NSPE-OH ™ FRANKLIN COUNTY CHAPTER
OHIO SOCIETY OF PROFESSIONAL ENGINEERS

Columbus Engineer

Franklin County Chapter

A chapter chartered by the Ohio Society of Professional Engineers.

P.O. Box 69
Reynoldsburg, OH 43068-0069

Mar. 2021
Vol. 79 No. 7

President's Message

Dustin Doherty, P.E., CPESC – FCC President

Late last month OSPE Franklin County Chapter, in conjunction with IEEE hosted a virtual membership drive and young engineer's event, which featured a Comedy Networking Night. As part of the event, the Columbus Improve Theater was able to perform a 45 minute improve comedy show. Also, the participants were able to receive a Grub Hub gift certificate. The event was well attended and provided a needed reprieve and laugh during these times! Special thanks to Colleen Konsavage for setting this event up. I hope you were able to attend and look forward to the next event.

As you may be aware, one of the things that we had to change over the last year, was how we provide monthly programs for continuing education credit. We have finally figured out a way and platform to make this work, and we have some great programs schedule for the coming months. We have some great speakers scheduled with topics that include; Ethics, Per- and polyfluoroalkyl substances (PFAS), Stormwater Retrofits at the Nashville Zoo, and Municipal Wastewater Treatment Technologies. These events will be hosted through a Zoom Meeting platform and will be free to OSPE members. Please join us.

Also, I wanted to remind you of some of the resources that are available to OSPE members. One is the OhioEngeer magazine that provides an attractive quarterly publication that offers intriguing, quarterly themes and original, researched articles and leadership columns. The other is the 2021 Advertising and Sponsorhip Kit, where you will find fantastic advertising and sponsorship opportunities -- ways to effectively showcase your company's products and services before Ohio's engineering decision-makers.

Lastly, I would like to thank Howard Jones and Dawn Morrison for faithfully creating these monthly newsletters. They have collected numerous articles, sponsorships and logos, my president's messages, revised calendars, and handled numerous content over the years. They have done a great job of making this newsletter a document that continues to thrive and reach you in time with updates and information about the organization. It would not be possible without their time and commitment. Thank you again!

As always, please let me know if you have any comments, question, suggestions or input for how the Franklin County Chapter can do better in the future.

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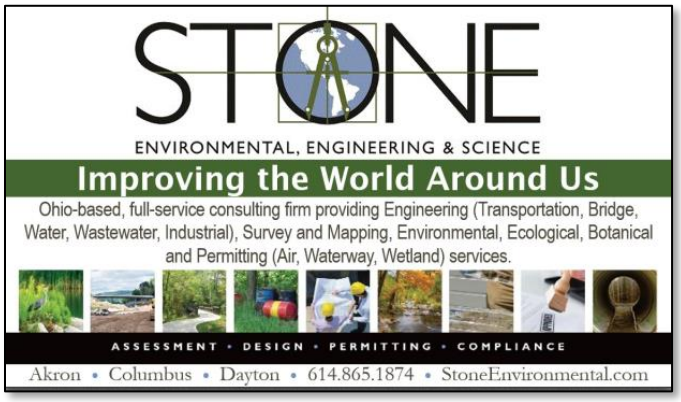


OSPE-FCC
March Virtual Program

Date: Wednesday, March 17, 2021
Location: Zoom Meeting, 11:00am -12:00pm
Registration – Registration closes at 5:00 pm, March 15, 2021
Visit www.fccospe.org. to register on online. Be sure to include your membership number.

After registration is closed and prior to the presentation a Zoom link will be sent to the registrants.

Cost: Cost $10.00 Members of NSPE and members OSPE/FCC are free.

Title: "Engineering Ethics"

Abstract: The engineering profession's emphasis on ethics dates back to the end of the 19th century. In 1946, the National Society of Professional Engineers released it Canons of Ethics for Engineers and Rules of Professional Conduct, which evolved to the current Code of Ethics, adopted in 1964. While these statements of general principles served as a guide, many engineers requested interpretations of how the Code would apply to specific circumstances.

As such engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties. Engineers shall perform services only in areas of their competence. Engineers shall issue public statements only in an objective and truthful matter.

