JUNE MEETING: THE DOW CHEMICAL STORY: ON BEYOND BROMINE

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WEBEX MEETING NUMBER 276 141 101 (further directions on page 6)

THURSDAY, 25 JUNE 2015

9:00 pm EDT, 8:00 pm CDT, 7:00 pm MDT, 6:00 pm PDT;

UTC/GMT 0200 26 June 2015

ABSTRACT: In 1897, Herbert Henry Dow founded his eponymous company for the commercial production of bleach and KBr from the Midland, Michigan, brines, but he probably would not recognize the company today. Dow Chemical has grown and diversified to become one of the world's largest and most successful chemical conglomerates. The company has had high points (inventing Styrofoam, pioneering biodegradable insecticides, generosity to education and community) and low points (napalm, Agent Orange, Rocky Flats, Bhopal (with the acquisition of Union Carbide)). This month's program will focus on the progress and prognosis of this chemical giant.

SPEAKER: Dow's Global Operations Technology Director, Dr. Billy B Bardin, holds a Bachelor of Science in Chemical Engineering from North Carolina State University (1995), and both a Master of Science (1997) and a Ph.D. (2000) in Chemical Engineering from the University of Virginia. He is a Registered Professional Engineer (PE) with the WV State Board of Registration for Professional Engineers. He is chair of the Industrial Advisory Board for the School of Chemical Engineering at Purdue University and a member of the advisory board for the Dept. of Chemical Engineering at the University of Virginia.

His current responsibilities at Dow include driving technology and innovation strategy within Manufacturing and Engineering (M&E) and oversight of all commercial technologies as well as development of technical talent across manufacturing and supporting operations.

More information on June's speaker and topic can be found on the VLS Events Website.

IN THIS ISSUE

This fall, VLS will showcase the experiences and accomplishments of chemical engineering interns and coop students. Activities include a student presentation contest for the September meeting.

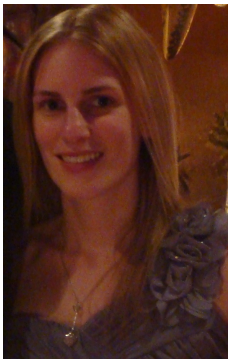
With this in mind, in this issue, Chair Amanda Scalza and Chair-Elect Daniel Sujo have written about their intern experiences from both sides of desk. Amanda discusses the lasting effects of interning at a nuclear power plant and Daniel talks about using his own experiences to enhance the experiences of current student workers. Readers who want keep the student work experience discussions going as part of the preparation for the September Showcase can contact any officer, including the your word-hungry editor (jbrand@unl.edu), with "September Showcase" in the subject line.

Our history of chemical engineering series continues with the history of Dow Chemical. We make our own bilingual publishing history thanks to Daniel Sujo graciously providing his article in both English and Spanish.

Jennifer I. Brand, Editor

FROM THE CHAIR: LASTING LESSONS FROM MY INTERN DAYS

Amanda Scalza



As I watch the first tropical disturbance of the season make its presence known here on the Texas Gulf Coast, I recall the final days of my industrial internship at a nuclear power plant. I don't think I truly

understood how important the nuclear industry was until my very last days. As I was finalizing my paperwork, there was a flurry of activity throughout the plant. All hands were on deck preparing for hurricane Irene. When Irene unleashed her fury the next day and I sat in my dark, packed-up apartment, I had much more patience and a great deal of gratitude for the people who dedicate their lives to ensuring our schools, hospitals and homes have the power they need to operate every day.

Successful internships and successful storm response have three main elements in common: *early preparation, smart goal setting, and effective communication*.

I keep a basic hurricane survival kit, which I verify and replenish about a month before the start of the season. Since internships are typically only 3-4 months long, ensuring the students can hit the ground running is critical. *Early preparation* by human resources, IT, and other basic company resource providers will save on frustration for everyone, and allow for learning to begin on day one. No matter how big or small a company, this may be the biggest pitfall. As a woman, one of the most common things I see is lack of preparedness for personal protective equipment. In order to have a successful and a satisfying experience, early preparation is important.

When a hurricane warning rolls around, I always keep a *goal* to accomplish. Being stuck inside, it keeps my mind busy. I keep a backup plan as well, for loss of power. In both hurricane and internship instances, I have found that setting clear and realistic goals can make a great difference in quality of experience.

Though many enjoy having the extra set of hands on deck when an intern comes, deciding on what those interns will actually do when they come can be difficult. Finding a project the intern can accomplish within a short time frame, with the limited a priori knowledge of your systems can be a daunting but critical preparation task. If unrealistic goals are set, students may feel disappointed by being unable to finish their project, which often remain unfinished completely, at least until another intern attempts to complete the task. At my internship I was able to have the wonderful experience of completing a project under the six-sigma green belt training program. This gave my project structure from beginning to end and a great feeling of accomplishment when achieving this certification and presenting recommendations.

Effective communication is essential for tasks everyday around the plant and at home, and the lack of such communication can be a huge contributing factor for nearly all accidents and near misses. I keep a list of emergency contacts in my home, car and desk so that I can keep in touch with my employer and loved ones in case of cell phone or power failure.

