

# New Opportunities Identified at 15<sup>th</sup> Annual Dairy Ingredients Symposium, Feb 21-22, 2013



Approximately 160 attendees from 25 states and 5 countries were treated to Spring-like San Francisco Bay Area weather at this year's 15<sup>th</sup> Annual Dairy Ingredients Symposium where they gained insights on market trends, emerging science and technology, and user needs for dairy ingredients

Here are the "top ten" highlights:

1. Emerging consumer trends and new technological discoveries will drive new dairy ingredients business opportunities for the future. Through the work of the Innovation Center for U.S. Dairy, 20 top trends that have implications on the who, what, when, and where of dairy ingredient were addressed by Dairy Management's Senior V.P. Alan Reed.
2. Innovations in surface modification of polymeric membranes commonly used in dairy processing were reported that could revolutionize the efficiency of these systems. The technology developed by the research team lead by Mark Etzel (Univ. of Wisc.) was found to improve filtration performance efficiency up to five-fold and could allow for better separation of milk proteins (e.g. beta-lactoglobulin from alpha-lactalbumin in whey, or native phospho-caseins from native whey proteins in skim milk).
3. Approaches to reduce fouling of heat and mass transfer surfaces affecting efficiency of dairy ingredient processes look promising. Surface modification used by the research team lead by Julie Goddard (Univ. of Massachusetts) may be promising to reduce heat exchanger fouling. According to this research team, these modifications can result in improved dairy processing sustainability by reducing cleaning costs, lowering energy costs, and reducing pumping costs. Additionally the technology could improve product quality by reducing fouling tendency (accumulation of protein and mineral deposits). A group at South Dakota State University lead by Dr. Sanjeev Anand presented approaches to evaluate more effective ways to clean membrane filtration systems.

4. According to Clay Hough of International Dairy Foods Association, efforts at IDFA are underway to help remove regulatory obstacles to promote innovation that could expand the use of dairy foods and ingredients.
5. Approaches to enhance functional properties of dairy ingredients including heat stability, gelation, foaming, solubility, and sensory quality were presented by groups from University of Tennessee, North Carolina State University, Cal Poly, and South Dakota State University. These presentations elaborated on emerging and currently available technologies that can maximize dairy ingredient functionality for a wide range of food applications.
6. New perspectives on casein structure as it relates to nanotechnology and how this information can be leveraged to develop new casein based ingredients and ingredient functionality was presented by Federico Harte from University of Tennessee. Capitalizing on how we might manipulate the various interactions that can occur at the nanoparticle scale with caseins promises to be a fruitful area of future ingredients development.
7. New innovations in dairy ingredient process equipment and design were addressed by GEA in their presentation on "Total Costs of Ownership". It was noteworthy that differences in what is allowed in United States compared to Europe for manufacturer of dry dairy ingredients does not allow for implementation of some useful innovations globally. The GEA POWDEREYE was described as an effective means to provide online analysis of key powder properties during manufacture.
8. An end-user panel described their experiences using dairy ingredients in current and new product R&D. Tips on what end-users are looking for from dairy ingredients suppliers were shared. Fast, responsive attention to user queries was one key.
9. The alphabet soup of "omics" was deciphered to show how the tools previously thought to just be in a university molecular biology laboratory and now seeing the light of dairy laboratories across the country to shed new approaches to improve our understanding of dairy microbiology, and help processors make decisions related to dairy product quality.
10. Technical poster sessions and other forums that gathered the attendees provided opportunities for research providers and research information users to interact and transfer information to one another.



*The 16<sup>th</sup> Annual Dairy Ingredients Symposium will be held in Winter, 2014 in San Francisco, CA. Exact program and dates will be announced in future newsletter and/or check [www.dptc.calpoly.edu](http://www.dptc.calpoly.edu).*