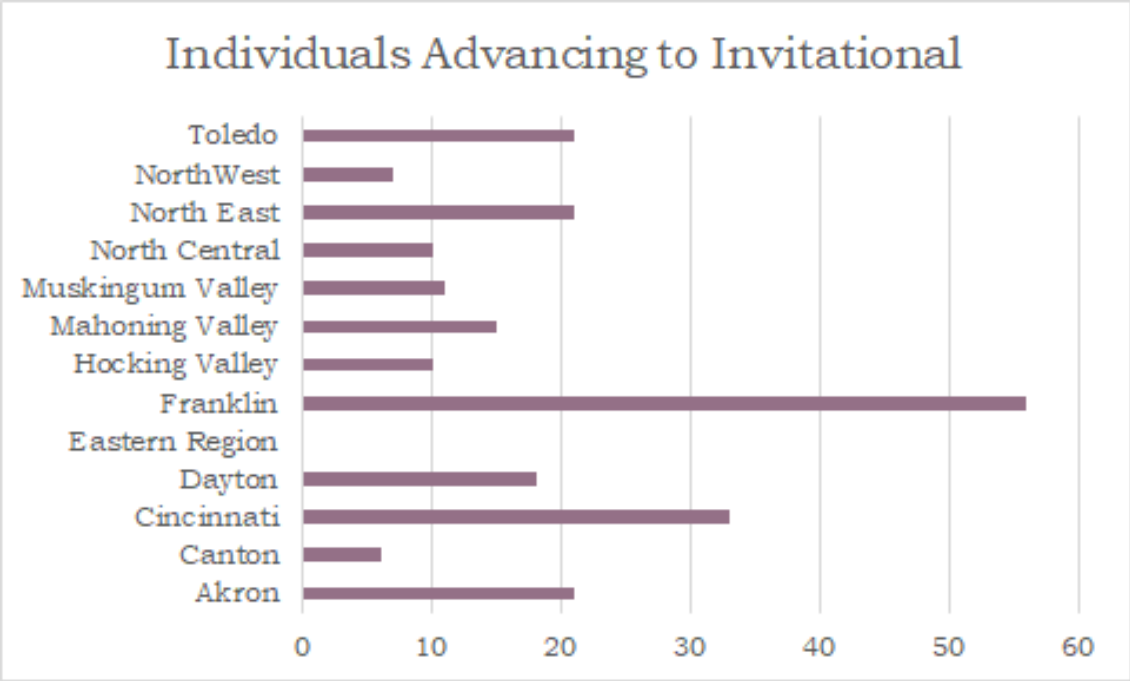
In all aspects of work, engineers must respect obligations towards mankind and take into account the consequences of the performance of their work. This presentation touches on engineering ethics and how engineers shall act in professional matters as faithful agents or trustees; and shall avoid conflicts of interest.

Biography: Mr. Doherty is a seasoned civil engineer with over 15 years of successful experience managing site civil design projects, hydraulic modeling, public infrastructure assessment/ rehabilitation, private commercial site design, institutional utility projects and City Engineer support services. This type of experience provides Mr. Doherty with the knowledge base to provide technically competent and cost-effective solutions for utility infrastructure. As a former municipal engineer for Grove City, Whitehall, Reynoldsburg, and Sunbury, Dustin has extensive experience effectively presenting information in public meetings (council meetings, committee meetings, commission meetings, etc.). He has participated and/or led public outreach efforts for many projects and engages the public frequently to work through any concerns. He supports CEC's engineering efforts for capital improvement projects for various communities. He is an experiences project manager and engineer who is very familiar with the engineering requirements relating to public infrastructure improvements.

A certificate for 1 hour of Professional Development for attending the program will be emailed to you.

