*Setting the Standard for Automation*

Wilmington Delaware Section

# The Sensor

## September 2016

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## Upcoming Events

| | |
|---|---|
| Sep 27 | Meeting: Cybersecurity |
| Sep 30 | Deadline: Vote for 2017 ISA Society Officers at isa.org |
| Oct 25 | Meeting: Manufacturing Execution Systems |
| Jan 10 | Joint Meeting with Delaware |

Section Meeting:
**Cybersecurity**

**Tuesday, September 27, 2016**
**5:30 PM**
**Applied Control Engineering, Newark, DE**
**(Directions at www.ace-net.com)**

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www.wilmingtonisa.org

## Join us for our next Wilmington ISA Section Meeting

**Tuesday, September 27th (5:30 PM)**

**From Automation to Industrial Control System (ICS) Cybersecurity**
You Cannot Secure What You Cannot See

presented by

**Gerry Noble**
Sales Director, PAS

&

**Kyle Pearce**
Sr. Technical Consultant, PAS

@

**Applied Control Engineering**
700 Creek View Road, Newark, DE 19711-8544

# President's Message

## Quantifying & Promoting Success

By Jeff Arbogast

I write this message from the ISA Fall Leaders Meeting in Newport Beach, California. This has been an excellent opportunity to engage with the leaders of ISA and to further develop leadership skills.

Jim Keaveney, 2016 ISA Society President, is a member of the Lehigh Valley section and is a strong supporter of the Wilmington ISA at Emerson Process Management. In his remarks today, Jim mentioned the challenge of quantifying the benefit of automation and automation projects. This made me think my own work and of a similar organization that I have recently joined: INFORMS, which has a particular focus on Operations Research (OR) / optimization and analytics.

As many of you know, I received one of the last (if not the last) PhDs associated with regulatory process control. Our research at the University of Connecticut was self-funded through the controller tuning (and training) software that we produced (now an independent company, Control Station: www.controlstation.com). As my career in Applied Mathematics R&D at Air Liquide has evolved, my focus has shifted towards the optimization of the routes our trucks take to deliver liquid oxygen and nitrogen (among other products) to our customers. I find that my background in chemical process control gives me a useful perspective on this.

Like Jim, I have found that it is often difficult to quantify and effectively communicate the full benefit and value of projects (both process control and distribution, alike). I have also found that it is often difficult for others to fully appreciate the differentiation (often a bit nuanced) and challenges faced in technical projects. As my career has varied, I have found that these challenges are not unique to industrial automation.

In April 2016, I presented at the INFORMS Business Analytics conference (citing a paper first presented at ISA's Automation Week 2013). At this conference, I had the opportunity to be in the audience as UPS presented their innovative On-Road Integrated Optimization and Navigation (ORION) project to the Edelman Award committee (video link to 45 min presentation).

**Reminder: Vote for 2017 ISA Society Officers at www.isa.org by Sep 30th**

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INFORMS presents the **Franz Edelman Award** to honor **outstanding projects** in **operations research**, management science and **advanced analytics** in practice. Finalist projects have improved organizational efficiency, increased profits, brought better products to consumers, helped foster peace negotiations, and saved lives, **for over $239 billion in cumulative benefit**. Obviously, this is an impressive figure that exemplifies the value of OR and advanced analytics.

The ORION project has results in significant annual savings for UPS:

- 100 million less miles driven
- 10 million less gallons of fuel
- 100,000 less metric tons of $CO_2$ emitted
- $300-$400 million less cost

The UPS ORION project is arguably the most famous operations research project in history. I first learned of the project while watching an episode of NOVA on PBS, entitled "Making Stuff Faster," which included a segment on Operations Research. Like many others, I was able to use this show, which explained the project, its challenges, and its benefits in a down-to-earth, relatable fashion, to explain my work to my friends and family.

Yet, the UPS ORION project was not always seen as a success. In its early years, they struggled to produce a solution that would be acceptable to implement in the real-world considering the many unwritten rules (much more extensive and nuanced than "no left turns"). However, once they achieved initial success on a pilot in the lab, the resistance grew as their project was now a real threat to the ways things had always been done. This sounds very familiar to many of the projects that I have been involved in, both within industrial automation and distribution optimization.

