



AICHE NEWSLETTER



American Institute of Chemical Engineers



CO-OP EXPERIENCE

Sheree Clendening

Bara'a Bizri is a senior member of AIChE graduating in the spring of 2019. He completed a co-op with Toyota at their facility in Michigan from January to May 2018. He was a materials engineer intern at the end of the fiscal year for Toyota. His project deadlines when he

first arrived were the middle of February which gave him a little less than a month to complete his first three projects. Bara'a tested development of exterior materials to introduce into new vehicle models. This included working with different groups trying to discover polymer molecules that would withstand wear and tear for 10-15 years. He enjoyed being able to use a wide skill set to complete the variety of projects that he was assigned during his time with Toyota.

Bara'a on the team to develop the next gen model of the Toyota Tundra. Being a material science intern, he focused on discovering new materials to implement into the new model that will be introduced in the next five years. His favorite aspect of the project was the benchmark. Toyota buys the competitor vehicles like the Ford F150 and they would disassemble the entire vehicle and categorize all of the materials for comparison. During the benchmark, other types of vehicles such as high-end sports cars were also tested. A Ferrari and Tesla were bought in and taken apart. Bara'a enjoyed being able to see the complete car turned into nuts and bolts at the end of the disassembly. The goal of the benchmark is to make sure that the new vehicle model will only be slightly better than the competitor to make sure that the company is not spending extra money over or under engineering their products.

While the companies that poach student from Tech are great, Bara'a decided he wanted to work in a different industry to the typical companies advertised at Texas Tech. His advice for students who are interested in atypical industries is to spend time networking outside of Texas Tech. There are professional groups such as the Society of Women Engineers (SWE) and the National Society of Black Engineers (NSBE) that hold national conferences with job fairs where companies are actively trying to hire interns and full-time candidates.



PROFESSOR HIGHLIGHT

Ishpinder Walia

Dr. Vaughn has been a professor in the chemical engineering department since 2000. After obtaining his BS in chemical engineering, he went into the industry to work for DOW Chemical and Schlumberger for a combined total of 15 years. He worked in the R&D department but eventually wanted to further his education since he felt inadequate with the knowledge he had received in his undergrad regarding R&D. Therefore, Dr. Vaughn took a leave of absence and received his Ph.D. in Chemical Engineering from Texas A&M University. Realizing that he didn't want to continue doing the same craft after receiving his Ph.D., Dr. Vaughn officially quit from his industry career and then went on to continue his education with a Postdoc at UCLA. Dr. Vaughn currently teaches Thermodynamics I and does the same course in Seville, Spain. However, he has taught courses ranging from seminar to graduate level fluid dynamics. He strives for his students to understand why a process is occurring rather than being concerned about "what equation I should use" for this process diagram.

Interfacial transport is the focus of Dr. Vaughn's research. He is interested in capillary condensation in microscopic pores, a phenomenon where liquids condense at a temperature higher than their saturation temperature.

Dr. Vaughn wants to apply this knowledge to manufacturing chips to make them easier to clean and allow for less manufacturing issues among small geometries within the chips. Though he normally works with graduate students, Dr. Vaughn is interested in taking 1 or 2 undergrads to work in his lab, but with the warning that the tools they will be working with will be advanced and will require much time to understand. Simply, it will be an intense but rewarding process!



MEME OF THE WEEK

