Bioengineering Seminar, College of Engineering, University of Toledo

"High-Value Chemical Production using a Modular *E. coli* Polyculture Approach"

Dr. J. Andrew Jones
Assistant Professor in Chemical, Paper, and Biomedical Engineering
Miami University
Oxford, OH

Friday 11/17/17
Where: SSOE Seminar Room, 1027 Nitschke Hall
Time: 11:30 am – 12:30 am

Fermentation-based chemical production strategies provide a feasible route for the rapid, safe, and sustainable production of a wide variety of important chemical products, ranging from fuels to pharmaceuticals. Currently, these strategies have failed to obtain wide industrial utilization due to their inability to economically compete with traditional extraction and chemical production methods. Here, I will introduce a variety of fermentation and genetic-based methods for improving the production of high-value chemicals in the common bacterial host, *Escherichia coli*. I will focus on recently published work using a co-culture technique that has resulted in the first account of *de novo* anthocyanin production outside of plants! Anthocyanins are an important class of antioxidant compounds responsible for the red color in strawberries. We will culminate with a discussion of the current challenges limiting the wide utilization of co-culture engineering and methods the Jones Lab is using to address these challenges.

Biography:

Dr. J. Andrew Jones is an assistant professor in the Chemical, Paper, and Biomedical engineering department at Miami University (Oxford, OH). Prior to Miami, he served one year as a visiting assistant professor of chemistry at Hamilton College (Clinton, NY). He earned his Ph.D. in chemical and biological engineering from Rensselaer Polytechnic Institute (RPI) in 2016. Dr. Jones' research has been highlighted on National Public Radio and in the print publication Chemical & Engineering News. Additionally, his work has been selected for multiple national and international awards including: ACS BIOT Travel Grant, ACS 'Best of BIOT' designation, and a Poster Award at the Metabolic Engineering XI Conference (Awaji Island, Japan). Dr. Jones has published 18 peer-reviewed publications in top journals and has been cited nearly 400 times since 2014. Dr. Jones is a member of the American Chemical Society (ACS) and the American Institute of Chemical Engineers (AIChE).