

Gavin McIntyre



“Growing Materials: A Case Study in Scaling from the Lab-bench to the Marketplace.”

Ecovative is a biomaterial research and manufacturing company that began in a Rensselaer classroom as a senior capstone project in 2007. Ecovative grows alternatives for conventional plastic foams and resins, which are found in applications ranging from protective packaging to furniture, leveraging the vegetative tissue of mushrooms (mycelium) as a grown glue. In order to meet commercial volumes for Fortune 500 companies, strides were taken early on to develop a scalable, solid-state fermentation system to grow custom molded shapes. This process continues to evolve as new scale challenges are met to enter different markets, but the design philosophy has remained constant; grow more material with less complexity and cost.



THE HOWARD P. ISERMANN DEPARTMENT OF
CHEMICAL & BIOLOGICAL ENGINEERING

presents

DESIGN DAY 2017

special lecture by

Gavin McIntyre

Chief Scientist and Co-Founder
Ecovative Design, LLC



“Growing Materials: A Case Study in Scaling from the Lab-bench to the Marketplace”

Center for Biotechnology and Interdisciplinary Studies
The Howard P. Isermann Auditorium

Tuesday, May 2, 2017 @ 09:00 am
Refreshments will be served @ 08:30 am

Chemical Process Design Poster Presentations

Production of Therapeutic Mineral-Based Sunscreen

Aloe Can You Go: Megan Balfe, Evan Bernstein, Ellery Bourgeois, Richard Villeneuve

Seawater Desalination to Aid Qatar's Water Crisis

Dunder Mifflin Water Company: Annaliese Drechsler, Alyssa Mason, Angelika Rothberg, Tyler Zoltowski

Production of Recycled Paper and Board for Packaging

Ent Recycling: Ian Gaudette, Sarah Jenkins, Vanessa Stone, Anna Wong

L'Étoile du Nord: Ethanol from Sugar Beets

Sugar Tramps: Matthew Cicciu, Madeline Dery, Christine Desplat, Anju Malhotra

Production of Dimethyldichlorosilane Through Müller-Rochow Synthesis for Further Processing

Silicone Inc.: Ashley Flanagan, Areeg Khalil, Nicholas Smieszek, Shannon Symonds

Ammonia Synthesis Utilizing Green Energy

Ammonia Incorporated: Kevin Abel, Jacqueline Curtsinger, Sarah Lucere, Amanda Morin

Indirect Coal Liquefaction

Intelligent Processes, Inc.: Micah Miale, Alexandra Scholz, Alexander Stevens

Supercritical Production of Biodiesel

Coonley Award Recipients: Steve Collins, Tanner Hart, Jason Miller, Mike Wentworth

Are We Done Yeast?

River Bank Brewing Co.: Melissa Feinberg, Jeffrey Sitariski, Jordan Torti, Nickolas Ziter

Production of Beer Concentrate Using Vacuum Distillation

Hoppy Seconds: Weronika Jakubowska, Ray Parker, Kathryn Ranni, Nick Zill

Sugar Cane Processing

Sweet Tooth: Cole Chavez, Maxim Denno, Jason Gilbert, Kiang Le

Stills & Swills Distillery

Stills & Swills: Christine Pennisi, Emily Rabe, Matthew Urruela Stauss, Chuhian Zhang

Feasibility of a High Density Polyethylene (HDPE) Plant

Flaming Thunderwolves Inc.: Alex Holmann, Sam Keller, Matthew Pack, Charles Willard

Coal-Based Methanol Plant Feasibility Analysis

The Clean COALition: Zach Downs, Barry Li, Sam Trevenen, Virag Vora

Production of a Locally Sourced, Craft Apple Vodka

Fermentators: Conner Burns, Kirsten Cardinal, David Marzahl, Barbara Padilla

Amo Co. Ammonia and Carbon Dioxide Production Plant

Amo Co.: Yiming Chai, Harrison Kang, Chelsea Kao, Huihui Tang

A Continuous Process For Aspirin Production

The Free Radicals: Abdulhadi Alijaji, Alexander Anderson, Jordan Mundell, Melanie Todis

An Insight into Large Scale Cheese Production

Barkeeper's Cheese: Amy Kong, Emily Mazeau, Emily Phillips, Brittany Rupp

Bergamot Citrus Processing and Bio-Oil Production

My Chemical Bromance: Shuvankar Banik, Jack Higgins, Nathan Joyce, Jeffrey Schwartz

Chennai Waterworks

A.M. Lumber's Salty Sea Men: Edward Costa, Dominick Groux, Connor Kilgallen, Greg Merrill

Raspberry Chardonnay Ice Cream Production and Plant Design

Ben & Jerry's Angels: Alisa Emag, Alif Imran Rafique, Lauren Rodriguez, Dominique Roubé