

February 8, 2011
 DVS Annual CEO Lecture
 at the Union League of Philadelphia.

Join us on February 8, 2011 at the Union League of Philadelphia to hear Terri Kelly, President and CEO of W.L. Gore & Associates, a multi-billion dollar enterprise that employs more than 8500 associates in 45 plants around the world. Gore specializes in fluoropolymer-based materials that are utilized in a wide array of high-value products, including GORE-TEX® fabric, medical devices, filtration and venting products and many other advanced technology solutions. Gore is as well known for its unique management philosophy and culture, as for its multitude of unique products.

Kelly joined Gore as a process engineer in 1983 after graduating summa cum laude from the University of Delaware with a bachelor's degree in mechanical engineering. In her early years with the company, she gained experience as a product specialist with the military fabrics business - a business she eventually led.

Kelly's leadership abilities have driven her success in a company known for its non-hierarchical "lattice" structure. At Gore, associates become leaders based on their ability to gain the respect of their peers and to attract followers. Terri earned the title of president and CEO in 2005 - one of the few titles within the enterprise - following a peer-driven selection process.



*Terri Kelly
 President and CEO
 W.L. Gore & Associates, Inc.*

Date: Tuesday February 8, 2011

Time: 6:00 PM Reception
 7:00 PM Dinner
 8:00 PM Speaker

Cost: \$65.00 per DVS Member
 \$70.00 per nonmember or guest
 \$30.00 per student
 \$480.00 per table of eight (\$5.00 or \$10.00 discount per person)
 Cash Bar

Location: Union League
 140 S. Broad Street
 Philadelphia, PA 19102

Reservation Deadline:
 Please confirm your attendance no later than Friday February 4, 2011.

<http://www.aiche-philadelphia.org/events/events2011/0208kelly.htm>

For More Info go to Page 5

Chairman's Chat
 Delivering Value to Our Members
 By Sue Schultz

As we come to the waning days of 2010, it is a great time to reflect on all that our section has accomplished and to look with enthusiasm at the year to come.

We started off the second half of 2010 with a tour of the new Tastykake facility in September, followed by the Resume Writing and Interview Workshop for students in early October. Mid-October brought the ever-popular Oktoberfest at Victory Brewing, which is just a great way to network while learning about making beer. In late October, we sponsored the Process Safety class, followed by the Safety Integrity class in early December. Both of these classes are useful for attaining continuing education credits.

Looking ahead at 2011, we have a full slate of events planned and hopefully something will pique your interest. Gee, where to start? On January 14th, we will cook meals for families living at the Ronald McDonald house in Philadelphia. For those of you unfamiliar with this organization, they provide housing for families of ill children receiving treatment at local hospitals. As this is a small kitchen, the numbers are restricted but we hope you consider coming out and helping us "give back" to this worthwhile organization. On January 26th, the AstraZeneca site in Newark, Delaware will host a tour for students only (sorry!) to present the option of a career in pharmaceutical manufacturing and packaging. On February 8th, we have our annual flagship event, the CEO Lecture. This year will again be one to remember as we have the honor of presenting Terri

(Continued on page 6)

Using Advanced Control Concepts to Tame a Difficult Hot Water Sanitization Operation

By Eric Sipe - CDI Life Sciences - Project Engineer/Project Manager

Who knew that we would ever have to dig so deep into the process control engineer's bag of tricks to control a "simple" temperature control scheme? The temperature control scheme on the surface was very simple. Control the temperature coming out of a heat exchanger to the set point. The problem is that there were actually three different and unique heating operations that made use of this single temperature control loop. Two of these heating operations were heat-up and holds for hot water sanitization of equipment and piping. One operation was maintaining the feedwater temperature for a reverse osmosis unit.

