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## AIChE 35 Under 35: The Newest Class of Award Winners is Driven, Diverse, and Engaged

September

2020

The AIChE 35 Under 35 Award honors engineers under the age of 35 who have made significant contributions to the Institute and to the chemical engineering profession. AIChE and the Young Professionals Committee (YPC), with support from the AIChE Foundation, are recognizing this year's 35 outstanding young AIChE members.

The AIChE 35 Under 35 Award was founded to recognize young chemical engineers who have achieved greatness in their fields. The winners are a group of driven, engaged, and socially active professionals, representing the breadth and diversity that chemical engineering exemplifies.

Award winners were selected for their achievements in one of seven categories: bioengineering, chemicals and materials, education, energy and environment, innovation and entrepreneurship, leadership, and safety.

In addition to this article, the awardees will be highlighted on the ChEnected blog and on AIChE's social media outlets with the hashtag #AIChE35Under35. The AIChE 35 Under 35 Award recipients will also be celebrated at the 2020 AIChE Annual Meeting. Each honoree

will receive \$500, a commemorative plaque, complimentary registration for the 2020 AICHe Annual Meeting, and publicity in AICHe media.



Biointeering



Chemicals and  
Materials



Education



Energy and  
Environment



Innovation and  
Entrepreneurship



Leadership



Safety



**Milad Abolhasani, 33**

**Assistant Professor**

**North Carolina State Univ.**



Abolhasani's team studies flow chemistry strategies. Recently, they developed an AI-based decision-making platform called Artificial Chemist that uses modular microfluidic reactors to accelerate materials R&D and manufacturing. Creating the system took almost 3½ years, more than ten design iterations, and the development of three novel pieces of technology. Abolhasani's favorite movie is *The Matrix*, and he is a big fan of high-tech gadgets.



**Aaron C. Anselmo, 34**

**Assistant Professor, Univ.**

**of North Carolina at Chapel Hill**



Anselmo's research program focuses on developing delivery systems for living biological therapeutics to improve their colonization, control their interactions with the host, and optimize the pharmacokinetic profile of their metabolites. His research has been featured in more than 40 papers and in many prestigious journals. If Anselmo were not a chemical engineer, he would be an archaeologist.



## Jason Ballengee, 34

R&D Manager

PepsiCo



Ballengee currently leads research that applies artificial intelligence and data science to enhance the R&D product innovation pipeline. He has led projects to create novel coating processes and to develop a sensor that measures moisture and sugar content in food products. Ballengee enjoys playing with his two sons, one of whom he delivered himself after his wife's labor progressed incredibly rapidly.



**Omar M. Basha, 31**

**Assistant Professor**

**North Carolina A&T State Univ.**



Basha's primary research interests are the experimental and multiscale modeling of multiphase reactive flow systems, with applications in hydrocarbon conversion and carbon capture and sequestration technologies. Basha also endeavors to learn more about and contribute to reducing educational inequality, a topic that has significantly engaged his interest over the past few years. He also enjoys soccer and chess.



## Teni Rane Butler, 26

Chemical Engineer

Eastman Chemical Co.



At Eastman, Butler has gained experience in process improvement engineering, customer-facing technical roles, and sustainable innovation. She strives to capitalize on her strengths, and is active in AIChE and charitable organizations in her local community. Butler continues to count inclusivity as a core tenet of her career. She also enjoys performing as a singer-songwriter ([@teniranemusic](https://www.instagram.com/teniranemusic)).



## Po-Yen Chen, 32

Assistant Professor

National Univ. of Singapore



Chen's research group focuses on strain engineering in nanomaterials, particularly 2D materials. These strain-induced architectures have high stability and can be applied to next-generation wearable technologies, deformable electronics, and smart soft robotics. Chen was listed as one of *MIT Technology Review's* Innovators Under 35 this year. He is also an animal lover, and is particularly fond of the Shiba Inu.



## Sujit Sankar Datta, 32

Assistant Professor

Princeton Univ.



Datta's research lab studies soft and active materials in complex settings, and is motivated by challenges in clean oil and gas recovery, effective water remediation, and targeted drug delivery. Professionally, Datta is proud to work with the diverse, energetic, and creative team he has assembled. Personally, he is proud to be the father of a 16-month-old girl who never ceases to amaze him.