2021 Regional MathCounts Chapter Results

The Franklin County Chapter has the largest number of individuals moving to the Chapter Invitational Competition scheduled for Feb 25th. Total Participants in Chapter invitational: 229



School Name	Student Name	Chapter Rank
Columbus Academy (Gahanna, OH)	Changrui Li	1
Blendon Middle School (Westerville, OH)	Mason S Wu	2
Karrer Middle School (Dublin, OH)	Suhas Beeravelli	3
Dublin Grizzell Middle School (Dublin, OH)	Reese Zong	4
Karrer Middle School (Dublin, OH)	Sitan Gao	5
Jones Middle School (Upper Arlington, OH)	Colin M Kennedy	6
Dublin Grizzell Middle School (Dublin, OH)	Audrey Lu	7
Olentangy Orange Middle School (Lewis Center, OH)	Aiden N Tang	8
Hilliard Heritage Middle School (Hilliard, OH)	Rohan Narisetti	9
Olentangy Orange Middle School (Lewis Center, OH)	Devin Zhao	10
Worthingway Middle School (Worthington, OH)	Suvam Konar	11

Olentangy Shanahan Middle School (Lewis Center, OH)	Deepthisri Paruchuri	12
Sampath Homeschool (Dublin, OH)	Tej Sampath	13
Karrer Middle School (Dublin, OH)	Akhil Chodankar	14
Olentangy Shanahan Middle School (Lewis Center, OH)	Sarah Boros	15
Dublin Grizzell Middle School (Dublin, OH)	Harry Liu	16
Dublin Grizzell Middle School (Dublin, OH)	Raghava Deivanaathan	17
Karrer Middle School (Dublin, OH)	Elliot Seok	18
Olentangy Liberty Middle School (Powell, OH)	Tanush Prusty	19
Dublin Grizzell Middle School (Dublin, OH)	akhil medikonda	20
Dublin Sells Middle School (Dublin , OH)	Vincent Li	21
New Albany Middle School (New Albany, OH)	Jaden Gao	22
Olentangy Orange Middle School (Lewis Center, OH)	Clement Chow	23
Ann Simpson Davis Middle School (Dublin, OH)	Carson P Talley	24
Olentangy Hyatts Middle School (Powell, OH)	Aniket Shetty	25
Olentangy Hyatts Middle School (Powell, OH)	Arya S Badri	26
Karrer Middle School (Dublin, OH)	Justin Park	27
Mccord Middle School (Worthington, OH)	Dominic Maxwell	28
Olentangy Shanahan Middle School (Lewis Center, OH)	Arshiya Moolchandani	29
New Albany Middle School (New Albany, OH)	Henry G Li	30
Walnut Springs Middle School (Westerville, OH)	Nathan A Bell	31
Olentangy Shanahan Middle School (Lewis Center, OH)	andrew j langan	32
Dublin Grizzell Middle School (Dublin, OH)	Brenna Li	33
Karrer Middle School (Dublin, OH)	Eric Hong	34
Karrer Middle School (Dublin, OH)	Alison Y Wang	35
Olentangy Hyatts Middle School (Powell, OH)	Aditya Dyta	36
Olentangy Liberty Middle School (Powell, OH)	Aadi B Joshi	37
Karrer Middle School (Dublin, OH)	Pranitha Chillara	38
Olentangy Hyatts Middle School (Powell, OH)	Pranay Boddeda	39
Granville Middle School (Granville, OH)	John V Kirby	40
Blendon Middle School (Westerville, OH)	Peyton Siddell	41
Dublin Sells Middle School (Dublin , OH)	Emmett J Van Buskirk	42
Olentangy Hyatts Middle School (Powell, OH)	Tarun Batchu	43
New Albany Middle School (New Albany, OH)	Rohan K Thung	44
Columbus Academy (Gahanna, OH)	Lingting Yang	45

St. Pius X School (Reynoldsburg, OH)	Alex H Le	74
London Middle School (London, OH)	Garek Logue	78
The Wellington School (Upper Arlington, OH)	Isaac Xiu	93
Olentangy Berkshire Middle School (Galena, OH)	Manobhiram Vegendla	102
Pickerington Ridgeview Junior High School (Pickerington, OH)	David O Fagbolagun	124
Big Walnut Middle School (Sunbury, OH)	Daniel J Ables	130
Bexley Middle School (Bexley, OH)	Ella L Hughes	137
Pickerington Lakeview Junior High School (Pickerington, OH)	Bethel Mulat	167
Saint Timothy School (Columbus, OH)	Alex Blackstone	173
Edison Intermediate Middle School (Columbus, OH)	Stephanie Chute	176
Westfall Middle School (Williamsport, OH)	Ian Camden	225

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Agile 'glider' robot swims without active propulsion system

Engineers from Purdue University have developed a versatile and agile underwater vehicle which can move through water with no propeller or active propulsion system.

