

### Saturday May 16th 2009 Adventure Aquarium

**C**ome explore nearly 200,000 square feet of sharks, hippopotamuses, free-flying birds and sea life from around the world -- As an option, also enjoy an exclusive one-hour behind-the-scenes tour of the engineering systems that make the aquarium operation possible!.

The tour is at 2PM; however general entry to the aquarium is between 9:30 AM and 4:30 PM (closes at 5 PM) – meet the group leader near the aquarium box office to receive "wrist bands". If you plan to enter the aquarium before 11AM please call Bill Celenza at 609-929-7200 to arrange a time to pick-up the "wrist-bands". Note, the aquarium recommends to arrive before 2 PM on Saturdays to help to avoid crowds.

For the 2PM "one-hour behind-the-scenes" tour, you will need to arrive at least 15 minutes before tour i.e. by 1:45 inside the aquarium.

The tour is limited to the first 20 people that make payment-in-full for both the General Admission and the tour.

There is no limit on the special group rate general admission tickets (half the price of regular general admission), however a reservation must be made by Monday May 11th.



[www.adventureaquarium.com](http://www.adventureaquarium.com)

*Adventure Aquarium will lead you through an underwater world.*

**Location:**  
Adventure Aquarium  
One Aquarium Drive  
Camden, NJ 08103  
800-616-JAWS

General Admission (Group Rate): \$10.50 (includes tax)

One-Hour Behind-the-Scenes Guided Tour: \$8.50 (includes tax) -- Note: No Children under 7th Grade permitted on the tour.

No food or beverages are included in these admission fees. (FYI, The AICHE/DVS group Confirmation Number is: 887808)

Parking is \$10 per vehicle

**DIRECTIONS TO ADVENTURE AQUARIUM:** .Page 4

### Chair's Chat Looking to the Future

**M**embership in your Section is the best way to meet colleagues, network and make contacts while advancing the profession. Membership in AICHE has numerous benefits at the national level. However, to complete the package for career and personal development, you can't beat membership in your local section. We are proud to be one of the most active sections in the country thanks to your support and involvement. Please remember to **check the box** indicating membership in the Delaware Valley Section when you renew your national membership.

We are thinking about some changes and we need your input. This year the Section was involved in new types of events. We played an important role in the 100<sup>th</sup> anniversary celebration of the AICHE that included a desert reception for educators. This, along with our September seminar highlighting the benefits of industry/academic collaborations, served to strengthen the ties between academic and industrial colleagues. We have started a young professionals group to improve our link to AICHE student

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### **Write the SOPs While You Are Designing the System**

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

Imagine you are installing a complex pharmaceutical water system that needs to be steam sanitized periodically or a rather involved clean in place system for a process unit.

The complex water system contains a main loop and multiple sub-loops as well as redundant circulation pumps. The water system has multiple operating constraints such as the following:

1. Turbulent flow must be maintained within all parts of the piping system at all times.
2. Water can't be stagnant in any part of the system for more than one hour.
3. Water must be sampled at various low points throughout the system.
4. All parts of the system must be maintained above a certain temperature at all times.
5. The quality of the water must be maintained within defined TOC and conductivity limits.
6. The online pump must be periodically switched so that both pumps get the same amount of run time and remain usable.
7. The offline pump and its associated piping must be continuously flushed with hot water in order to minimize the accumulation of bioburden.

A pump and its associated piping taken offline pump for maintenance must be drained and steamed prior to being put back into service.

The steaming of the pump will be a mildly complex operation. The steaming of the entire water system will be extremely involved. Restarting the water system while maintaining all of the above criteria will be tricky. Therefore, it is advisable to work through the sequence of operation for each operation of this system while implementing the design. If you don't work through each operation for this system during the design effort then you may end up with an inoperable or unmaintainable system. You could end up with a tank that fills too slowly. You could end up with a system that doesn't monitor the temperature at a crucial point in the system. You could end up with a system that doesn't have sample connections at all required low points.