## César de la Fuente, 34

Presidential Assistant Professor

Univ. of Pennsylvania



De la Fuente leads a machine biology group that aims to develop computer-made tools and medicines that will help combat antibiotic resistance. *MIT Technology Review* named de la Fuente one of the world's top innovators in digitizing evolution to make better antibiotics in 2019. His scientific discoveries have yielded over 75 publications and multiple patents. He also loves books, movies, and playing soccer.



## Catherine Fromen, 33

**Assistant Professor**

**Univ. of Delaware**



Fromen's research group designs therapeutic pulmonary aerosols and preclinical lung models by applying engineering fundamentals, biomaterials, and innovative tools. Fromen strives to disrupt the current paradigm in inhalable medicines, translate her research into the clinic, and train the next generation of diverse, inclusive ChEs. She also recently became a homeowner and got engaged!



## Sarika Goel, 32

Senior R&D Scientist

Honeywell UOP



Goel works in hydroprocessing, where she develops next-generation catalysts for hydrocracking technology, petrochemical applications, and clean fuel production that improves air quality. She highly values education and volunteers at the nonprofit Asha for Education to support the education of underprivileged children in India. Goel is particularly interested in outreach for young girls. She is always in the mood for a cup of traditional, homemade Indian tea.



## **Bryan Goldsmith, 32**

**Dow Corning Assistant Professor**

**Univ. of Michigan, Ann Arbor**



Goldsmith's current research focuses on using first-principles computational modeling to understand and design catalysts and materials for pollution reduction, sustainable chemical production, and energy generation and storage. A first-generation college student, he was inspired by a high school chemistry teacher to pursue chemical engineering. If Goldsmith were not a ChE, he would be an astronaut.



## Juliann Hinske, 27

### Process Safety Manager

#### Unilever



Hinske focuses on the development and deployment of process safety programs for 15 highly hazardous chemical facilities. She was inspired to pursue the field after visiting the site of the Exxon Valdez oil spill and observing its impact. Her biggest challenge has been facing prejudice and disrespect as a woman on job sites, but she deals with this by continuing to deliver results. Hinske can also quote nearly every line of *The Office*.



## **Julianne Holloway, 34**

**Assistant Professor**

**Arizona State Univ.**



Holloway's research group develops biomaterials for tissue engineering applications, and her work has received numerous accolades. Her proudest accomplishment is organizing the Celebrating 20 Years of Women in Chemical Engineering (WIC) Symposium for WIC's 20th Anniversary at the 2018 AIChE Annual Meeting. She also loves the outdoors and is a runner.



## John Andrew Jones, 31

**Assistant Professor**

**Miami Univ.**



Jones studies the genetic engineering of microorganisms for sustainable chemical production. He rewires microbial metabolic processes to enable the production of high-value, natural products with medicinal applications. Jones' work has been published in 21 different prestigious journals and cited more than 1,300 times since 2014. He is a proud Eagle Scout in the Boy Scouts of America.



## Abhishek Kar, 33

**Project Leader**

**Shell Global Solutions U.S.**



Kar's key contributions have helped Shell develop lubricant solutions for various issues concerning internal combustion engines, lubricant foaming and water handling, and oil life. His ultimate goal is to drive competitive advantages in the energy sector through the development of sustainable and affordable clean energy solutions that address climate change. Kar also hopes to explore every U.S. National Park; so far, he has visited six of them.



**George Khoury, 34**

**Light Oils Section Supervisor**

**ExxonMobil**



Khoury most notably developed new tools for inferential modeling technology that are now leveraged by manufacturing sites worldwide. He also received recognition for his innovative

work developing inferentials and supporting manufacturing sites after Hurricane Harvey hit the U.S. Gulf Coast. Khoury would ultimately like to lead his own energy organization. He enjoys trying new foods and spending time with his fiancée.



## **Aditya Kunjapur, 32**

**Assistant Professor**

**Univ. of Delaware**



Kunjapur's research focuses on microbial chemistry using protein and metabolic engineering techniques — he teaches cells to make and integrate amino acids that can stimulate the immune system or respond to light or oxygen. Kunjapur also seeks to improve engineering education and access to it using online platforms such as YouTube. He enjoys traveling and singing karaoke with his wife.