PID controllers by their very nature are intended to modulate a final control element such as a control valve in order to compensate for minor deviations in the incoming conditions for a single stream. PID controllers, by themselves, aren't usually expected to perform the heat-up of a system from ambient temperature to nearly boiling temperature starting from zero percent valve opening without encountering a major overshoot of the target temperature. In this case we had a target temperature of 184 deg. F. We had to limit the overshoot to 199 deg F in order to protect the downstream RO membranes and CDI modules and we had a single PID temperature control loop to keep us under this alarm point for two very difficult heat-up operations. Various P,I, & D parameters were tried to get this single temperature control loop to perform the necessary heating operations but in the end this proved to be futile. Another complicating factor was the fact that the original programmer had programmed in some additional feed forward temperature control based on an alternate temperature probe. This also proved to be a major problem because the feed forward adjustment routinely drove the temperature control valve in the wrong direction from the desired temperature because of a significant lag that existed in the system. This problem led to unacceptable heat up times for the two heat-up operations.

In order to solve these problems we had to use many of the tricks available in the modern process control engineer's bag of tricks. First, we performed a loop assessment to determine if the heat-up could be controlled manually. We were able to come up with scenarios for manually holding the temperature control valve output for the steam to the heater for a fixed period of time to get us to the point where we could release the PID controller to automatic control. These hold times were then made to be performed automatically by the PLC, but they weren't completely successful in eliminating the over-temperature alarms. Next we attempted to tame this difficult temperature control problem by creating high and low clamps on the control valve output. Again, this change provided some benefits but didn't completely eliminate the over-temperature alarms. At this point we were very frustrated but I knew that we had one more tool in our process control bag of tricks. Upstream of the modulating control valve of the temperature control loop was an automated block valve that closed already when the 200 deg. F over-temperature alarm was tripped. It was my intention to use this automated block valve to eliminate the over-temperature alarms once and for all so I had our automation engineer program the PLC to close this valve at 195 deg. F and hold it closed for a fixed period of time. This interlock was soon revised down to 192 deg. F and the time interval was adjusted as well. But, even with the execution of this interlock we were still getting over-temperature alarms because of the system dynamics. Because the steam source was left off too long at the 192 deg. F set point and the time duration was too long, the system was thrown into an unacceptable oscillation that led to alarms. In the end, we ended up setting the set steam valve closure interlock at 186 deg. F and reopened the steam valve based on temperature rather than time at 184 deg. F. This final change brought us to the point where we were no longer getting over-temperature alarms and the chance to move our purified water generation system from commissioning on to operational qualification.

This exercise proved that there are many tools available to the modern process control engineer. The modern PLC has vast capabilities and these capabilities can be used to solve the most difficult process control problem; possibly without adding any new instruments or other hardware. So, the next time you run into a difficult process control scenario, look into your tool bag to see what your PLC or DCS can do to help you come up with a successful control strategy.



CHEMICAL ENGINEERING
Evening and online Master's
Degree Courses
Spring 2011 course offering

Introduction to Biomedical Materials

Monday, 6:30 – 9 PM

J Vermengo, Rowan University Professor

<http://www.rowan.edu/graduateschool/> information on the graduate school

<http://www.rowan.edu/ChE> – more information on Rowan Chemical Engineering

Contact Hesketh@Rowan.edu for more information on these courses.

CHEMICAL CONSULTANTS NETWORK



All meetings will be held at the Cynwyd Club, Bala Cynwyd, PA; Networking, 5:30 PM; Dinner, 6:30 PM; Talk and Business Session, 7:30 PM. More details at <http://www.chemconsultants.org>. Reservations at CCNReservations@aol.com or call the ACS office at 215-382-1589

January 12	Strategic Alliances	John Newport Boyd Sorenson
February 9	Consultant Opportunities in Patent Law	Peter Mlynek
March 9	To be announced	TBA
April 13	Sustainability Consulting Opportunities	Ernie Weiler
May 11	Data and Literature Based Consulting (no lab required)	Kathryn Bullock
June 8	Open Forum	Open Forum

Volunteer Opportunities

Have you considered becoming a little more involved in the Section? It's a good chance to meet new people, share your talents, and pick up some fun experiences. There are Officer opening on page 5 and here are a few easy ways to contribute:

Co-Chair an event: Pair up with an experienced member to plan an upcoming membership meeting. It's a low pressure way to build project management and networking skills outside of work ...and it can be fun and rewarding.

