JUNE MEETING: ACCELERATING YOUR SUCCESS IN STEM – TALES FROM THE TRENCHES

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WEBEX MEETING NUMBER 635 888 409 (further directions on page 5)

THURSDAY, 23 JUNE 2016

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

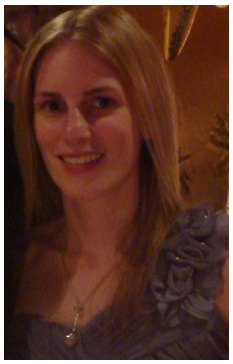
UTC/GMT 0100 27 May 2016

Based on her experiences as a leader in GSK's programs for early-career technical talent development, Dr. Jimenez-Gonzalez will present "do's and don't's" for early-career success at GSK and beyond.

Conchita Jimenez-Gonzalez is currently Program Lead of Global Manufacturing and Supply at GlaxoSmithKline, with professional interests in Sustainability and Professional Development of promising recent graduates in engineering and science around the world.

FROM THE PAST CHAIR: VACATIONS – MORE THAN MEETS THE EYE

Amanda Scalza



I will admit it-I am a recovering workaholic. Especially with modern technology, it is very easy for work to take over your life. I find the best way for me to step away is to get out of my city, as I am now. This afternoon, I will visit my thirty-second state of the United States. Visiting my home country has been a great passion of mine. I'd love to visit other countries too, but that's not quite as affordable. So far I have travelled through bits of all corners of the country, and been amazed at every turn.

In the United States, there are no laws requiring vacation time. Even if there were, many studies show those who do receive vacation time don't take all of it! Our European Union colleagues, on the other hand, are required to receive four weeks per year. Most other countries required leave is somewhere between those two extremes. For myself, vacation and traveling has become as important to my work as my personal life. Travelling helps me learn about history and culture, how to relate to others and understand different perspectives.

But wait, you may say. You are only travelling domestically! While this is true, the United States is incredible vast and diverse. Personally, I become more adaptable. Professionally, the break prevents me from burning out, allows me to come back refreshed and with a ready to tackle new problems. While summer is an excellent time to travel, especially for those who have children, I love to travel off-season. I get to know the native people without the business of my fellow tourists.

In this month's CEP, the editorial makes an argument on how vacation time benefits employers, and why employers are now encouraging you to take all of your vacation time. It is an excellent add-on to my own experience.

THE WORLD OUT THERE: INSTANT COFFEE 1957 PART II

Neil Yeoman

In the May issue of the VirtuAIChE Newsletter, I described the process for making instant coffee as background for the description of the addition to that process that caused Maxwell House Division Research to expand and this writer to be hired. I suggest that you reread what I wrote in May before continuing.

The overall plan was to capture and store some of the aroma fractions in the roasted coffee beans to be used for instant coffee manufacture and add them to the dried soluble coffee immediately prior to packaging, thereby protecting them from the destructive effects of the extraction and drying steps. It was determined that enough of those aroma fractions were dissolved in the small amount of oil coffee beans have and it would be from that oil that the needed aroma fractions would be taken. The first step was to remove some of that oil from some roasted beans. To do this a small fraction of the roasted beans needed for the instant coffee that otherwise would go to grinding were diverted to an expeller, a machine designed to squeeze the oil out of the beans. General Foods had experience with expellers. It used them to squeeze oil out of raw coconut. An expeller is basically a screw conveyor type machine with a restricted outlet and a porous (inner) shell. The restricted outlet causes the pressure inside the expeller to rise enough to squeeze the oil out of whatever solids are fed to the machine. The oil leaves the expeller via the porous shell and the spent solids through the restricted outlet at the end of the machine. With coconut it is relatively easy since the feed is more than half oil. With coffee it was much more difficult because the oil content was very small. Indeed, the oil in fresh roasted coffee beans is less than that in the spent solids when coconut is the feed. Expellers have two shells, the inner porous shell and an outer solid shell. The liquid squeezed out of the solids passes through the inner shell and collects at the bottom of the outer shell. With coconut it squirts out rather violently; with coffee it oozes out. I had been told that the pressure inside the inner shell with coffee was in the range of 100,000 psi. I had no way of confirming that number nor did I know how it was "estimated." It retrospect it seems hard to believe, but in 1957 I was a very different engineer than I now am.