**Danielle Mai, 31**

**Assistant Professor**

**Stanford Univ.**



Mai's team engineers biopolymers in order to advance biomaterials development and enhance fundamental understanding of soft matter physics. They aim to develop artificial muscle-mimetic materials, novel biolubricants, and programmable hydrogels. Outside of the lab or the classroom, Mai enjoys cooking, yoga, and cheering for the Michigan Wolverines.



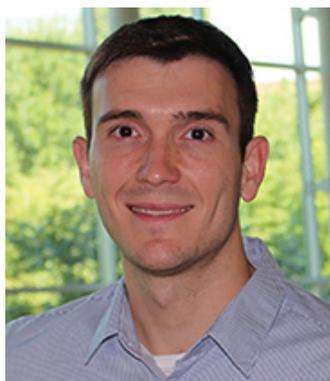
## Karthish Manthiram, 32

Assistant Professor

MIT



Manthiram's lab is developing methods to convert carbon dioxide, nitrogen, and water into diverse chemicals and materials using renewable electricity, to help build a future in which chemical manufacturing is electrified and decarbonized. Manthiram was named one of the *Forbes'* 30 Under 30 in Science in 2018. He proposed to his now-wife with a flash mob on the front lawn of MIT ([www.youtube.com/watch?v=dxGoCgSK6qA](https://www.youtube.com/watch?v=dxGoCgSK6qA)).



## Andrew J. Medford, 33

Assistant Professor

Georgia Institute of Technology



Medford's research focuses on using data science and machine learning to elucidate reaction mechanisms and improve density functional theory calculations. He is particularly interested in nitrogen chemistry and sustainable fertilizer production to help solve world hunger. Medford finds his work deeply rewarding, but further prioritizes family time and makes sure to have dinner with his family nightly. He has also visited all six populated continents.



**Elif Eda Miskioglu, 32**

**Assistant Professor**

**Bucknell Univ.**



Miskioglu identifies as an early-career educator working to promote social awareness and global thinking through her teaching. Miskioglu, who faced challenges as a female engineer,

believes there is still a lot of work to be done in making chemical engineering a more inclusive environment. She strives to help future engineers tackle societal challenges. Miskioglu is the daughter of Turkish immigrants.



## Madeline Mueller, 25

Process Engineer

Koch-Glitsch



Mueller works with global clients in the refining, petrochemical, biofuels, and chemical industries to troubleshoot and optimize existing operations. She provides proposals for distillation column designs and mass transfer equipment solutions. Mueller is also active on AIChE's K-12 Committee and hopes to continue to expand the impact of STEM outreach. She has played violin since age three.



## Greg Newbloom

Founder and CEO

Membrion



Newbloom runs Membrion, a start-up company that manufactures membranes for water purification and other applications. In just four years and with a dozen team members, Membrion has raised \$7.5 million and generated more than \$2 million in revenue, and it has helped save 400,000 gallons of water through its various applications. Newbloom also enjoys cooking French cuisine and traveling with his spouse.



**Babak Rafienia, 32****Senior Sales Engineer****AMACS Process Tower Internals**

Rafienia specializes in separation and mass transfer technologies, as well as designing and troubleshooting separators and distillation towers in oil and gas projects globally. At work, he gets excited about problem-solving and providing guidance to design engineers to resolve complex application issues. Rafienia believes in setting high goals for himself, and at the age of 32, he achieved his long-time dream of performing in a piano recital.

**Amanda Scalza, 30****Production Manager****SC Johnson**



Scalza leads a processing team that makes common household cleaners. She manages half of the company's chemical processing area, where nearly a half-billion pounds of liquid bulk and aerosol intermediates are produced annually. Scalza is passionate about providing products for people across the globe, as well as the fast-paced atmosphere of manufacturing. She is also a certified firefighter.



**Jennifer L. Schaefer, 33**

**Assistant Professor**

**Univ. of Notre Dame**



Schaefer's research group studies ion transport and electrochemical processes in systems for electrochemical energy storage and conversion. The group's main focus is researching

materials for next-generation batteries. She is the faculty founder for her department's Postdoctoral Women's Group, and a wife and mother. If she were not a chemical engineer, Schaefer would want to run a taco stand.



