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SEPTEMBER MEETING: 1ST VLS SUMMER INTERN AND CO-OP PRESENTATION COMPETITION FINALISTS

[WEBEX MEETING NUMBER 276 141 101](#) (further directions on page 7)

THURSDAY, 24 SEPTEMBER 2015

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

UTC/GMT 0200 25 September 2015

Six students finalists have been selected for live presentations at the September VLS meeting as part of the First VLS Summer Intern and Co-op Presentation Competition. Sean Bittner (Auburn University – SABIC Innovative Plastics), Mark Carrington (Stanford University – PCS Nitrogen Trinidad Limited), Sofia Barrera Cobos (Tecnológico de Monterrey, Mexico – Colorado Center for Biorefining and Bioproducts), Manjot Singh (Indian Institute of Technology – ITC Limited), Jordan Harris (Northeastern University – CanCURE), and Benjamin Webster (Rowan University – McCormick & Co, Inc.) will each present their summer internship projects during the regular meeting, Presentations will be a maximum of 10 minutes each, and will be judged by practicing chemical engineers.

More information can be found on the [VLS Events Website](#)

AICHE VOTING

AIChE Members, voting is now in progress for the **2015 AIChE Elections**. [Candidate information](#) for all offices is available. The August 25 VLS [President-Elect Debate](#) is available for review on line, along with links for voting.

IN THIS ISSUE

In a landmark event, we actually have a letter to the editor! From **Neil Yeoman**, VLS Treasurer and AIChE Fellow, whose thoughtful letter gives us a fresh perspective on diversity.

Past Chair Noah Meeks reflects on his own undergraduate research experience, how he still uses some of the lessons he learned, and how he tries to insure that current interns, co-ops, and their managers benefit from his wisdom.

Chair Amanda Scalza focuses on safe environments at work and on the safety resources AIChE makes available to its members, especially students.

Chair Elect Daniel Sujo proposes turning to philosophical solutions to synchronize efforts between academia and industry for balancing theoretical and applied learning.

-- Jennifer I. Brand, Editor

LETTER TO THE EDITOR: DIVERSITY

Neil Yeoman writes:

The diversity issue is more complex than too many people realize. There are historical, sociological, and cultural factors involved and probably some sensitivity to the problems of using ethnicity or gender considerations to promote diversity as a basis of making hiring, assignment, and promotion decisions. In some professions, or areas of professions, the ethnic and gender mix is unlikely to ever match the local demographics because of things unrelated to bias against minorities or women. Chemical engineering (or parts thereof) may be one of those professions.

The gender issue is easier to understand, at least in general, although it may be somewhat different for different cultural groups. Gender roles have been in place since humans first walked the earth, although they are changing and not nearly as fixed as they once were. However, only women can bear and nurse children; many women will always see raising children as a full time job for the entire time that any child is dependent; and many others will only accept work outside the home that will allow them more access to their children than men traditionally seem to require. These physiological and social realities will cause many women to shun some kinds of work that men will more readily accept and/or desire, and/or cause them to enter some fields of work later or less intensively than men, or it will drive them harder

towards some areas of work than what drives men to those kinds of work. And, of course, there will always be areas of work where natural physical characteristics will influence what people will want to do and/or are able to do, and, in general, there are pertinent physical differences between the genders, at least on the average.

Why different ethnic groups gravitate to different areas of work will be addressed separately in a future letter.

One problem in addressing the diversity issue is that too many people see diversity as an independent variable, rather than as the dependent variable I think it should be. Diversity should not be promoted; it should be allowed. All barriers to diversity should be removed and people allowed, indeed, encouraged to work in any area that best fits the needs and abilities of the people working and the requirements of the work that needs to be done. With that in place diversity will just happen, and it will be the right kind of diversity. I well recognize that removal of those barriers is easier said than done, and, for the most part, not only outside the scope of anything AIChE can do, but may require some fundamental rethinking of the country's socio-economic philosophies, policies, and priorities.

LASTING LESSONS FROM SUMMER WORK

Past Chair Noah Meeks



Many, if not most, chemical engineers had a memorable summer internship or co-op experience. For me, an undergraduate research experience (REU) made the most sense, as I was considering graduate school. This experience gave me a chance to understand more about academic research and graduate education. For the first time, I was exposed to the concepts of "publications", "group meetings", and "post-docs" and their importance in academia. Besides immersion in this new culture, this summer experience left me with some important lessons as valuable outside of academia as inside.

First, I learned that I didn't know everything. Not only that, I barely knew anything at all compared to what could be known! After three years of college, I thought there wasn't much left to learn, but one afternoon browsing the UNC Chemistry Library left me in awe at even the advanced knowledge assembled in that one room.

Second, I learned how to read independently. I had always been a strong reader but often it was for a class or non-technical pleasure reading. But the first day of my internship, they gave me a polymer textbook and told me to read it -- no guidance on what to read or at what depth

to learn the material. This was my first introduction to technical reading to gain knowledge but without an assignment or test as a follow-up. Reading and assimilating technical knowledge to develop an understanding is such an important skill for any researcher, including summer interns. Having now managed a few co-ops and interns in industry, I know this is still a critical skill for them to be productive in their short amount of time with us.

Third, I learned that it was OK to make mistakes in the lab. As I was developing procedures, it was OK to fail or mess up or ruin experiments. Not that the group overlooked laziness or poor judgment, but failures that were based on seemingly sound reasoning were used for teaching, not for criticism. Now, as a manager of co-ops or interns, I also want them to learn by doing and thinking for themselves, not just by relying on me. As long as the mistakes or failures are reasonable they are OK, and indeed, the results are preferable to doing nothing at all. I think it's important for managers to put our co-ops and interns in positions where they can afford to fail but also where they can succeed as well. That freedom is important and often reveals the students' creativities and technical skills.

