



# Valley Engineer Newsletter

DECEMBER, 2017 - JANUARY, 2018

## UPCOMING PROGRAMS

- February 10, 2018 (Snow date February 11, 2018) - MATHCOUNTS®, Nitschmann Middle School, Bethlehem.
- February 23, 2018 - Engineers Week Banquet – ArtsQuest at SteelStacks
- March – Atlas Cement Museum Tour
- Fazlur Khan Distinguished Lecture Series (See Page 3)



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**LEHIGH VALLEY CHAPTER  
(ORGANIZED 1935)**

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## PennDOT District 5-0

The speaker at our annual Holiday Party was Ronald J. Young Jr., M.P.A. Ron is the District Press Officer for the Pennsylvania Department of Transportation, District 5-0. As its name implies, PennDOT is responsible for all State roads and bridges in Pennsylvania. The district encompasses Lehigh, Northampton, Monroe, Berks, Schuylkill, and Carbon counties.



Ronald J. Young Jr., M.P.A. and Alex Dezubay LVPSPE  
Vice President

Little in our daily lives affect us as much as our use of public roads. Whether driving to work or merely driving for pleasure, roads and traffic problems significantly add to our level of frustrations. Studies have shown that stress levels of drivers while driving on certain roads exceed the stress levels of astronauts sitting on the launch pad! It is this that Ronald Young and PennDOT are trying to alleviate.

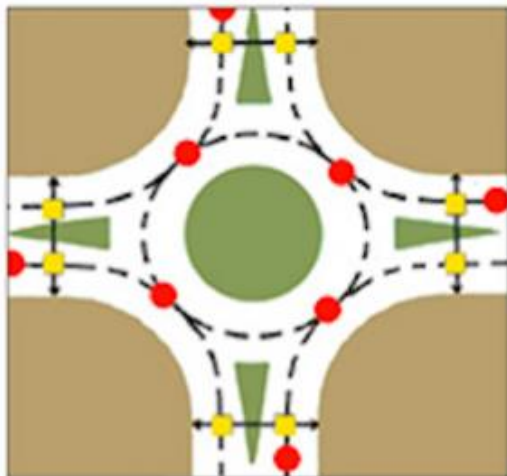
Continued on page 2

Ron presented various ongoing projects within and outside the Lehigh Valley.

In the Lehigh Valley the US 22 – Fullerton Interchange is being rebuilt, and Route 22 between 15th Street in Allentown and Airport Road will be expanded to six lanes. The latter has been under discussion in the area for fifty years. The interchange is nearing completion, and the six-lane bridge over the Lehigh River is around 50% finished. The South lanes are completed and are presently in use as the old bridge is being demolished. The entire US 22 – Fullerton Interchange project should be complete by November 2020, and the widening of US 22 project is anticipated to begin in 2023.

An innovation (for PennDOT) is roundabouts, a safe alternative to normal intersections or the traffic circles for which New Jersey is famous. Roundabouts are safer because there is less crossing of traffic lanes than a normal street intersection.

## Roundabout



● 8 Vehicle conflicts

■ 8 Pedestrian conflicts

Roundabout traffic flow (Diagram thanks to FHWA)

The first one in this area is being built at the US 222-PA 662 intersection in Berks County. As shown in the chart above, a roundabout signifi-

cantly reduces the number of possible collision points between vehicles, and pedestrians.

Besides being safer, Ron gave another benefit to roundabouts. A tractor trailer can more easily make a U-turn!

Bridge safety is near the top of PennDOT’s priority list. Ron mentioned a couple of bridges in the area that are due for replacement. But the star of this portion of the presentation was Rapid Bridge Replacement! This is a system whereby a bridge is taken out of service for only a few days instead of months, or years. He showed a video of the replacement of the US 30 Bridge over Bessemer Avenue in Allegheny County. It was demolished and replaced in just 57 hours using precast modules that were trucked in. The video can be viewed at:

<https://www.youtube.com/watch?v=0VMMq0fNWjg>

A little closer to home, the Pennsylvania Turnpike Bridge over Crackersport Road in South Whitehall Township was replaced over a long weekend. The replacement bridge sections were built alongside the existing one. In 53 hours (two hours ahead of schedule) the old bridge was demolished, and a new bridge slid in place. A video of the work can be viewed at:

<https://vimeo.com/238199304?ref=tw-v-share>



The new bridge on the Northeast Extension of the Pennsylvania Turnpike was constructed next to the bridge that was replaced over Crackersport Road in Lehigh County. (Pennsylvania Turnpike Commission/CONTRIBUTED PHOTO)

Continued on page 3

Ron touched on the reason why this area has so many warehouses and trucking terminals. Superstorm Sandy in 2012 flooded many of the warehousing facilities that were located close to the shore. Products worth billions were destroyed, so storage and trucking operators looked inland to build their facilities. The Lehigh Valley obviously meets all their criteria.

