

APRIL 11, 2025 @ 9:00 AM | 102 COLBURN LAB



## SEAN HUNT

BChE 2011, University of Delaware

**SOLUGEN, INC**  
Co-founder and CTO

### SCALEUP IN THE FAST LANE: FROM IDEA TO SHIPPING 200 MILLION POUNDS IN UNDER 8 YEARS

*More chemical and biomolecular engineers should start/join climate-focused manufacturing companies! Get out of the classroom and climb into a reactor!*

*Chemical and biomolecular engineering is the critical 21st century skillset required to mitigate climate change while simultaneously (1) supporting our farmers (2) creating domestic clean green manufacturing jobs (3) providing better, safer products for our families and (4) supporting our troops.*

*Time is not on our side, and scaleup is the problem. Too many promising technologies never make it out of the lab, and the incumbent industry is dominated by profound cynicism and risk aversion. American dynamism isn't dead; it starts with you!*

*This talk will cover the journey to date of Solugen, which spun out of MIT in 2016 on a mission to decarbonize chemicals manufacturing. Each milestone of our scaleup journey will highlight the interplay between commercial development, financing, and technology/manufacturing readiness.*

*This will be a highly technical talk, crescendoing in a 1500x scaleup of a new enzyme reactor system with 14% error and a new gas lift trickle bed reactor system with 10% error. This culminates in the first commercial demonstration plant, Bioforge®, producing 75 tanker trucks in 40 days at 1500 kg/h and 94% integrated yield, consuming under 1 MWh/ton of product. All of Colburn's greatest hits will make an appearance: the Froude number, Weber number, thiele modulus, finite element methods, the list goes on. Colburn's Top 40s of today will also make an appearance including directed evolution – machine learning of enzymes, gold nanoparticle catalysis, electroseparations, and more!*

*There will be drama. At various points, reactors will be held hostage, ransoms will be negotiated, cease and desist letters served, en masse flea outbreak, abandoned truck search and rescue missions. Through it all, a close-knit team playing the ultimate team sport: new technology scaleup and commercialization.*