Steve Day, PE  
*Day Engineering, LLC*

The following Trustees are in the second year of a two-year term:

**PEPP Trustee** – Paul Junk, PE, PS  
*Retired*

**BALLOT**

(Please Check or Write-In Selection)

**Vice-President/President-Elect (vote for 1)**

Paul Junk, PE, PS  
*Retired*

**Vice-President (vote for up to 3)**

C.R. Weaver, PE  
*City of Columbus*

Devon Seal, PE  
*Gresham Smith Partners*

Kevin Ernst, PE  
*Terracon Consultants, Inc.*

**Chapter Secretary (vote for 1)**

Ryan Dolan  
*American Electric Power*

**Chapter Treasurer-elect (vote for 1)**

Steve Day, PE  
*Day Engineering, LLC*

**Trustees**

**(Vote for only those Practice Divisions that you belong –  
the term is two years unless otherwise noted)**

**PEC Trustee**

Bruce Larcomb, PE, PS  
*Fire & Building Consultant*

**PEG Trustee**

C.R. Weaver, PE  
*City of Columbus*

**PEHE Trustee**

Write-in candidate

**PEI Trustee**

Tina Sutermeister, PE  
*Alcatel - Lucent*

**Retired Professional Engineers Trustee**

Ron Eifert, PE  
*Retired*

**Young Engineers Trustee**

Ryan Dolan  
*American Electric Power*

Write-in candidate

Position

Write-in candidate

Position

Write-in candidate

Position

Write-in candidate

Position

**VALIDATE YOUR BALLOT**

**Please Sign (or Type) Your Name to Validate Ballot**

Return to:

**Stantec Consulting Services Inc.**  
1500 Lake Shore Drive, Suite 100  
Columbus, OH 43204  
Attention: Joe Sullivan

Or Fax to: Joe Sullivan at 614-486-4387

Ballots must be postmarked by May 7, 2014



**FCC 2014 OUTSTANDING ENGINEERING EDUCATOR AWARD**

The 2014 Franklin County Chapter Outstanding Engineering Educator Award recipient is Professor Paul R. Berger, PhD. Dr. Berger has been nominated by the Ohio State University Executive Dean of Engineering, David B. Williams, PhD, Sc.D. for his outstanding contributions to the Ohio State University Department of Electrical and Computer Engineering. Dr. Berger received his doctorate in Electrical Engineering from the University of Michigan in 1990. Dr. Berger joined the Ohio State University in the summer of 2000 and was promoted to Full Professor in 2003. He is co-Director of the Department's Nanofabrication and Materials Processing Center (NanoMPC) and has sparked a re-birth and significant growth of the current NanoMPC facility as the founder of the Nanoscale Patterning Laboratory. Dr. Berger has been teaching multiple courses at the undergraduate and graduate levels at the Ohio State University.

Professor Berger believes some of the most memorable and valuable teaching moments occur when students are able to meet with faculty one-on-one, and undergraduate research is a forum to do exactly that. Berger has mentored over 95 undergraduate researchers in various projects over his faculty career. He will be overseeing 14 undergraduate researchers in Summer 2014 and at least one high school volunteer. Teams from his group have been winners at the Denman Undergraduate Research Forum in 2012 and 2013 with an entry again in Spring 2014. He was also a finalist for the seminal Director of OSU's Undergraduate Research Office.

He is also award-winning faculty member and a faculty advisor for four active student clubs. Berger was the

2009 recipient of the College's Faculty Diversity Excellence Award. In 2010, Berger launched a group of underrepresented engineers that eventually galvanized into the Recruitment and Retention Initiative for Successful Engineers, a club which Berger serves as the seminal faculty advisor. As faculty advisor for the IEEE Undergraduate Student Chapter, Professor Berger seeks to expose undergraduate undergrads to different areas of the broad ECE discipline in order for them to properly select the career path that works best for themselves. Berger is also the faculty advisor for the IEEE Graduate Student Body. More recently, Professor Berger has taken on the Faculty Advisor role for the Ohio State's Solar Education and Outreach club, which seeks to promote greater awareness of alternative clean and green energy, such as installing solar cell powered motion detector lights around off campus housing to promote off-campus safety as well as an alternative Spring Break to Haiti to electrify an off-the-grid school each year. He is currently a finalist for the Emerging International Engagement Award, which includes aspects of his solar outreach to Uzbekistan.