These omissions may be very difficult if not impossible to remediate after the system is installed and ready to be commissioned. You may be able to modify the piping system to add the needed temperature sensor and low point sample connection, but it may be extremely difficult to revise the system hydraulics in order to achieve an appropriate fill rate for the tank. However, if this tank filling issue had been uncovered during the design process while writing the SOPs then a more appropriate tank fill rate could have been established from the start for this tank.

Now, regarding the clean in place system for the process unit, it contains multiple paths that must be cleaned by a single pump and tank. Every inch of the process unit and its associated fill and drain piping must be cleaned by moving fluid. The CIP pump and CIP fluid holding tank must also be cleaned by moving fluid. If any part of the equipment or piping system is left uncleaned then harmful contaminants could remain in a system that will manufacture other incompatible products. Can you leave it to chance that your design effort will

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**CHEMICAL CONSULTANTS NETWORK - MAY 13, 2009 MEETING**

[Visit our NEW web page at www.chemconsultants.org](http://www.chemconsultants.org)

**Date & Time:** Wednesday, May 13, at the Cynwyd Club, Bala Cynwyd, PA; Networking, 5:30 PM; Dinner, 6:30 PM; Talk and Business Session, 7:30 PM

**Topic:**

## CONSULTING IN A CHANGING ECONOMY... STARTUP THRU GROWTH

**WALT JOHNSON**

**FOUNDER & PRESIDENT OF PRECISION SYSTEMS INC.**

**Abstract:** Rapid changes, in the economy and technology, increase the need for consultants with special abilities. How does a new consultant begin? Do you have what it takes? How can experienced consultants improve their process? What are clients looking for? How do consultants identify and address client needs? This presentation provides answers, basic strategies and client rules.

**Reservation:** To make or cancel a dinner reservation, e-mail [CCNReservations@aol.com](mailto:CCNReservations@aol.com) or call the ACS office at 215-382-1589 (leave message on voicemail if necessary). Fee, including food and beverages (wine, beer & sodas), is \$25 by the deadline, Thursday, May 7, \$35 afterwards. Late reservations and walk-ins subject to availability. No-shows will be invoiced. Dietary restrictions accommodated on a limited basis. There is no charge for talk only; registration is suggested using contact information above.

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### Chair's Chat

*(Continued from page 1)*

chapters. Our goal is to have AIChE ambassadors for each of the five schools in our region. We are considering expanding these efforts to include longer seminars so that we can keep abreast of new and emerging technologies and strengthen our technical knowledge in more established technologies. In this way, members who do not attend the AIChE national meetings can stay current and meet colleagues with similar interests. Our question to you is – Would this appeal to you? Would you be willing to spend half a day in training at an AIChE-DVS symposium? If so, what are the technologies that would interest you? We have had several suggestions: biosimilarity, nanotechnology, process intensification, green engineering – to name a few. Your Section is here to serve you. Please e-mail any of your officers with your input and comments. Our addresses are in your newsletter and on our website, [aiche-philadelphia.org](http://aiche-philadelphia.org)

We are also thinking about going Green with the newsletter. Costs to produce and mail the newsletter have increased significantly and we have noticed that Constant Contact has worked very well to promote our events. We are thinking about moving to an electronic newsletter. Tell us what you think.

The only thing that is constant is change. When it improves the way the Section serves you, change is good. We are looking forward to hearing from you as we move forward to grow and strengthen the Section. Your support and involvement is what keeps our section vital and keeps you connected and networked to your colleagues.

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**American Institute of Chemical Engineers (AIChE)**  
**Wilmington Local Section Event**

**Economic Outlook 2009 and onwards – Recession, Realization, Rationalization and Rebound.**

**Robert C. Fry,**  
Senior Associate Economist, DuPont Economist's Office, Wilmington, DE.

**Date : 5 May 2009 (Tuesday)**

**Abstract:**

Dr. Fry will employ his background and expertise to discuss the outlook for the global economy in 2009-2010.