The oil collected was divided into two parts, a 20% part and an 80% part. The larger part was charged to a "still," a mantel heated vertical tank in which the aroma fractions were removed from the liquid by evaporation at one Torr and sublimed on a cold finger cooled by liquid nitrogen. It was a batch operation at the end of which the cold finger was removed and submerged in that 20% part of the oil that did not go into the still. A tiny amount of this enriched oil was added to each jar of Instant Maxwell House Coffee before it was securely sealed. I didn't work on the still and in 1957 I really didn't understand the challenge of operating at one Torr.

The aroma fractions were easily oxidized and the entire operation from the expeller to the jar was done in an oxygen free atmosphere. When a jar was opened it did, indeed, smell like regular coffee but the effect only lasted about 15 seconds, which was acceptable to the marketing people. I have no idea if all this had any effect on sales.

There was a real downside to inclusion of these steps. The coffee that went through the expeller was ground to a very fine powder that could not be processed in the extraction columns because it caused them to plug up, but it could not be discarded because it still contained all its water soluble materials. The approach to this problem was to pelletize the powder from the expeller along with the fines from the grinding of the ~95% of the roasted beans that didn't go though the expeller. Previously those fines had not been separated. This added a sifting step in addition to the pelletizing step.

Pelletizing helped, but the effect was far from perfect. Dealing with excess pressure drop in and outright plugging of the extraction columns continued to be a problem for as long as I worked for the company (1957 - 1960).

I do not know how long Maxwell House continued to do this. I visited the Hoboken facility several years later to meet with some friends I had there and found things very different. Security considerations prevented me from learning exactly what had changed but at least some of the instant coffee operation had been moved out and relocated to the company's Texas facility. In 1957 Maxwell House had four facilities: Hoboken with five trains of extraction columns, Texas with four, and Florida and California with two each. At least some operations had been move from NJ to TX because at least for some of the Instant Maxwell House Coffee freeze drying had replaced spray drying; freeze drying needed a lot of electric energy; and the cost of electricity in NJ had made it economic to shift operations to TX. Freeze drying treated aroma fractions much more gently than spray drying did.

ANNOUNCEMENT OF THE 2ND ANNUAL STUDENT PRESENTATION COMPETITION

Noah Meeks

The Virtual Local Section (VLS) is proud to announce our second Student Presentation Competition. This event celebrates and rewards students for their extracurricular engineering work or research experiences. Unlike many competitions which focus on research projects, this competition is expressly open to the many students with industrial or commercial co-op or internships assignments. We encourage these students to present on the technical details of their work, even if it is not considered original research.

Qualifications:

- Undergraduate chemical engineering student
- Not received engineering bachelor's degree before December 2016
- Participated in co-op rotation, internship, or research project during spring or summer 2016

This competition involves two phases: first, participants should submit abstracts which will be blindly judged by volunteer members and officers of the VLS; and

second, six finalists from the abstracts will be asked to present at the September VLS meeting (online, of course), where judges will select three winners. Presentation at this meeting is mandatory in order to be considered for an award.