**Amir Sheikhi, 34**

**Assistant Professor**

**Pennsylvania State Univ.**



Sheikhi and his team work to develop affordable technologies to address some of the most pressing healthcare challenges, based on naturally abundant materials with bench-to-bedside potential. Sheikhi strongly believes that the future will be bright if humans come together to solve society's most pressing issues; he hopes to play a role in developing technologies to solve such issues. Sheikhi also enjoys swimming and hosting movie nights.



## Charles Sing, 34

Associate Professor, Univ. of

Illinois at Urbana-Champaign



Sing's research group studies computational and theoretical polymer physics, and his current projects focus on molecular and sequence properties of polyelectrolyte solutions, out-of-equilibrium rheology of semidilute polymers, and polymers with nonlinear architectures. He was recognized as one of *Forbes'* 30 Under 30 in Science in 2015. Sing and his wife have two cats that sit on his notes, books, and laptop while he works from home.



## Kushal Sinha, 34

Engineer

AbbVie



Sinha leads an advanced modeling and simulation group to enhance model-driven process development, and he has guided AbbVie's journey to incorporating cloud computing, machine learning, and AI. He believes that traditional engineering is far from reaching its full potential in terms of computational tools. He also loves experimental cooking, though his wife occasionally scolds him for ruining recipes.



**Zachary P. Smith, 34****Assistant Professor****MIT**

Smith's research focuses on the design, synthesis, and characterization of polymers and porous materials for advanced separation applications in industry. His primary career goal is to reinvigorate the central role of separations in chemical engineering for water purification, carbon emission solutions, pollution reduction, and electrochemistry. Smith also has three children he adores.

**Samanvaya Srivastava, 34****Assistant Professor****Univ. of California, Los Angeles**



Srivastava's research interests combine fundamental intermolecular interactions with molecular engineering and self-assembly processes to improve the design of soft materials. His father, a chemical engineer, owned a manufacturing company in one of the least-developed states in India. Today, Srivastava is proud to be part of an inclusive research community. He is also a beer aficionado.



**Zachary Ulissi, 33**

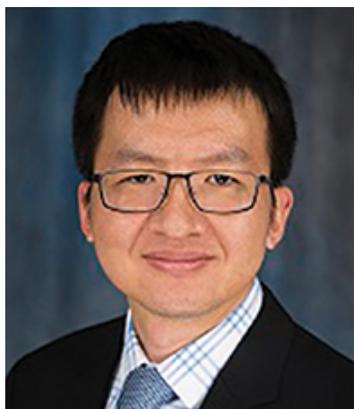
**Assistant Professor**

**Carnegie Mellon Univ.**



Ulissi's group works on the development and application of high-throughput simulation methods, active learning methods, and machine learning models for surface science and

catalysis. He is excited to be part of a wave of young faculty applying data science and machine learning tools to traditional engineering problems. Ulissi is also a competitive cyclist and he met his wife on a collegiate cycling team.



**Zhenyu Wang, 33**

**Senior Datalytics Engineer**

**Dow Chemical Co.**



At Dow's Chemometrics and Artificial Intelligence Group, Wang develops data analytics methodologies to support Manufacturing 4.0 initiatives. He has developed and implemented techniques to solve complex industrial problems in the areas of process monitoring, fault diagnosis, industrial process optimization, and supply chain optimization. His goal is to make the chemical industry more efficient and sustainable. Wang's favorite superhero is Iron Man.



**Yuan Yao, 31**

**Assistant Professor**

**Yale School of the Environment**



Yao's research aims to develop modeling frameworks that integrate chemical engineering principles with industrial ecology approaches for sustainable production of chemicals and materials. She strives to shape the sustainable use of natural resources by developing integrated system tools, with the goal of influencing future policy-making. If she were not an engineer, Yao would love to be a fantasy writer.



## Colin Young, 32

### Variant Assessment Scientist

### Ambry Genetics



Young works on understanding and interpreting genetic changes related to breast and ovarian cancer, helping classify the genetic changes associated with these cancers. His guiding ethos is that his work should have a positive impact on people's lives and that he should always give back to the community. A fun fact about Young is that he has eaten the same exact lunch nearly every day for the last eight years.



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