Autonomous underwater vehicles like Boaty McBoatface are versatile tools for exploring the oceans, sometimes travelling for weeks or months without returning to the surface to aid research, exploration or defense efforts. However, they can be disruptive to the environment and struggle to travel through confined spaces.

The Purdue University researchers have been exploring an alternative to conventional autonomous submarines: a highly maneuverable, low-cost underwater glider which operates silently and less disruptively. Components and sensors of the glider can be easily swapped out or added according to a range of mission specifications.

"Our goal is persistent operation of mobile robots in challenging environments," said Professor Nina Mahmoudian, a mechanical engineer. "Most underwater robots have limited battery life and must return back after just a few hours. For long-endurance operations, an underwater glider can travel for weeks or months between charges, but could benefit from increased deployment opportunities in high-risk areas."

A glider has no propeller or active propulsion system, instead adjusting its own buoyancy to sink, rise and propel itself forwards. This allows for extremely energy-efficient vehicles, although they are also slow, expensive and not especially maneuverable (particularly in shallow water).

Mahmoudian has addressed many of these drawbacks with the development of Roughie (Research Oriented Underwater Glider for Hands-on Investigative Engineering. Roughie, which has been in development since 2012, is roughly 1.2m long and shaped like a streamlined torpedo with no outward propulsion or control surfaces other than a static rear wing.

When deployed, Roughie pumps water into its ballast tanks to change its buoyancy and provide an initial glide path angle. It shifting its mass forward and backward as a pitch (up-down rotation) control mechanism. It controls roll (rotation around longitudinal axis) with a suite of inner components mounted on a rotating rail. The design is modular – the team experimented with various sensors – making it suitable for a variety of applications.

"This is a totally unique approach. Most underwater gliders can only operate in deep oceans and are not agile for confined spaces," Mahmoudian explained.

- **Continued on page 7**

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Glider – Continued from page 8

"Roughie has a turning radius of only about 10 feet, compared to an approximately 33-foot turn radius of other gliders."

The vehicle is agile enough for testing in the diving well of the university's aquatic centre. By installing a motion capture system of infrared cameras in the water, Mahmoudian and her team tracked the vehicle's movements with millimeter accuracy. They programmed Roughie with a variety of flight patterns, including sawtooth (up and down), circular, and S-shaped patterns; it was able to perform all of these tasks within the confined space of a swimming pool.

Roughie's maneuverability opens up the possibility of exploring otherwise inaccessible parts of the ocean which have been eluded by humans and conventional gliders. In addition to its research applications, it could perform tasks such as detecting shipwrecks and underwater munitions.

"It can operate in shallow seas and coastal areas, which is so important for biology or climate studies, and because it's totally quiet it won't disturb wildlife or disrupt water currents like motorized vehicles do," Mahmoudian added.

(Excerpted from NSPE DAILY DESIGNS, February 25, 2021)

Chapter Area

The Franklin County Chapter has fourteen Counties in its Chapter Area.

Counties in the chapter Area:

Delaware	Marion
Fairfield	Morrow
Franklin	Muskingum
Hocking	Perry
Knox	Pickaway
Licking	Ross
Madison	Union

Franklin County Chapter is one of the most active and largest Chapters in OSPE.

PROUDLY DISPLAY YOU ARE A PROFESSIONAL ENGINEER

Frame your license plate with a black frame and raised white letters. The frames are ideal gift for newly licensed Professional Engineers, or for a spouse, an associate, friend, son or daughter who is a Professional Engineer. This is also a great way to recognize the new Professional Engineer in your organization by presenting them with a Professional Engineer License Plate Frame.

These frames are available through the Franklin County Chapter of the Ohio Society of Professional Engineers, web site: www. fccospe.org/store/. Each frame requires a $5.00 donation plus Shipping and Handling.