The automobile and automobile travel are ingrained in our lives, and our culture. We thank Ron for informing us as to the role PennDOT has and how it directly affects us.

**2018 Fazlur Khan Distinguished Lecture Series** – Lectures will be held in Lehigh University's Whitaker Lab 303, 5 E. Packer Avenue, Bethlehem, PA.

Friday, February, 23<sup>rd</sup> at 4:30 pm

Surendra P. Shah

"Sustainability in Concrete Construction Based on Nanotechnology"

Friday, March 23<sup>th</sup> at 4:30 pm

Robert Sinn

"From Bilbao to Jeddah: An Engineer's Journey"

Friday, April 13<sup>th</sup> at 4:30 pm

Yozo Fujino

"Lessons Learned from 30 Years of Experience in Dynamics, Monitoring and Control of Bridges"

**Pratt Industries**

Alfred Gruenke, PE

A couple of weeks ago I received a package from Golf Galaxy. It arrived in a cardboard box maybe 6" x 6" x 8". Nothing special, an ordinary box used to ship millions of items daily, more so since the advent of cyber stores and on-line shopping.

I have to admit that I never thought much about the source of cardboard, especially corrugated cardboard. Yet, corrugated cardboard is an integral part of modern shipping and storage.

A sparse group of Lehigh Valley Chapter members and guests toured Pratt Industries on a cloudy Thursday afternoon in mid-November. Pratt Industries, located in an industrial park about a half mile south of Rt. 100 in Lower Macungie Township, is the fifth largest corrugated packaging company in the country. This facility encompasses 350,000 sq. ft. and has 180

employees. The facility ships greater than 500 tons of corrugated cardboard daily. Year over year growth is very strong, and there are firm plans to expand this facility to employ over 250 employees.

General Manager Patrick Ranson introduced our tour guides, Process Improvement Manager Marc Hordatt and Quality Manager Anthony Elghossain. First, we received a lesson in corrugated cardboard technology. Corrugated cardboard is not the stuff of cereal boxes. Corrugated cardboard consists of three layers of paper, two linerboard sheets, with a corrugated medium sheet in between. The three lines of paper are glued together. It is the corrugated medium that gives it strength.

Grades of corrugated cardboard are designated by three numbers, such as 35-23-35. The number is the weight in pounds of 1,000 sq. ft. of paper. Naturally, higher weights produce a stronger product.

After the initial introduction, the "heart" of Pratt Industries corrugated cardboard was explained to us. The paper comes from a paper mill on Staten Island, New York, which uses 100% recycled paper from the metropolitan New York area. Any kind of paper can be recycled, from newspapers to cardboard. This plant processes 1,000 tons of recycled paper every day.



Process Improvement Manager Marc Hordatt

Continued on page 4





Quality Manager Anthony Elghossain



The corrugating machine



58" diameter rolls of recycled paper received from Staten Island



Ready for shipment

The paper rolls are mounted on a machine that looks very similar to a high-speed printing press. In fact, Pratt Industries machinery can also print! At this machine, attendants load the 58" diameter rolls of paper which is then processed with heat, moisture and glue. Once formed and bonded, the machine cuts the corrugated cardboard into appropriate sizes so a stack can be processed or shipped.

This is a modern, high tech facility. Two central "robot" platforms (cars) operate on tracks to move the heavy corrugated cardboard from work station to work station. With all the glue and ink in use, one would expect an accompanying odor. There was none.

Continued on page 16

## **SCHOLARSHIP SPONSORS**

A great way to be involved in the LVPSPE Chapter is to contribute to the **LVPSPE SCHOLARSHIP FUND**. Please Contact the Valley Engineer Editor to sponsor scholarships for the remainder of the calendar year.

If you would like to contribute in any amount – please send your TAX DEDUCTIBLE donation to PA ENGINEERING FUND. Donations should be mailed to:

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Please note “LVPSPE Scholarship Fund” on the comment line.

Or, you may also contribute via the LVPSPE website <http://www.lvpspe.org/Donations>.

Scholarship application is at <http://www.lvpspe.org/Scholarships>. Any questions regarding scholarships can be directed to

Alex Dezubay, PE  
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The monthly Board of Direction meetings are 6:00 PM on the second (2<sup>nd</sup>) Monday of each month. Open to all members; they are held at the office of Liberty Property Trust, 74 W. Broad Street, Suite 240, Bethlehem, PA.