Presentations should be less than 10 minutes and will be judged by practicing chemical engineers using the following criteria:

• Application and demonstration of chemical engineering principles in the students' work

• Understanding of the process and underlying chemistry and physics

• Clarity and appearance of slides and presentation

• Understanding how the student's work could be used, applied, or extended into other applications and industries

• Ability to answer questions (in presentations)

Timeline for competition:

- May 22 – online submission form available
- July 22 – abstracts due
- mid-late August – notification of finalists
- mid-September – presentations due
- September-October – "dry runs" will be scheduled for finalists to familiarize with WebEx platform
- October VLS meeting with finalists (8 PM USA Eastern Daylight time)

Contact Noah Meeks, VLS Past Chair, with any questions: NoahChemE@icloud.com

ATTENDING A VLS MEETING

- **Join by internet:**
  - https://aiche.webex.com/mw3000/mywebex/default.do?siteurl=aiche
  - Search for VLS or by meeting number 635 888 409 (March) 634 167 017 (April)
- **Join by phone:** Access code: 634 167 017
  - 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 Local 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.

JOB OPENINGS

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Disclaimer: *Positions listed here have been contributed by VLS members and are listed in good faith as a courtesy to interested VLS members. The AIChE, the VLS, and VLS Newsletter staff are not responsible in any way for the content or veracity of the ads, or for the conduct of the employers or the recruiting agencies. Posting these ads is not an endorsement of the companies or the recruiters, nor is it a guarantee that these positions are still open or will be filled*.

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Nicholas Meyler, nickm@wdsearch.com of Wingate Dunross Inc is seeking good strong matches for several openings. He writes:

Attention Fellow Engineers and Scientists: I have two outstanding career opportunities available.

(1) Senior Manager, Manufacturing Automation Technology

Position Overview: (Harrisburg, PA)

My outstanding $13 Billion client has an opportunity for a strong Manufacturing Automation Technology leader capable of establishing global automation platforms in a leading electrical

component manufacturing company. This individual must have the expertise to lead the next generation automation technologies with fundamental knowledge in some of the following areas:

- Assembly
- Programmable logic controllers
- Linear drives
- Robotics
- Machine vision
- Electronics packaging
- Laser machining
- Sensor manufacturing automation
- Low cost / flexible automation
- Integration of advanced manufacturing to design engineering systems

This is a unique opportunity to join a high performing organization in a new global role, reporting directly to the Vice President of Technology & Advanced Manufacturing. This role will be a focal point of technical expertise on next generation automation technologies, establishing assembly strategy, and platforms for company's manufacturing sites worldwide.

Responsibilities & Qualifications:

Key Responsibilities:

- Creating and managing the cross-business automation technology strategy and road maps to define, innovate, and implement the technologies the company businesses will need to be successful. Working with the businesses and cross-functional assembly automation center of excellence team to define and to implement the lab and advanced automation development projects.
- Innovate and develop the next generation of automation platforms and standards for assembly processes. Identify what technologies should be sourced internally or externally.
- Establish an advanced automation technology strategy, assisting and measuring its implementation and the results of the implementation.
- Continually monitoring automation technologies and market trends and company business strategies to seek new automation technology opportunities that may be appropriate, but are not currently addressed, and to execute such strategies to capitalize on the opportunity.
- Significant involvement in automation opportunities allowing for the seamless transition of new products to assembly facilities.
- Working with intellectual property (IP) managers and legal teams to innovate and to

strengthen IP strategies and portfolios in manufacturing automation technology.
- Shared responsibility for capital budget for automation for the global assembly and automation department.

Key Requirements:

- Strong leadership with demonstrated experience and a track record of deploying new automation technologies among collaborative and matrix teams
- A minimum of 7 years of operational and/or technical experiences within manufacturing automation with a detailed knowledge of current automation technologies for precision electromechanical manufacturing and/or sensor manufacturing
- Excellent commercial and business acumen with deep experience in analyzing supplier technologies and capabilities
- Adept at the integration of engineering design systems to manufacturing automation systems for various volume and mix combinations
- Experienced in the development of specific automation manufacturing systems incorporating flexible automation
- Ability to communicate vision and inspire people at every level to deliver and execute the automation strategy of the Technology organization
- Must be able to manage by influence and coordinate cross business unit activities

Minimum Professional Background Desired:

