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Wednesday, April 9, 2025, 2:30 to 3:30 PM
CSU Washkewicz College of Engineering, Room WH-405

A Career Journey in Chemical Engineering



Abstract: Dr. Andrew Zak will share his Chemical Engineering journey from CSU to Lubrizol.

Bio: Andrew graduated with his Bachelors and Masters degrees in Chemical Engineering from the Washkewicz College of Engineering at Cleveland State University. He completed his Undergraduate Honors and Masters theses in Dr. Joanne Belovich's lab, where he validated a four-point mechanical load bioreactor testing system and utilized fluorescence spectroscopy and imaging techniques to quantify diffusion and convection of small molecules in canine tibia. Notably, Andrew and his senior design team won the 2014 AIChE National Design Competition, developing an alternative manufacturing process for the production of influenza vaccines using cell culture with the goal of replacing the traditional egg-based platform.

Inspired by his senior design project experience, Andrew went on to earn his PhD in Chemical Engineering from the University of Michigan at Ann Arbor, MI where he led several projects improving the yield and quality of virus-like particle (VLP) vaccines against respiratory viruses with pandemic potential. He helped develop the first influenza virus-like particle vaccine produced in yeast that protects mice from lethal influenza challenge. Toward improving immune response evaluation, he utilized mass cytometry (CyTOF) to perform high dimensional characterization of the influenza immune landscape in mice, and expanded the functionality of the CyTOF panel to include influenza-specific markers, enabling viral infection and replication properties to be explored in >20 canonical immune cell types.

After graduating Dr. Zak started his industrial career as a Research & Development Scientist II at Hikma Pharmaceuticals in Bedford, OH. Here he developed a broadly-applicable quantitative risk analysis to determine appropriate test specifications for drug products considering incoming API properties, drug product batch-to-batch variability, and instrument sensitivity. He designed simple, high-throughput tests to help probe questions and solve investigations related to particle size of suspensions. He further planned and executed wet ball milling trials to determine effect of process parameters on the final properties of nanosuspensions. Presently Dr. Zak is with Lubrizol as an Oral Care Applications Scientist at their Brecksville location.



(L-R) Mike Galgoczy (CLE AICHe Chair) introduces Dr. Andrew Zak



(L-R) Dr. Andrew Zak receiving CLE AICHe Steering Committee Appreciation Letter from Mike Galgoczy (CLE AICHe Chair)

CLE AIChE: Cleveland Chapter

Fall 2024 – Spring 2025 Program Planning

(as of Apr2025)