Considering that, I encourage you to take 10 minutes of your time to watch this TED talk on the ORION project by Jack Levis of UPS: "The Hardest Step in Innovation? Looking Foolish in Front of the Crowd". He leads off the presentation with a quote by Arthur Schopenhauer: *"All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident."* I think that we have all experienced this - and not only in our technical work. In fact, this could also considered as ISA (and the Wilmington ISA) continues to evolve as needed.

In short, it would be beneficial to the industrial automation community to find a similar way to honor and exemplify impactful projects. What can we do to help others (including the public) to better understand the problems we face, the challenges we overcome, and the differentiation of our work? How do we get industrial automation to be profiled in popular magazines and television shows?

# Wilmington ISA @ ISA Fall Leaders Meeting

By Jeff Arbogast

Wilmington ISA member Danaca Jordan of Eastman Chemical (Chestertown, MD) is completing 1 year of service to the ISA as an appointed, at-large member of the international society's Executive Board. Danaca became active in ISA through her involvement with the ISA Mentor Program, led by Greg McMillan, in 2011. Danaca has continued her involvement with the ISA Publications department, with a particular focus on providing compelling, useful content compatible with today's digital lifestyle - particularly for millennials like her.

At the recent ISA Fall Leaders Meeting, Danaca presented "New Kids on the I/O Block: Transferring Knowledge to Millennials". This was originally co-presented with Jim Cahill of Emerson Process Management. I found the talk very interesting, especially considering that I do not find the difference in learning/research approaches to be as different across generations in my role within an R&D group. As a PhD student, it was my job to become the expert on my research topic by search among all of the *reputable, primary* references (e.g., not Wikipedia) to properly cite my work. This has evolved from a physical search (in the library) to an electronic search. But, the fundamentals are the same. In a way, Danaca described that millennials generally learn in a way more consistent with this approach that that I applied in graduate school (vs. relying on experts as a source of knowledge). However, there is often difficulty in distinguishing reputable sources. This is an opportunity for ISA to be that reputable source.

## Reminder:
**Vote for**
**2017 ISA Society Officers at www.isa.org by Sep 30th**


# Reminder: 2017 ISA Society Officer Elections (by Sep 30)

Please remember to vote for 2017 ISA Society Officers by the upcoming deadline of Friday, September 30th. To vote, please log into www.isa.org and click on the "Vote Now" option. Voting will take only a few minutes. There is a strong slate of candidates, including several for the office of Society President-Elect. None are members of sections in the Delaware Valley, but I've come to be familiar with each through participation in the ISA Fall Leaders Meetings over the past several years.

For those of you who are not yet ISA members, I encourage you to join. For your $120 membership, you receive many benefits, including (but not limited to) the following: online access to technical papers, presentations, recorded webinars, and our scientific journal, *ISA Transactions*; a subscription to our magazine, *InTech*; online reading access to ISA standards documents; a $120 credit toward the purchase and download of an ISA standards document; discounts on ISA publications and symposia.

I encourage you to involve yourself in the various activities of the Wilmington ISA. There are many ways to be an active member: participating in section meetings; encouraging others to join ISA and participate in our activities; mentoring others in the automation profession; and participating in section committees.

Please contact me (jeffrey.arbogast@airliquide.com) if you are interested in becoming more involved or if you have any questions, suggestions, concerns, or comments about the Wilmington ISA and its activities. (**Interested? – please contact me or any of our leadership.**)

## Encourage colleagues to join ISA!

Benefits include:

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## Upcoming ISA Training In the Delaware Valley

**17-21 October 2016 in King of Prussia, PA**
Advanced Industrial Networking and Cybersecurity

**1-2 November 2016 in King of Prussia, PA**
Advanced Safety Integrity Level (SIL) Selection

**3-4 November 2016 in King of Prussia, PA**
Advanced Design and SIL Verification

**14-18 November 2016 in King of Prussia, PA**
Safety Instrumented Sys.: Design, Analysis, & Verification

**28 Nov - 2 Dec 2016 in King of Prussia, PA**
Technician Training Boot Camp

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