- Demonstrated track record of successfully and effectively driving change in automation through technological improvements
- Experience in Engineering Integration and Technology Operations
- Strong global industrial automation experience, specifically China
- Willingness to travel, to support a global technology organization with presence in all regions
- BA/BS degree in an Engineering or technical discipline required
- Advanced MS/PhD engineering degree desired

Personal characteristics of the individual:

- Persuasive leadership style and motivating management skills; experienced transformational growth leader with a passion for automation and an inventive curiosity;
- High level of initiative and drive with a strong sense of urgency and accountability; energetic, proactive, and hardworking so as to lead by example;

- Strong communications skills; must demonstrate an open, honest, and transparent communication style with excellent interpersonal skills; ability to explain complex topics concisely to non-technical audiences;
- Excellent judgment and experiences in an environment which requires emotional maturity, politically savvy, and the personal ability to interact with all types of personnel at varying levels;
- Keen business judgment; demands excellence and sets high standards for self and others; high-level of intellectual curiosity combined with strong problem-solving and analytical skills;
- Willingness and personal style to be a team player and foster a team environment, with the capacity and aptitude to serve as a leader in motivating and inspiring others;
- impeccable ethics and integrity.

(2) Senior Device-Physicist for QD-based Solid State Displays

Another of my clients (different from above) is a high-energy start-up company in beautiful and sunny Gainesville, Florida with ties to the University of Florida. They are the world leader in developing next-generation display and lighting technologies, based on semiconductor quantum dots and other proprietary nanomaterials, called quantum dot light emitting diodes (QLEDs). Their technology is sought after by major display manufacturers world-wide and poised to become the dominant method for producing vivid colors with the low power consumption in mobile phones, flexible and transparent televisions and many other display and lighting technologies.

Job Description

The Senior QLED Device Physicist will be responsible for the fabrication of proprietary quantum dot-based light-emitting diode (QLED) test structures for next-generation display and lighting technology. He/she will work with other Research Engineers and Chief Scientist to develop a complete understanding of QLED failure modes and numerous novel physics phenomena occurring inside the device stack including charge build-up, charge balance, and spectral shifting. The well-qualified candidate will have a solid background in semiconductor materials science and physics, chemical safety and hygiene, team-oriented experimentation, vacuum technology, and technical presentation and writing. A successful Senior Device Physicist must be willing to work in a high impact, fast-paced research environment with extended hours as necessary to make an impact on the world.

Primary duties

Key Responsibilities:

· Hypothesize and test new physics phenomena in the QLED device stack, analyze the results in

great detail, and iterate on the experiments to develop a full physical understanding of advanced device phenomena including charge build-up, charge balance, device and QD failure modes, color shifts, and encapsulation
· Leverage knowledge in OLEDs and/or QLEDs and/or OPV to generate experiments and develop physical intuition.
· Make recommendations concerning the development, documentation and performance of production processes.
· Maintain a safe and clean working environment
· Perform other duties as required
· Work overtime as needed

Job Requirements:

Educational: Ph.D. in Physics, Materials Science/Engineering, Electrical Engineering, or closely related field.

Required Knowledge and Skills:

- 3-5+ years of hands-on OLED or QLED device physics research experience, including spincoating, thermal evaporation, sputtering, LJV, lifetime testing, other optical and electronic testing, failure mode analysis, surface and interface analysis.
- Proven track-record of developing new optoelectronic measurement techniques and/or applying current techniques to new classes of problems where there is little or no information available in the literature.
- Material analysis techniques (AFM, Profilometry, UV-Vis, Photoluminescence, TEM, SEM, XPS/UPS)
- Quantum dot physics and chemistry knowledge
- Independently formulates work plans, good written and oral communication skills, highly organized
- Detail oriented, sense of striving for a higher value, and performs well under pressure

Desired Knowledge and Skills:

- Advanced device physics and materials analysis characterization techniques is an advantage
- Software: LabVIEW, MATLAB, Origin

If you are interested in any of these excellent opportunities, please contact me with a resume and cover letter explaining which position is best for you and why. I always accept

resumes, but am especially interested in finding good strong matches, as well as any referrals and recommendations that you may have to offer.