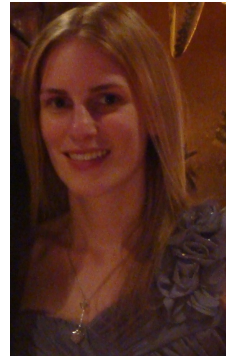
I would encourage all undergrads or even graduate students to pursue a summer internship or co-op experience. It is a great way to advance your personal and technical education, identify interests, and make a little extra money!

I'm especially looking forward to hearing from the Summer Intern and Co-op

Presentation Competition finalists on Sept 24. I was thoroughly impressed by all the abstracts submitted and think we will have a great time hearing from these students!

AICHE AND SAFETY

Chair Amanda Scalza



Most of us have seen the safety triangle, where many near misses eventually lead to a few incidents of growing severity. The issue we may find, laboratory or manufacturing, is finding out about these near

misses and finding ways to prevent the next one so that those more severe incidents never happen. I have been on both sides of that fence, as have most of us, and found that, as unpleasant as telling on yourself may be, investigating without any blame can be the key to finding and solving underlying issues that would otherwise continue to plague the area. I will tell you a little about my transition below.

My first job was a hands-on laboratory experience. I worked with one or two others bending tubing, using various tools and electrical equipment, and, in manufacturing terms, "breaking" lines on a frequent basis. No big deal. When I moved to a more office-based operations engineer role, that attitude came with me – I knew how to do simple routine operations like those and didn't require extra supervision.

In my first few months, I was working with a contractor completing an environmental test. Our operator had given me a radio to call him when we were ready to break the next line. It seemed silly to me to make him come all the way out when we had the wrench and it was only a 1" line gas line, so I did it myself. A small amount of accumulated liquid came out, and got on my hand and arm. I was lucky that time - there was nothing in the line to harm me, but, being new, I didn't really know what was in the line. There could have been traces of a dangerous chemical and it could have been worse.

Human error was clearly a contributing cause to my incident, yet I wasn't reprimanded or fired. That accepting reaction made me and my other coworkers, as well as those I tell the story to, feel safe telling about their incidents. I tell this story to interns and new hires to encourage them not to make my mistakes. In fact, a video about my experience has been recorded for others to use. We owe it to ourselves and our families to create a safe place to tell about those near misses.

At the VLS, we have recently brought back the practice of "safety moments". These quick topical briefs about safety are a great way to start any meeting, at work or at play, by reminding guests that safety is a culture and a habit. We have also had some great safety talks, including features on Process Safety Management (PSM) and Fukushima. I look forward to featuring more safety topics in the future. The AIChE offers more safety resources than ever before for

both students and professionals through the [Center for Chemical Process Safety \(CCPS\)](#). I would suggest the [Safety and Chemical Engineering Education \(SACHE\)](#) to any intern or new hire, especially since AIChE student members have free access to many of their online courses. (VLS members have free access to many safety webinars, and all AIChE members can use their six free annual credit hours for others via [ChemE on Demand \(The Academy\)](#).)

There are many catchy safety mantras in the field to try to prevent complacency but I believe the main idea of safety is this: we owe it to ourselves and our families to come home every day the way we went to work. We owe it to ourselves and our co-workers to come to work every day the way we left before.

CONNECTING THE DOTS

Chair Elect Daniel Sujo



When I entered the workforce about ten years ago, I started realizing that my education and training as a chemical engineer had many gaps. On the other hand, I also started realizing the value of things that I had no idea I was going to use in engineering practice. In my opinion, the main struggle for a young engineer is being able to envision the application, product, or solution in order to select the right technical tools to achieve the goal. The

requisite perspective comes with experience and may be hastened by mentoring. However, I believe that there are philosophical approaches to enhance and accelerate the process.

In my opinion, traditionally, universities have focused on making knowledge available to their students and then testing the acquisition of this knowledge by asking students to solve problems. After four or five years, the student obtains a bachelor's degree and gets a job in a company which values chemical engineering expertise. At this point, the company takes over training the new graduate for the specifics of the industry and field of specialization. This process to create engineers has worked for a long time. However, it is been harder to meet modern expectations, chiefly: doing more with less. Now, in my opinion, the financial expectations of the market and the expansion of knowledge are disconnected from the traditional educational process, mainly because the former has changed more than the latter.

Universities and companies are trying to coordinate efforts to provide opportunities to students for meaningful experiences in industry. However, progress has been slow. Furthermore, students cannot afford to spend more time in school due to the increased costs of education.

What is the answer then to this problem? From my point of view, the answer is in revisiting some basic philosophical issues. Perhaps I am biased or idealistic, but I believe that it has been working for me and my interns to take time

to go over philosophical questions at the beginning, middle, and end of the internship because it helps them discover what works and what does not, and how they view reality in order to understand it and change it, among other things. In this way, the internship experience leads to positive action when they go back to school or later when they start a job.

What would happen if universities provided a chemical engineering philosophy class or companies incorporated philosophical aspects to their talent development practices? I leave that question for you to answer.

CONTRIBUTIONS

I am very pleased that reader discussion has begun in our pages, and hope others will follow suit by speaking out on issues of interest to them.

Send letters to the editor or other contributions in an email to the editor at jbrand@unl.edu using "VLS Newsletter" in the subject line.

MARK YOUR CALENDAR

VLS Meetings are the fourth Thursday of the month:

--- 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.