Dr. Berger is a Fellow of IEEE, effective January 2011, and a Senior Member of the Optical Society of America (OSA). He is also a recipient of the 2011 & 2006 Lumley Research Award. Dr. Berger made seminal contributions to the QMOS Team, a multi-university, industrial lead team, which elicited a 1998 DARPA Excellence Award. He also received the prestigious National Science Foundation's Faculty Early Career Development Award (CAREER) in 1996, which was formerly known as the Presidential Young Investigator Award. In 2009, he received OSU's College of Engineering's Faculty Diversity Excellence Award for his promotion of diversity students within his graduate and undergraduate research team.

Dr. Berger even won the Fisher Business Plan Competition and has been a finalist for TechColumbus' Inventor of the Year (2008, 2012). His latest startup company has been recommended for 2014 funding by the Ohio Third Frontier and portions of that work recently featured on 10TV and the cover of the Columbus Dispatch. His bio innovations were cited in CNN twice in 2013 and highlighted by "All Sides with Ann Fisher."

Congratulations to Professor Paul Berger in being our 2014 FCC Outstanding Engineering Educator Award Recipient!

## FCC Engineer for a Day (EFAD) Program

EFAD is an annual program developed and organized, during the National Engineers' Week, to engage students (high school seniors and juniors) with interest in Engineering as a profession or career path to discover and learn the real world first-hand knowledge of the role of an Engineer. The overall aim of this program is to influence the students toward making an informed decision of the Engineering Profession. It is hoped that this first-hand real world interaction with the Engineer's role will impact the students' future career choice as an Engineer.

This year's program was held on Wednesday, February 20th and included 56 students from the following 14 participating schools:

- Bishop Watterson High School
- Brookhaven High School
- Centennial High School
- Columbus Africentric Early College
- Columbus Downtown High School
- Columbus School for Girls
- Fort Hayes High School
- Grove City High School
- Heath High School
- Hilliard Darby High School
- New Albany High School
- Teays Valley High School
- Westerville South High School
- Upper Arlington High School

The participating companies in this program were:

- ARCARDIS
- CITY OF COLUMBUS
- EMERSON NETWORK POWER
- FRANKLIN COUNTY ENGINEER'S OFFICE
- GRESHAM, SMITH AND PARTNERS
- HULL & ASSOCIATES INC
- MS CONSULTANTS INC.
- SHIRK & O'DONOVAN CONSULTING ENGINEERS
- STAR CONSULTANTS, INC.
- TERRACON CONSULTANTS, INC.
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## Innovation, In A Roundabout Way

### *Emerald Parkway Improvements Project Wins Outstanding Achievement Award*

By Principal Chuck Unterreiner, PE, PS and Frank Aransky, PE - American Structurepoint, Inc.

The American Structurepoint Ohio Transportation Group and the Cities of Dublin and Columbus, Ohio, have been recognized for receiving a chapter level Outstanding Engineering Achievement award from the Franklin County Chapter of the Ohio Society of Professional Engineers (FCC-OSPE) for the Emerald Parkway Improvements project.

### **Project Description**

The Emerald Parkway Improvements project is a joint venture between the cities of Columbus and Dublin. This \$6 million transportation project reduces traffic congestion, improves safety, and improves pedestrian and bicycle mobility. Approximately 21,000 vehicles navigate through the tight existing corridor every day on their way to and from businesses, schools, and residences, with a significant amount of drivers avoiding the area all together.

During rush hour, traffic backups had previously caused major congestion, requiring police officers hired by the local businesses to direct traffic during peak hours at Glendon Court, Lakehurst Court, and a driveway to the IBM campus (formerly Sterling Commerce). This negatively impacted commercial businesses during these times since potential customers avoided this area during the PM peak hour. Some businesses reported a decline in business as land continued to be developed along Emerald Parkway to the north. These concerned business owners communicated regularly with city leaders as they were seriously considering moving out of town. This threat related directly to the congestion and safety issues at Emerald Parkway. Accessibility to the business was having a negative effect on their bottom line. To alleviate these problems, the two cities decided to study the surrounding project area to determine the needed improvements to address these issues.