Help organize a Young Engineer's activity: Similar to the co-chair opportunity above, but specifically geared toward organizing an event (social, happy hour in the city, etc.) targeted for young engineers

Do you Twitter? Are you on Facebook? Think the DVS can benefit from social networking tools? If so, we could really use your help. Why not help us navigate the technology and show us how to effectively use it?

Co-Liaison to the Engineers Club of Philadelphia: Learn from our seasoned pro, Bill Celenza, as you begin to share the responsibility of representing our section and keeping us informed of Engineers' Club activities, particularly Engineering Week events.

If you want to get more involved, or if you're interested in any of these opportunities, please contact Karl Saydlowski at dvs.karl@gmail.com or 484-341-1034.

Delaware Valley Section of AIChE - Brian Snyder, Board Member

As a member, you may be sitting at home or at work wondering what good your professional organization is doing with your dues money lately. Well during our monthly planning meetings, we have been organizing various events for our local chemical engineering community. These events include resume writing and interviewing workshops for graduating college students, and for students as well as colleagues in and between work places we are coordinating local plant tours and social events allowing people to learn a few extra things while networking. Your AIChE chapter is also keeping up with the times by expanding with new Facebook and Twitter accounts to allow members and wannabe members to follow along and shape future events by providing helpful comments.

News of Interest

Congratulations to Doug Kriebel, PE

Doug Kriebel was Elected 2011 Engineer of the Year of the Delaware Valley

<http://www.ache-philadelphia.org/sectnews.htm#eoy>

Update on Professional Development Requirements in PA and NJ

As you may be aware, professional engineers, land surveyors and geologists in Pennsylvania are required to obtain continued professional development (CPD) credit to renew their licenses in 2011. This is effective as of October 1, 2009. Exactly how this is to be done is still up in the air as the enabling legislation has not been passed by the PA Senate as of press time. It has certainly been the topic of considerable confusion, with one law from 2006 already "on the books" (but no final regulations for implementation) and the status of subsequent modifying legislation still in limbo. We would suggest you contact your Senator and urge that he/she take action on this bill. PSPE has a sample letter in the Legislative Action Center section of its website (www.pspe.org) that can be used in this regard. Please take action and help yourself and your profession.

The news is a little different for those of you who hold PE licensure in New Jersey. Assembly Bill 3835 was reported favorably out of the NJ State Senate Commerce Committee in December and was signed into law by then-Governor Corzine on January 17. This will require CPD for continued licensure in New Jersey. It will take effect in early 2011. Details will be provided once the State Board completes the necessary regulations.

We will continue to provide updates and information on this important topic as developments occur.

(originally appeared in the Engineers Club of Phila "The Bulletin, February 2010, Issue 6")

Volunteer Opportunities to Encourage Math and Science Skills

There are numerous programs that encourage students in science and math and/or promote engineering. These programs can always use additional volunteers.

Below are a few opportunities with information for more detail.

MATHCOUNTS: The MATHCOUNTS Competition Program provides the extra incentive and the perfect atmosphere for students to push themselves to achieve more in mathematics. Consisting of fun and creative problems, the MATHCOUNTS competitions have written and oral rounds, as well as individual and team components. Though challenging and non-routine, the competition problems focus on the 6th through 8th grade standards of the National Council of Teachers in Mathematics. MATHCOUNTS is run in February by each of the PSPE and NJSPE chapters. Each chapter can use volunteers and financial support to produce the competition, and are not limited to chapter members. To participate in or help sponsor, contact the coordinator in your area. In Pennsylvania, go to http://pspe.org/mathcounts_competitions.shtml and in New Jersey go to <http://www.mathcounts-nj.org/coordinator.htm>.