Simply because we work for the same industry, or even the same company, doesn't mean we understand each other. Is it a "spectacle blind", a "hammer blind", or a "figure eight"? Sitting back in a meeting, it

can be astonishing how many acronyms are used in one conversation. We get in such habits of assuming everyone in the room understands our jargon, simply because it flows so easily from our tongues. It can be frustrating and discouraging for an intern when unfamiliar terms are used (or even terms that *seem* to be familiar, but don't add up in context), They will often not know what most of these words mean, and may be too shy or ashamed to ask. Certainly there's a different level of communication and understanding of valves from textbook photos to real life mechanics! Effective communication is not simply talking, but ensuring our listeners understand, and being sensitive to the fact that this may be their first time hearing the very industry-specific language we are speaking.

FROM THE CHAIR - ELECT: INTERNS AT A LOCAL SECTION

Daniel Sujo

At my company, I was given the task of implementing the internship/co-op program two years ago. The program needed to be designed in a way that could provide significant and meaningful opportunities for students while being valuable to the company in order to be approved. "What are those meaningful opportunities?" I asked myself. In order to answer that question, I had to remember my days as student. So my answer to that question was another question: "What experiences would I have liked in an internship when I was student that could facilitate my way to industry?" The answer started to emerge spontaneously and manifest itself in each project I was working on. The tasks and project timelines started filling up for each or the intern/co-op positions.

Through the projects, the students were exposed to the company's business, cross functional teams, operations, scheduling, and process design, etc.; however, another main part of my plan included inviting the interns/coops to work at the board of directors level of the Delaware Valley Section. I saw it appropriate because I have always wondered what have happened if I had collaborated in an AIChE local section when I was in school. I must thank the board members for supporting the idea. It has almost become customary to have students serving at the board level because the help they provide but most importantly the students can experience first hand the value that the local sections bring to advancing the profession that they chose while learning how to run one. Moreover, it is our mission as a board to promote the formation of our future section leaders so we can remain strong through time.

I would like to invite any student to collaborate with us at the Virtual Local Section to encourage other sections to invite interns/co-ops to participate at board level as well.

PRACTICANTES DE INGENIERÍA EN UNA SECCIÓN LOCAL

Daniel Sujo

En mi compañía me di a la tarea de emprender un programa de prácticas profesionales hace dos años. El programa necesitaba estar diseñado para que pudiera darle a los estudiantes experiencias valiosas y significativas y que al mismo tiempo le fuera rentable a la empresa, para poder ser aprobado por la gerencia. ¿Cuáles son esas experiencias significativas? - me pregunté. Para contestar la pregunta, tuve que recordar mis tiempos en la universidad y hacerme otra pregunta. ¿En una práctica profesional, qué experiencias me hubieran gustado tener para que me facilitaran mi transición en la industria? Al cambiar la pregunta, la respuesta empezó a salir por sí sola y a aparecer en cada uno de los proyectos en los que estaba trabajando. Las listas de tareas se empezaron a llenar para cada una de las posiciones que se iban abrir.

Aún cuando los proyectos establecidos expondrían a los estudiantes a cómo se hacen negocios en la compañía, equipos de trabajo interdepartamentales, operaciones, programación, diseño de procesos, etc,, planeé en invitarlos a trabajar en la mesa directiva de la sección local del valle de Delaware, en Filadelfia. Lo vi apropiado porque siempre me he preguntado, qué habría pasado si yo hubiera empezado a colaborar con AIChE cuando era un estudiante de ingeniería química. Debo de agradecer a los miembros de la mesa directiva por apoyar la idea. Se ha vuelto casi una costumbre el tener estudiantes en nuestra mesa directiva por la gran ayuda que nos dan, pero más aún los practicantes pueden darse cuenta de lo importante que son las secciones locales por el valor que le imprimen a la carrera que escogieron. Al mismo tiempo, los practicantes aprenden cómo se dirige una organización. Incluso se podría decir que el incluir practicantes en la mesa directiva debería ser parte de la misión de la sección local ya que fomenta la formación de los líderes futuros aumentando así, la viabilidad de la organización en su prueba de fuego: el tiempo.

Quiero hacer una invitación abierta a todos los estudiantes a colaborar con nosotros en la Sección Local Virtual y a las secciones locales a fomentar este tipo de colaboración.

MARK YOUR CALENDAR

VLS Meetings are the fourth Thursday of the month:

Thursday, July 23rd

AIChE Fellows: Who, Why, and How?

Thursday, August 27rd

AIChE Presidential Candidates

Thursday, September 24th

Student Showcase (Paper Competition)

--- Thursday, October 22nd ----

Vice Admiral Joseph Dyer, USN (ret)

2015 is European Industrial and Technical Heritage Year

ATTENDING A VLS MEETING

- **Join by internet:**
  - https://aiche.webex.com/aiche/j.php?MTID=m8a0766c5d03559acce05542a78513954
  - Meeting number 276 141 101

- **Join by phone:** Access code: 276 141 101
  - 1-866-469-3239 Call-in toll-free number (US/Canada)
  - 1-650-429-3300 Call-in toll number (US/Canada)
  - Global Call-in numbers
  - Toll-free calling restrictions

Attendance at a Virtual Section Meeting is open to AIChE Virtual Local Section Members, AIChE members and other interested people.

PDH CREDIT FOR VLS MEETINGS

LAURA J. GIMPELSON, P. E.

Attendees of the Virtual Local Section Meetings can receive up to 1 hour of professional development credit that meets the continuing education requirements of most state professional engineering registrations. To receive the certificate documenting your attendance, send an email to the VLS secretary, Laura Gimpelson, at virtualaiche@gmail.com.

Include the following information in your email:

1. Name of the Presentation and Speaker
2. Attendee's name as listed on the registration certificate
2. Attendee's registration number and state/providence of issuance

The certificate, in pdf format, will be issued within 30 days of the receipt of the request.