Month	Topic, Speaker	Location	AIChE Officer Responsible
September 7, 2024 (6 PM)	Oktoberfest Social Event	German Central Farm, Parma	Joe Yurko, \$7/guest admission + \$ food & beverage free for CSU AIChE students. https://germancentralfoundation.com/oktoberfest
September 11, 2024 (Wednesday 2:30 – 3:30 PM)	Dr. Yu, CSU, IEEE Quantum Computer	CSU, Engineering CSU AIChE & IEEE Students	Joe Yurko & Dr. Gatica, Dr. Holland, Members: \$10; Students: Free CLE AIChE: Pizzas & Beverages
October 10, 2024 (Thurs. 6 PM)	M.W. Wilson Company Steam Safety Class & Tour	M.W. Wilson Company 2579 Center Road Hinckley, OH 44233	Joe Yurko, Jeff Wilson, Dinner provided by M.W. Wilson Co.? M.W. Wilson Co.: 330-225-0663 https://www.wmsilsoncoinc.com
October 2024 (6 PM) Wed, 16 Oct 2024 Wed, 30 Oct 2024 Wed, 06 Nov 2024	Chemical Process Safety Analysis Seminars: by Gurmukh Bhatia, CPSA	Strongsville Fire Dept. Ward 1 Community Rm 11297 Webster Road, Strongsville, OH 44136	Joe Yurko, Dinner cost is included in the seminar expense. Seminar expense: \$25 per session with a total of 3 sessions. Certificates will be awarded for each class as well as a final certificate. sfid: 440-580-3210:
November 13, 2024 Wednesday (4:00 – 6:00 PM)	Benjamin A. Horwitz "Portrait of a Chemical Engineer" Career Discussion with students and professionals	CSU AIChE Section Joint Meeting, Washkewicz College of Engineering AIChE Chap	Joe Yurko, Dr. Gatica, Dr. Holland, CLE AIChE Meals: Professional members: \$10; Students: Free CLE AIChE: Pizzas & Beverages
December 17, 2024 (6 PM)	Nuclear Power Accident Analysis, Speaking: Andrew Otrabalo, Vistra Life Cycle Manag. Fleet Engineer	The Sanctuary, Rockside Road Independence, 44131	Joe Yurko, Dinner menu ordering for professional members; Students cost: \$5 http://places.singleplatform.com/shulas-steak-house-8/menu#menu_5599999
January 28, 2025 (6 PM)	SARTA Hydrogen Fuel Cell Bus Fleet Expansion Funding from DOE ARCH2 Award, Kirt Conrad CEO	Burntwood Tavern Fairlawn, Akron Rt.18 and I-77	Joe Yurko, Dinner menu \$26 ordering for professional members; Students cost: \$5 Lobster Bisque Soup or House Salad Salmon Salad, or Angus Burger, or Fish & Chips
February 27, 2025 (6 PM): Cancelled March 13, 2025 (6 PM): Rescheduled March 26, 2025 at CSU (5:30-9 PM)	1978 Diamond Shamrock plant Fortran Simulation Startup Presentation Speakers: Dr. Fowler, Dr. Harvey Benjamin A. Horwitz, Seminar "The Good, The Bad, & The Ugly" Chemical Process Simulation	The Sanctuary, Rockside Road Independence, 44131 CSU Student AIChE, Seminar WH-405, Washkewicz Hall March 26, 2025; 5:30-8 PM	Joe Yurko, Dinner menu ordering for professional members; Students cost: \$5 http://places.singleplatform.com/shulas-steak-house-8/menu#menu_5599999 Mike Galgoczy & Joe Yurko: Dinner: Pizza, professional members: \$10; Students: Free. AIChE Students to bring their PCs for workshop with simulation case studies
April 4, 2025 at CWRU (12 noon – 2 PM) April 9, 2025 at CSU (2:30 – 3:30 PM)	Benjamin A. Horwitz, Seminar "The Good, The Bad, & The Ugly" Chemical Process Simulation Andrew Zak, Speaker: Academic Career Path with ChE PhD (CSU Alumni)	CWRU Student AIChE, Seminar AWS-349, AW Smith Building April 4, 2025, 12 noon-2 PM CSU Student AIChE, Presentation WH-405, Washkewicz Hall April 9, 2025; 2:30 – 3:30 PM	Mike Galgoczy & Joe Yurko: Dinner: Pizza, professional members: \$10; Students: Free. AIChE Students to bring their PCs for workshop with simulation case studies
April 2025 (6 PM)	NEOSEF Awards Banquet	CCPL Branch Library Parma, Snow Road	Joe Spagnuolo, Moderator NEOSEF Students, CCPL Branch Library Dinner: Pizza, professional members: \$10; Students: Free
May 20, 2025 Tuesday (3 PM)	Tour of Perry Nuclear Power Reactor Simulator and Plant	Perry Nuclear Power Plant & Simulator Tour 18 visitors	Ray Zucker, Joe Yurko and Mandy Nagle (Vistra, Communications) Simulator Tour; Nathaniel Kehn and Jacob Mikulic: Perry Nuclear Plant Peripheral Systems Tours.



Cleveland Section 017 of THE AMERICAN INSTITUTE OF CHEMICAL ENGINEERS Steering Committee 2024 - 2025

