

Mechanical Engineering Department Seminar

3:35pm February 24, 2016
1130 Mechanical Engineering
111 Church Street SE, Minneapolis, MN 55455

Applying CFD in Industrial Mixing

Christopher Tyler

Lead Engineer; Cargill



Cargill is an international producer and marketer of food, agricultural, financial and industrial products and services. Founded in 1865, our privately held company employs 143,000 people in 67 countries. Cargill is developing, producing and selling a variety of bio-based chemicals. Cargill's range of renewable products are suited to a number of industrial, food and feed applications and markets. Furthermore, Cargill offers our customers a global footprint for co-location services to our integrated bio-refinery assets to create synergies with companies who own and operate their production facilities and produce bio-based chemicals next to our grain processing sites.

Cargill has many large-scale industrial processes that are limited by mixing and aeration. We have found significant performance gaps between lab, pilot, and production scales, occasionally as a result of repurposing equipment. We use CFD to improve our understanding and to improve our operations. We try to apply models that are as simple as possible, but no simpler. We try to find economical fixes to existing processes using commercially available CFD packages. We are constrained by the scale of the problems and the economic reality of process improvement.

Bio: Christopher Tyler is a lead engineer for Cargill. He has 11 years of experience in modeling and numerical analysis. He received his PhD in 2004 from the University of Minnesota, and his BS in 1998 from the University of Utah.