Future City: While the 2010 competition is over, the regional Steering Committee is already looking for more members for the 2011 competition. Most of the current Steering Committee members have been involved for over 10 years and it is important to bring on some new faces and new ideas. If you are interested in finding out more, contact Jennifer Wetzel, Volunteer Coordinator, at jwetzel@pobox.upenn.edu.

DVS Student Outreach – Connecting With CHE's Future

An important part of the DVS mission is to work with and support the next generation of Chemical Engineers. To meet the needs of local students, the DVS is continuing highly successful programs and adding new ones, including:

- Based on overwhelmingly positive feedback last year, the DVS held our 2nd annual Resume and Interview Workshops in October. Karen Huller (Resume and Job Transition Strategist from Charésumé LLC) and Beth Ann Wilson M.Ed. CMF (an Independent Résumé and Job Transition Strategist) volunteered their time to provide guidance to local students. The workshops were held at Widener University and Villanova University to bring the information to the students.
- The DVS is implementing a Student Ambassador Program. A representative of DVS to each local school. The vision is to have the Ambassadors attend some of the AIChE Student Chapter meetings/events to provide DVS information and (more importantly) gather ideas and feedback from students. Ideally, we would like to reach a state where the Students are driving the DVS Student focused programming and influencing all programming by active participation. If you are interested in helping with the Ambassador program, please let the DVS Board know.
- Outstanding Students and the report winners will be honored at the annual Student Awards Night in April. The DVS Board is ramping up outreach efforts to ensure more Student, Faculty and industry participation in the Student Awards Night this year.

DVS events offer significant discounts to Students to encourage their participation and drive Student networking opportunities. As a recruiter for my company, I can tell you that networking does make a difference when you are seeking job opportunities. As a participant in many DVS events over the years, I have learned much while enjoying the opportunity to socialize with other CHE's.

I hope that the number of bullet points above will be expanded the next time we revisit DVS Student Outreach in the DVS Newsletter. I invite Students to attend the monthly DVS Board Meetings held at Villanova at 6pm on the first Wednesday of each month. Most of all, I encourage Students to participate. This is your professional organization. Contact information is available on the DVS website at www.aiche-philadelphia.org.

CEO Lecture Info

Registration Details:

The League requires a jacket and tie be worn by men, and appropriate attire for women. Jeans, denim wear, or sneakers are not permitted.

Register by clicking the appropriate PayPal button below. Then, review your shopping cart (if necessary, adjust quantities or keep shopping) and "check out". Follow the prompts to pay by your PayPal account or pay directly by credit card (without a PayPal account). Creating a free PayPal account allows you to pay electronically by either check or credit card.

You will be registered for this event upon successfully completing the PayPal transaction. Your PayPal receipt confirms your registration.

For further information please contact Doug Kriebel at dkriebel@kriebel-ltd.com or 215-364-3400.

Menu:

Reception: Cocktails and hors d'oeuvres

Dinner: to be announced

Reception and Dinner in Meade Room
For more information about the Union League please visit www.unionleague.org or call 215-563-6500.

Remember that Math or Science teacher that influenced your career decision?

Are you at the point in your career when you are looking for something significant and challenging to give back to the community?

Looking for a new challenge?

E=mc² is a new certification program from Temple University's College of Education that trains degreed math and science career changers and early retirees to become science or mathematics teachers in middle-grade schools in Philadelphia. Educating Middle-grades Teachers for Challenging Contexts (**E=mc²**) is a Transition to Teaching program with an accelerated, practical and flexible path to teaching which includes two Fridays and Saturdays each month for the first six months. **E=mc²** allows participants to maintain their current non-teaching job in the beginning of the program as they transition to teaching and receive a \$5000 tuition subsidy. Full-time student teaching begins after six months of classroom learning.

For more information and how to apply, go to www.temple.edu/education/emc2 or call Sally McNamara at 215-204-8149.



Joseph Priestley Society

All members and guests of AIChE are invited to the monthly JPS meetings.

These are held at the Chemical Heritage Foundation at 315 Chestnut Street, Philadelphia, PA.

Advance registration is required at chemheritage.org/JPS.