The emphasis will be on the current recession and the ensuing recovery. Dr. Fry will elaborate on what caused the downturn, provide the rationale for some of the current market trends and point to the potential signs and portents of an economy on the rebound.

Among the topics that will be covered are GDP, industrial production, housing starts, motor vehicle production, inflation, and interest rates.

**Biography :** Dr. Robert Fry is a Senior Associate Economist with DuPont Economist's Office. He has been with DuPont since 1984. He joined Conoco from Harvard University after completing an A.M. (1981) and Ph.D. (1985). After three years with Conoco, he has spent the rest of his DuPont career at the DuPont Economist's Office and the DuPont Pension fund. He is responsible for analysis and forecasting of global economics and how it impacts DuPont business. He also assists DuPont businesses with interpreting economic data and using it to forecast DuPont performance. The DuPont Economist's Office (Robert Fry and Bob Shrouds) has been named amongst the top forecasters by the Wall Street Journal, USA Today and Bloomberg. In November 2005, they won the prestigious Lawrence R. Klein Award for the Blue Chip Forecast Accuracy making Dupont Economist's Office the only three-time winner of this award.

**Date :** 5 May 2009 (Tuesday); Registration Deadline 1 May 2009 (Friday)

**Time :** Registration : **5.30PM**; Dinner : **6PM**; Presentation : **7PM**.

**Cost :**   **\$30 – Non members and guests.**  
          **\$25 – AIChE Members.**  
          **\$10 – Students and those between employment.**

**Location : La Casa Pasta.**

**To make reservations and details contact:**

> Uttam Shanbhag           (302) 229 0854           [pvshanbhag@comcast.net](mailto:pvshanbhag@comcast.net)  
> Liza Lopez               (302) 695-9837           [liza.lopez@usa.dupont.com](mailto:liza.lopez@usa.dupont.com)

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**Directions to Aquarium**

From Ben Franklin Bridge - Take I-676 to Exit 5A/Mickle Blvd/Camden Waterfront to right at traffic light onto Mickle Blvd. Follow Mickle Blvd. straight ahead to the Waterfront. Follow to [parking as below](#).

From Walt Whitman Bridge - Stay right to Camden Waterfront exit and I-676. Exit 5A for Mickle Blvd/Camden Waterfront. Turn right at traffic light onto Mickle Blvd. Follow Mickle Blvd. straight ahead to the Waterfront. Follow to [parking as below](#).

**For parking, turn right at end of Mickle Blvd onto Riverside Drive (the Camden Children's Garden will be on your left) to the stop sign. Proceed straight ahead to the flat lots. Or, turn right onto Federal Street, then right onto Delaware Avenue and another right into the parking garage.**

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**Tech Tip Cont.**

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correctly identify all necessary piping components and controls to allow you to effect the necessary cleaning in a validatable manner? I should think not. A detailed procedure for cleaning the process unit and its sub-components must be defined during the early stages of the design effort so that all necessary system components can be procured and installed. Once procured and installed then the system can be tested using the operating procedure to prove the viability of the design. If deficiencies are uncovered, they should be minor since a detailed means of performing the cleaning process has already been thought through and built. Additionally, this detailed operating procedure will be needed early in the design effort to develop the control system configuration if an automated CIP process will be instituted.

Common industry practice is to build a design from the bottom up. Developing a basic design first, then moving on to detailed design, then issuing documents from the detailed design effort to contractors for construction of the system. These activities take up much time and effort so often the writing of the SOPs must wait for a more opportune time. I contend that a company is much better served if they take the time up front to develop the SOP while they are designing the system because to do anything less is putting yourself at a significant risk of missing some key objective of the system or project.

**Joseph Priestly Society**

**T**he Joseph Priestly Society meets monthly at the Chemical Heritage foundation. There is a one hour networking social at 11 am, followed by a buffet lunch and speaker. It is free by invitation. As AIChE members, you are invited and welcome to attend.

More details may be found at:

<http://www.chemheritage.org/events/event-nav1.asp>

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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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