Best Regards,

Nicholas Meyler
GM/President, Technology
Wingate Dunross, Inc.
<nickm@wdsearch.com>
Ph (818)597-3200 ext. 211

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Domari & Associates, Inc. is seeking candidate with the experience below:

Our client is looking for an Environmental Services Lead & Office Manager to join their team. They are a nationwide company with a strong and growing footprint. The right candidate will have the following:

- Bachelor's, Master's preferred
- 15+ years' environmental experience
- PE or PG
- Excellent writing skills
- Strong leader
- Business development experience in South Florida

Interested? Contact Kristi Pearson, Executive Recruiter

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135 Triple Diamond Blvd.
North Venice, FL 34275
941-488-4440 Ext. 314
941-488-4450 (Fax)
877-Domari1 (Toll Free)
www.Domarijobs.com

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Senior Project Manager Commercial/ Site Development – Austin TX

Overview: This senior level civil engineer will be responsible for leading project teams on major commercial land development projects.

Responsibilities: The planning, execution and delivery of the engineering aspects of land development projects as well as develop and maintain excellent working relationships with clients and engineering partners.

Qualifications: As the successful candidate, you will have a Bachelor's degree in civil engineering and be a registered Professional Engineer (P.E.) in the state of Texas. A minimum of 15 years' relevant experience and demonstrated ability to successfully lead multiple project teams. Experience within Central Texas is preferable.

Civil/Structural PE - Raleigh, NC

Candidate should have 8+ years of experience in the construction industry. Although experience in the area of either roofing and waterproofing consulting or building assessments is a definite plus, we are willing to train you in the specialized area.

- 8+ year's experience, with preference in the area of either roofing and waterproofing consulting, or building assessments.
- Must be a licensed Professional Engineer in the state of operations or the ability to get licensed through comity.
- Experience in the development of plans and specifications, with experience preference in building envelopes
- Excellent communication skills
- Proficient in Microsoft Office and AutoCAD
- Experience in performing surveys, with preference in building envelope and/or facilities assessments
- Registered Roof Consultant or Registered Waterproofing Consultant certifications a plus, or willing to obtain these certifications
- Must be able to travel, climb ladders, and perform duties associated with building envelope evaluation, design, and construction administration services

Civil/Structural PE – Greenville, SC – Atlanta, GA (2 positions)

4+ year's experience, with preference in the area of either roofing and waterproofing consulting, or building assessments.

- Must be a licensed Professional Engineer in the state of operations or the ability to get licensed through comity.
- Experience in the development of plans and specifications, with experience preference in building envelopes
- Excellent communication skills
- Proficient in Microsoft Office and AutoCAD
- Experience in performing surveys, with preference in building envelope and/or facilities assessments

· Registered Roof Consultant or Registered Waterproofing Consultant certifications a plus, or willing to obtain these certifications.

· Must be able to travel, climb ladders, and perform duties associated with building envelope evaluation, design, and construction administration services.

· Structural engineering experience a plus.

Civil Senior Project Manager - Commercial/Site Development – Austin, TX

Responsibilities:

- Prepare proposals and client agreements
- Lead and oversee design and technical aspects of the team(s) projects
- Develop and maintain professional relationships with business and community leaders
- Coordinate and monitor project tasks, budgets and schedules
- Responsible for the technical and professional development of project team(s)
- Participate in the development of company design and production standards

Qualifications:

- Bachelor of Science degree in civil engineering from an ABET accredited college or university
- Professional Engineer (P.E.) designation in the State of Texas
- 15 years' experience managing large commercial projects from cradle to grave including estimating costs of technical tasks in commercial/site development; at least 10 of those years managing projects
- Central Texas experience and contacts are a plus
- Extensive knowledge of design and construction practices
- Proven ability to effectively communicate, both oral and written skills
- Proven ability to lead a team of professionals and engineers
- Actively involved in professional associations and civic organizations

Senior Structural Engineer – Downers Grove, Ill

· Help build a structural engineering business in Downers Grove, IL

· Have extensive Industrial Market knowledge

· The ability to lead efforts in acquiring new industrial clients and develops proposals, participates in interviews, and develops business development initiatives.