Originally, both cities were split on whether they preferred traffic signals or roundabouts. For the improvements to be effective, the intersections of Emerald Parkway at Glendon Court and Lakehurst

Court had to operate together due to their proximity to one another. Further studies and presentations by American Structurepoint proved that roundabouts were the best option for both cities. They performed a traffic operation analysis for the both Emerald and Tuttle, which looked at stop controlled, roundabouts, and traffic signal options. Their recommended alternative was roundabouts at both Glendon and Lakehurst as it provided the best level of service in the design year, although traffic signal met the LOS needs as well. Due to the implementation of access management by means of a raised median, the cities decided that roundabouts were the best solution as they provided the easiest way to maintain access to existing businesses.

In order to increase mobility of the Emerald Parkway corridor, one lane was added in each direction. Roundabouts were constructed at Lakehurst Court and Glendon Court, and an additional northbound lane was added on Britton Parkway. By adding four times the existing storage for southbound traffic turning left onto Tuttle Crossing Boulevard, the roundabouts can operate freely during peak hours, even with their close proximity to the traffic signal. The signal was modified to account for the additional north- and southbound through lanes on Emerald Parkway and Britton Parkway and the increased operational efficiency of the corridor. An 8-foot-wide shared-use path and a 5-foot-wide sidewalk were added, as well as ADA-compliant curb ramps, LED street lighting, a 12-inch water main relocation, a detention pond reconfiguration, and storm sewer improvements with BMP design.

The final roundabout plan addressed all stakeholder concerns due to the fact that traffic was at a steady flow, making it convenient and safe for users. It's also more aesthetically pleasing and has the ability to make it easier for pedestrians and bicyclists to navigate. It was designed to slow vehicle speeds and eliminate head-on and high-speed right-angle collisions. There are less conflict points in roundabouts than in traditional intersections. Besides the safety aspect, it also reduces the air and noise pollution associated with stop and

go traffic. According to American Structurepoint, a roundabout typically decreases emissions by around 16-25% when compared to a traffic signal. They have also been shown to reduce noise by anywhere from 2-6 dB over stop or signal controlled intersections.

The decision to build the roundabout was also driven by economics. The roundabout construction costs were less than constructing signaled intersections when impacts to the businesses were considered. The cities of Dublin and Columbus found that the benefits from the roundabout would also continue to spur economic growth to the north since the project area was no longer a bottleneck to access the interstate. People were able to safely turn into local businesses along the corridor. The improvements also paved the way for future growth, since several vacant buildings were more marketable to potential buyers with easier access to their businesses.

### **In The Public Eye**

The final project was designed with the public in mind, focusing efforts on pedestrian and bicycle mobility as well as mass transit. The new corridor connects to major bike paths in the area, giving local residents the option to bike to work. An 8-foot-wide shared-use path and a 5-foot-wide sidewalk were built as part of the overall safety initiatives of the project. These pedestrian facilities allow office employees on one side of the corridor to safely access restaurants on the other, and provide connectivity for those using mass transit. The shared-use path also provides the last link connecting users to the Ted Kaltenback park facilities. In addition to the shared-use path, the roundabouts also enhance safety for cyclists by slowing drivers and allowing bikers to move with the traffic.

### **Other Recognition**

The project is set to receive national recognition from the American Council of Engineering Companies (ACEC) during the 2014 Engineering Excellence Awards Gala on April 19 in Washington, DC. The project was also an Outstanding Achievement award recipient from ACEC Ohio.



Glendon Court



Lakehurst Court



**FIRST CLASS**

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**2014 CALENDAR**

Apr. 8	5:30 p.m.	FCC Board Meeting @ Korda Nemeth
Apr. 15	Noon	FCC-OSPE Auxiliary Luncheon - Worthington Hills Country Club
Apr. 15	5:00 p.m.	Deadline for May <i>Columbus Engineer</i>
Apr. 17	Noon	Program: "Legislation and the Impact on Professional Engineers"
May 12	5:30 p.m.	FCC Board Meeting @ Korda Nemeth
May 16	5:00 p.m.	Deadline for June <i>Columbus Engineer</i>
May 20	6:30 p.m.	Annual Spring Banquet / Officer Installation Joint with Auxiliary
June (TBA)		Annual Spring Leadership Conference
June (TBA)		FCC Budget Meeting Location to be announced



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