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Similarly, even with all that paper, cardboard, clippings, and debris, the air was clean and fresh. Numerous dust collectors keep the dust under control. A pleasant place to work.



Dust collectors

We thank Patrick Ranson, Marc Hordatt, and Anthony Elghossain for an interesting and informative tour of an industry we knew had to exist, but really didn't comprehend.

-----  
 Time flies like an arrow.  
 Fruit flies like a banana.  
 August Poliske

-----  
**The Essence of a Leader**

Frank Walsh, PE

Let's talk about leading for a moment. By definition leading involves moving away from where

you are to someplace else. In spite of all the rest of the garnish we put on it, leadership at its essence is about creating change, and showing the way from the known to the unknown.

This is what makes leadership a fundamentally different skill than management, supervision, or any of the numerous other activities that are so often erroneously lumped under the same category. True, the skills of managing can serve a leader well, and perhaps even improve her effectiveness, but I would argue that they are not strictly necessary. Did Nelson Mandela change the course of his nation through management? I think not.

So, given this prime directive, to show the way from the known to the unknown, what are the essential skills of a leader?

- Vision – A leader cannot show the way if she cannot “see”. Vision doesn't require that the leader can see all the way to the end of the journey, but she has to know the general direction. She also has to be able to recognize obstacles and see the passages over, under, around or through.
- Conviction – I considered passion, courage or other more emotional words here, but the essence is that the leader needs to believe that the unknown is a worthy objective. This belief needs to be authentic (generally demonstrated through passion) because anything less will be apparent to the followers.
- Empathy – Compassion is the emotional response, empathy is the skill. Change is an emotional process and a leader must understand how those emotions will manifest themselves in the process. Virtually everything we need to know about listening, communicating, motivating, team building, conflict resolution and myriad other issues comes down to empathy.
- Authenticity – Self-awareness is the internalization of empathy. Understand why you behave as you do, and unlock the secret to being authentic. Authenticity is the foundation of trust, and trust is the only real commodity on which a leader has to trade.

Continued on page 17

Does having these essential skills make you a good leader? No, but their absence virtually assures that you will not be. Start at the bottom of the list and commit to develop a deeper understanding of yourself. Deep understanding will enable transformation, and transformation will reveal authenticity. That will make the first three skills almost automatic.

There comes a time in your life, when you walk away from all the drama and people who create it. You surround yourself with people who make you laugh. Forget the bad, and focus on the good. Love the people who treat you right, pray for the ones who don't. Life is too short to be anything but happy. Falling down is a part of life, getting up is living.  
- Jose N. Harris

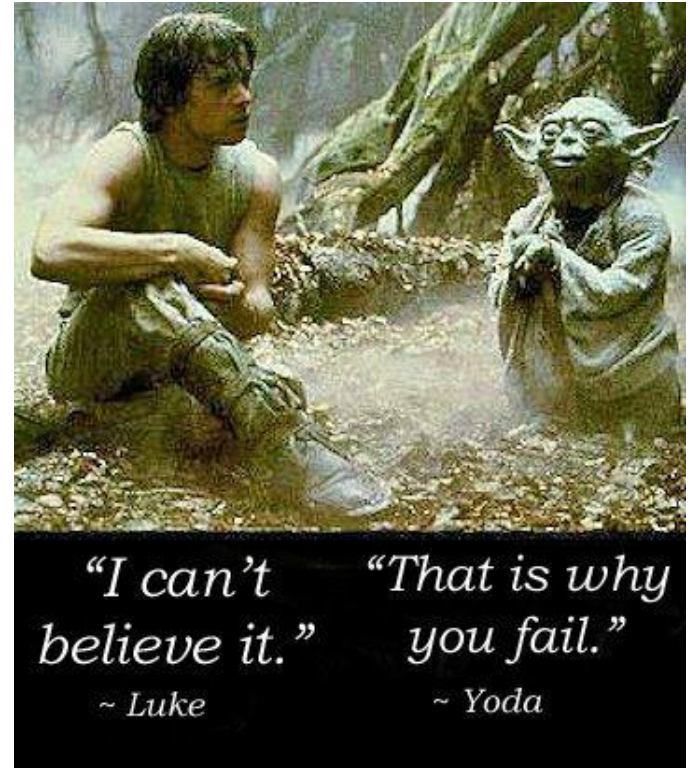
**Event Announcement**

Courtesy of Angelika B. Forndran

Lehigh County Authority is holding its annual HYDROMANIA event Thursday, May 17, 2018, on the Cedar Crest College Campus.