Structural Engineer – Bloomington, Ill

- Licensed structural engineer (Illinois SE)

- Superstructure & equipment foundation design
- RISA, AutoCAD and Revit experience.

Structural Engineer - Cedar Rapids, IA

- Licensed engineer or have the ability for licensure within one year
- Structural design experience using concrete, steel and masonry
- Experience using Revit

· Direct and assist in the production of construction documents, including #D model generation and detailing.

Civil Engineer Water/Waste Water - Bloomington, IL

- Build client relationships
- Mentor and lead design staff
- Lead project teams to achieve client objectives.

QUALIFICATIONS:

- Civil engineer with a minimum of ten years of experience
- Experience focused in water, waste water, transportation and/or other municipal projects
- Ability to develop and maintain great client relationships
- Must be able to be a licensed engineer in the state of Illinois
- Proven results in developing new clients.

Mechanical & Plumbing Designer/Engineer – Atlanta Area

Complete designs, preparing plans, and specifications for new and renovated buildings. Projects include office, retail, restaurant, multi-family, medical/dental office, hotel, education and churches.

Design Duties include:

· Plumbing designs for hot and cold water, waste and vent, and storm water systems.

· Sustainable design for systems such as water reduction, grey water collection, and rain water collection.

· Design of specialized piping systems for Grease Separation, Compressed Air, Medical Gas, and Natural/LP Gas.

· Process Piping Systems for Industrial and Laboratory (Acid Waste/Neutralization) applications.

Requirements:

· Education: Engineering degree required.
· PE or EIT helpful but not required.
· Experience in some or all of our project types.
· Completed a minimum of 10 projects with ACAD 2010 or newer and Revit.
· Minimum of 2-5 years experience as a Plumbing Designer in building designs.

Electrical Designer (EIT or PE) – Atlanta, GA.
Qualifications:

- Electrical Designer with 5-10 years' experience in projects involving small to medium sized ($1M to $10M) renovations in military hospitals and clinics, EIT or PE.
- AutoCAD Revit, standard MSOffice software, power, lighting, and special systems layout and design, with some travel involved.
- Must have a minimum of a Bachelors degree in Electrical Engineering
- Experience in Healthcare facilities projects highly preferred
- Must have active EIT or PE registration.

Electrical Engineer - Moline, IL and Iowa City, Iowa (2 positions)
REQUIRED EXPERIENCE:

- Design lighting and power systems for industrial facilities
- Prepare drawings, specifications, submittals, and construction administration
- Excellent interpersonal, written, and verbal communication skills
- Thorough knowledge of NEC Codes
- Proficiency in using Microsoft Word and Excel
- Knowledge in the workings of industrial control systems
- Proficient with SKM Power Tools software
- Ability to provide direction to designers and CAD technicians
- Knowledgeable with the use of AutoCAD and REVIT
- Participate in marketing activities
- Contribute to several projects simultaneously.

If you have an interest in these opportunities, please reply to this email with a copy of your resume.

If you know anyone that would be a fit for these opportunities, feel free to relay my contact information.

If you no longer wish to receive these notices, please reply to this message with the word, "unsubscribe" in the subject field.

There is never a fee to my candidates (the hiring firm pays my fee).

Kind Regards,

Mr. Kelly Mitchell
Senior Corporate Recruiter
502-396-6760
kelly@kellymitchell.net