NSPE-OH™ FRANKLIN COUNTY CHAPTER
OHIO SOCIETY OF PROFESSIONAL ENGINEERS

2020-2021 CALENDAR

DATE	TIME	DESCRIPTION
Nov. 10	12:00 p.m.	FCC Board Meeting @ CEC, Inc. (Virtual)
Nov. 19	11:30 a.m.	Program: **No Program** (Virtual)
Dec. 5	5:00 p.m.	Deadline for December *Columbus Engineer*
Dec. 8	5:30 p.m.	FCC Board Meeting @ CEC, Inc. (Virtual)
Jan. 11	5:00 p.m.	Deadline for January *Columbus Engineer*
Jan. 12	5:30 p.m.	FCC Board Meeting @ CEC, Inc. (Virtual)
Jan. 21	11:30a.m.	Program: **TBD** (Virtual)
Jan. 30	5:00 p.m.	Deadline for February *Columbus Engineer*
Feb. 5-6	1:00 p.m.	Regional ***MathCounts*** Competition – (Virtual)
Feb. 8	5:00 p.m.	Deadline for March *Columbus Engineer*
Feb. 9	5:30 p.m.	FCC Board Meeting @ CEC, Inc. (Virtual)
Feb. 15–Mar. 1		District Science Day @ CSCC (Virtual)
Feb. 21-27		National Engineers Week (see www.eweek.org)
Feb. 24	8:00 a.m. – 3:00 p.m.	Engineer for a Day Program - CANCELLED
Feb. 25	11:30 a.m.	Program: E-Week Luncheon: "Imagineering Tomorrow" (Virtual – GoToWebinar) Presenters: Joanna Pinkerton, Many Bishop
Feb. 26	6:30 p.m. – 8:00 p.m.	Joint Societies Meeting NSPE-FCC & IEEE Young Professionals
Mar. 9	5:30 p.m.	FCC Board Meeting @ CEC, Inc. (Virtual)
Mar. 17	11:00 a.m. – 12:00 p.m.	Program: Engineering Ethics – Presenter: Dustin Doherty (Virtual)
Mar. 25	7:00 p.m.	Ohio ***MathCounts*** State Competition (Virtual)
Mar. 30	5:00 p.m.	Deadline for April *Columbus Engineer*
Apr. 7		Program: "Overview of Municipal Wastewater Treatment Technologies and Processes" – Presenters: Travis Adams and Matt Fluharty (Virtual)
Apr. 13	5:30 p.m.	FCC Board Meeting @ CEC, Inc. (Virtual)
Apr. 14	5:00 p.m.	Deadline for May *Columbus Engineer*
May 11	5:30 p.m.	FCC Board Meeting @ CEC, Inc. (Virtual)
May 12	12:00 p.m.	Program: PFAS – The Circular Environment (Virtual), Presenter: Ivan Cooper
May 9-10		National ***MathCounts*** Competition – Washington, D.C.
May 20	6:30 p.m.	Chapter Officer Installation/ Awards Dinner
May 24	5:00 p.m.	Deadline for June *Columbus Engineer*
June 8	5:30 p.m.	FCC Board Meeting @ CEC, Inc. (Virtual)
June 16	12:00 p.m.	Program: Nashville Zoo Stormwater Retrofit (Virtual), Presenter: Steve Casey
July TBD	(TBA)	FCC Budget Meeting - Location to be announced

Civil & Environmental Consultants, Inc.
Address: 250 Old Wilson Bridge Road, Suite 250, Worthington, Ohio 43085

WHERE DO I GET MORE INFORMATION?

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OSPE-FCC WEBSITE	www.fccospe.org	
OSPE WEBSITE:	www.ohioengineer.com	
NSPE WEBSITE:	www.nspe.org	
To volunteer to help with ***MATHCOUNTS***:	benjamin_brown68@yahoo.com	(614) 519-8978
To volunteer to help with Science Day:	yogesh.rege@terracon.com	(614) 863-3113
To volunteer to help with OSU Student Chapter:	mccarthy.226@osu.edu	(614) 247-1561
To volunteer to help with Imagine Engineering:	devonseal1@gmail.com	(614) 221-0678
New Members / Membership Application	www.nspe.org or www.ohioengineer.com	(614) 223-1144