Everyone is invited to volunteer either morning, afternoon or the entire day. You will be interacting with hundreds of 4<sup>th</sup> and 5<sup>th</sup> grade students and introducing them to engineering and science exhibits and activities related to the water cycle we all depend on from source to discharge. The activities are well organized, so you will understand your role and involvement very quickly...plus get a box lunch and T-shirt!

Contact [SusanSampson@lehighcountyauthority.org](mailto:SusanSampson@lehighcountyauthority.org) for a volunteer registration form "



You can get a lot farther with a kind word and a gun than you can with a kind word alone.  
- Al Capone.

Rest is not idleness, and to lie sometimes on the grass under trees on a summer's day, listening to the murmur of the water, or watching the clouds float across the sky, is by no means a waste of time.  
- John Lubbock, *The Use of Life*

It's not who you are that holds you back. It's who you think you are not. Your mind stands between the "I cannot do that" and the "I can do anything!" Which one will you pick?  
- Millie Mestrl

Of all escape mechanisms, death is the most efficient."  
-HL Mencken

Let me never fall into the vulgar mistake of dreaming that I am persecuted whenever I am contradicted.  
-Ralph Waldo Emerson





**Lehigh Valley Chapter**  
**Pennsylvania Society of Professional Engineers**  
*Lehigh, Northampton, Monroe and Carbon Counties*



Minutes for the January 15, 2018 Board of Directors Meeting

6:00 pm at the office of Liberty Property Trust, 74 West Broad Street, Suite 240, Bethlehem, PA 18018

Attendees: Brian Kutz, Kevin Campbell, Ray Szczucki, Al Dezubay, Angelika Forndran, Mary Rooney, Frank Walsh, and Mike Basta

- A. Call to Order – Brian Kutz called the meeting to order at 6:04 pm.
- Introduced Bob Peruzzi. He’s a member of National Academy of Forensic Engineers. They asked him to be a liaison between their organization and PSPE.
- B. Programs – Al Dezubay
- January - Virtual Tour of Africa -- Johann Szautner’s Safari Guide on January 24<sup>th</sup> at 6:00 PM at Kingfish
  - February - Engineers Week Banquet – ArtsQuest on Friday, February 23<sup>rd</sup>
  - Brian to get information to Tracy Torres (sent by e-mail during this meeting)
    - i. February 9<sup>th</sup> cutoff for registrations
    - ii. One EOY nomination received
    - iii. Need YEOY nominations
    - iv. LVPSPE will have a Gold sponsor table (again this year)
    - v. Engineer week registrations will be through LVPSPE website (again this year)
  - March – Al Gruenke made connection with Atlas Cement. Al Dezubay to follow-up.
  - April – United Labs (UP) Dave Edwards contacted with date TBD.
  - May – Banquet tentatively scheduled for May 8<sup>th</sup>. All agreed to change policy to invite two representatives to banquet from any firm contributing \$1,000 or more.
- C. Newsletter – Brian Kutz
- Newsletter ready, awaiting President’s message to finalize
- D. Fundraising – Al Gruenke sent fundraising spreadsheet)
- Received a total of \$9,235 so far with \$13,465 pledged.
- E. Treasurer – Ray Szczucki
- Checking balance: \$4,176.28
  - Savings balance: \$16,709.75
  - Harry Garman to have audit finished later.
  - PayPal transactions are still through Peter Staffeld; consideration should be given to making PayPal part of the treasurer's office.
  - Ray would like to have budget for next fiscal year.
  - Account signatures need to be made to add Al Dezubay to the Wells Fargo account.

## F. Scholarships – Al Dezubay

- Received two scholarship applications already.
- Brian has again asked Debra Heffelfinger at Borton-Lawson to provide essential administrative tasks; he received a positive response.
- Al Dezubay sent Request for Applications to Debra for distribution to principals and guidance counselors.
- Al Dezubay, Angelika Forndran, Brian Kutz and Chris Williams to review applications.

## G. MATHCOUNTS – Kevin Campbell

- February 10<sup>th</sup>
- February 9<sup>th</sup> at 5:00 PM for set-up and preparation
- Nitschmann Middle School
- Chris Williams - Volunteer Coordinator

## H. State Director – Kevin Campbell

- Meeting January 20<sup>th</sup>. Kevin will report upon return.

## I. New business – Mary Rooney

- Dream Big movie is again being show this year
  - i. February 20<sup>th</sup> - 23<sup>rd</sup>. Two shows per day.
  - ii. They are looking for engineering volunteers for Q&A at the shows.
  - iii. Contact Steve Ressler at [sjressler@gmail.com](mailto:sjressler@gmail.com)

## J. Past President – Al Gruenke (not present)

## K. Mike Basta (not present)

## L. Adjournment at 7:22.