Cost is \$25 and includes reception, lunch and

January 13

Michael Ott

President, CEO Polysciences, Inc

February 10

Paul Anastas

Assistant Administrator Office of Research and Development to US EPA

March 10

Jerome Peribere

VP Dow Chemical Company

For more info visit:

<http://www.chemheritage.org/visit/events/joseph-priestley-society/index.aspx>



Chair's Chat

(Continued from page 1)

Kelly, President and CEO of W.L. Gore. Details are still emerging on events around the International Year of Chemistry, which is being held in Philadelphia in early February. The Chemical Heritage Foundation will be the organizing site for many of those activities. On February 17th, we have another in our safety continuing ed classes; this one is on Pressure Relief Devices and Systems. Engineer's Week will be celebrated in Philadelphia between February 18th and the 26th, and we are especially excited this year. One of our own, Doug Kriebel, has been elected Engineer of the Year! For those of us who know Doug, it is a well-deserved honor and a long-time coming. Doug will be feted at the Proclamation Luncheon as well as several other events throughout the week (details pending). So please come out and help us celebrate this huge honor. As if that wasn't enough, the last in the CEU courses will be presented on March 24th. And who said there is nothing to do in the winter???

The spring looks to be pretty busy, too. Our annual Student Awards banquet is planned for mid-April at Drexel University. This is an opportunity for the universities we serve (Drexel, Penn, Widener, Rowan and Villanova) to showcase their top engineering talent. Awards and prizes will be given out and this is also a wonderful inter-generational networking event. And last on the docket (so far), is a tour of the DEL-CORA (Delaware County Regional Water Quality Control Authority) facility on May 11th. For those of you that don't think about where your wastewater goes, this tour will explain the treatment process and the chemistry and biochemistry involved to treat up to 44 million gallons of wastewater per day.

Details on all these events will be posted on our website and announcements will come out via Constant Contact. As we are continually adding events, check back often for the latest info

As you can see, the Delaware Valley Section has been very busy this year. We have an awesome board and I would be remiss if I didn't thank them for their hard work and dedication. So a quick shout out to Charlie, Ken F, Ken R, Karl, Mark L, Doug, Bob, David, Bill, Zenaída, Mark D, Priya, Aniket, Chuck, Pat, Brian, Dan, Ted and Mark C. This team makes my job very easy. If anyone else is interested in joining our board, please contact one of the current board members or just show up to the meeting. We are always looking for fresh ideas on how to serve our members. Board meeting dates and times are posted on our website.

And lastly, a special thanks to Villanova University, for allowing us to have our meetings in White Hall.

From all of us at DVS, best wishes for the Holiday Season.

Sue Schultz

Get a refund! Register early!

Did you know that you can get a refund for an event you have to cancel? Per DVS policy, when you cancel your registration BEFORE the registration deadline, we will refund your full registration fee, without penalty. When you pay with Paypal, we simply reverse the charge. The full amount is immediately credited to the credit card or bank account you initially used to register. So, why not register early for an event? Not only does it get on your calendar, but it holds a spot for you... important when there's a registration limit. Don't miss out on a great event... register early!

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2010 – 2011 AICHe- DVS Event Schedule

January 14	Ronald McDonald House	Volunteers needed
February 8	CEO Lecture at Union League	Terry Kelly, CEO/President Gore
February 17	Continuing Education Series	Pressure Relief Systems
February 18	Engineers Week	Luncheon Double Tree Hotel
February 22	Engineers Week	Young Engineer's Social
February 24	Engineers Week	Celebration of Engineering
March 23	Continuing Education Series	Process Safety
April	Student Awards	TBA

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**AIChE Newsletter
Delaware Valley Section**
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Mail address corrections to Data Base Manager at above address .

Our Files are continually updated with your input and membership information from AIChE Headquarters.

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inside...	Feb. CEO Meeting	page 1	CCN	page 3
	Chair's Chat	page 1	Executive Officers List	page 7
	Tech. Tip	page 2	Meeting Schedule 10-11	page 7