Revised 3/2/2021 - DM

NSPE-OH FRANCLIN COUNTY CHAPTER OHIO SOCIETY OF PROFESSIONAL ENGINEERS

2020-2021 OFFICERS, TRUSTEES & COMMITTEE CHAIRS

	Name	Phone # (w) or (h)	Cell Phone #	E-mail Address
President	**Dustin Doherty, PE, CPESC**	614-310-2075 (w)	614-359-9321 (cell)	ddoherty@cecinc.com
Vice President/Pres. Elect	**TBD**			
Chapter Secretary	**Yogesh Rege, PE**	614-328-5209	614-517-7864(cell)	Yogesh.Rege@terracon.com
Treasurer	**Steve Day, PE**	614-876-7525 (w)	614-531-2858 (cell)	lday1@columbus.rr.com
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NEW	**FCC-OSPE Website**			www.fccospe.org
OSPE Executive Director	**Tim Schaffer**	614-223-1144 (w)		exec@ohioengineer.com
OSPE/EFO Staff	**Pam McClure**	614-223-1144 (w-OSPE)		admin@ohioengineer.com
	Holly Ross	614-223-1177 (w-EFO)		pr@ohioengineer.com

VICE-PRESIDENT	TRUSTEE/COMMITTEE	CHAIRPERSON	TELEPHONE	E-MAIL
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			614-517-7864 (cell)	
	Programs/CPD/Activity	**Vacant**		
	Membership	Dustin Doherty, PE, CPESC	614-310-2075 (w)	ddoherty@cecinc.com
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	Young Engineer Trustee	Colleen Konsavage, PE	614-758-3048 (cell)	Colleen.Konsavage@cai-engr.com
	Retired Engineers Trustee	**TBD**		
			614-315-9551 (cell)	
	PEHE Trustee	Tim McCarthy, PE	614-247-1561 (w)	mccarthy.226@osu.edu
			614-670-1175 (cell)	
	OSU - Student Chapter Liason	Tim McCarthy, PE	614-247-1561 (w)	mccarthy.226@osu.edu
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S. Rao Chitikela, PE	Vice-President	S. Rao Chitikela, PE	412-310-9452 (cell)	srao.chitikela@gmail.com
	Science Day (District)	Yogesh Rege, PE	614-328-5137 (w)	yogesh.rege@terracon.com
			304-951-7874 (cell)	
	Scholarship	Joe Sullivan, PE	614-486-4383 (w)	joe.sullivan@stantec.com
			614-561-5447 (cell)	
	Columbus Engineer - Editor	Howard Jones, PE	614-209-3289 (h)	hrjones63@yahoo.com
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	Engineers Week	CR Weaver, PE	614-645-7100 (w)	CRWeaver@columbus.gov
			614-946-2961 (h)	
	Engineer For A Day	Charles Ohrstedt, PE	614-937-1512 (cell)	mohrstedt@sbcglobal.net
	PEG Trustee	Ron Trivisonno, PE	614-328-5137 (w)	ronald.trivisonno@terracon.com
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Vacant	Vice-President	**Vacant**		
	MATHCOUNTS Chair	Ben Brown, PE	614-818-4900 (w)	ben.brown@ibigroup.com
			614-519-8978 (cell)	
	Awards/Citations	Tina Sutermeister, PE	740-964-0828 (h)	tlsuterm@embargmail.com
			614-537-7660 (cell)	
	Legislative	Steve Day, PE	614-876-7525 (w)	lday1@columbus.rr.com
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	PEI Trustee	Richard Smelker, PE	614-933-2236 (w)	rdsmelker@aep.com
	EFO Liaison	Steve Day, PE	614-876-7525 (w)	lday1@columbus.rr.com
			614-531-2858 (cell)	
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	Imagine Engineering Contest	Devon Seal, PE	614-208-6986 (cell)	devonseal1@gmail.com
	Auxiliary Trustee	Barbara Fuller	614-880-9221 (h)	bfuller@columbus.rr.com
	OSPE Director	Tina Sutermeister, PE	740-964-0828 (h)	tlsuterm@embargmail.com
			614-537-7660 (cell)	
	Constitution & By-Laws	Devon Seal, PE	614-208-6986 (cell)	devonseal1@gmail.com
	PEPP Trustee	Greg Nortz, PE	614-790-0029 (cell)	gregnortz@otiscoengineering.com
	PEPP Trustee	Nathan Abele, PE	614-793-2226 (w)	Nabele@smeinc.com
			614-746-7243 (cell)	
	PEC Trustee	Ken Goodson, PE	614-443-1178 (w)	kengoodson@hotmail.com

Revised 2/24/2021 dmm

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