



## ADPI 2018-2022 Dairy Ingredients Research Priorities

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**Research Program Goals:** 1) Enable dairy ingredients innovation 2) Expand use and applicability of dairy ingredients  
3) Strengthen ability to market dairy ingredients

### Research Objectives:

- 1. Dairy Ingredient Improvements** - Research that can improve understanding and enable industry to use better solutions to enhance/improve value of current dairy ingredients.
  - a. Better/enhanced or new functional properties (e.g. emulsification, solubility, stabilization, sweetness, storage (browning) etc.) of dairy ingredients (protein powders, permeate, lactose products, etc.) with research that can leverage interests in clean label applications via use of chemical, enzymatic or process induced modifications.
  - b. Better understanding of microbiology of dairy ingredients that leads to microbial quality improvement (e.g. control of Cronobacter)
  - c. Understanding and technology innovations to reduce/control process induced ingredient variations (e.g. functional properties or composition) and/or eliminates/reduces incidence of undesirable changes in product (e.g., contaminants like Nitrite, NPE, Furfuryl Alcohol)
  - d. Novel approaches to enhance, improve or identify new health and wellness benefits of dairy ingredients (e.g., hypo-allergenicity)
  - e. Approaches to maximize beneficial bioactivity of dairy ingredients
- 2. Dairy Ingredients Characterization** – Research that can lead to better qualitative and quantitative characterization of dairy ingredients
  - a. More robust, economical (in plant QC lab environments), performance test methods that take advantage of modern analytical techniques – research that can lead to establishment of industry-wide (international and domestic) acceptance of new test methods to replace current practices commonly in use (e.g. WPNI, Scorched Particles, Heat Stability, Moisture, Denatured protein, milk protein fractions, individual milk proteins, etc.)
  - b. Characterization and identification of detailed component composition, bioactivity, and their sources of variation in dairy ingredient streams (e.g. dairy permeates, mother liquor, buttermilk, acid whey, etc.)
- 3. Dairy Ingredients Innovation** – Research that enables industry innovations in product properties, uses, sustainability, and/or methods of manufacture.
  - a. Research that can lead to Innovative value added (nutrition, function, composition, forms) new dairy ingredients (e.g. bioactive peptides, phospholipids, lactose-free)
  - b. Research innovations that lead to new food and non-food uses/applications (e.g., oligosacharrides as prebiotic compounds obtained from milk and/or lactose)
  - c. Use/Development of innovative technologies that can lead to added value dairy ingredients (e.g., lower cost, improved drying, enhanced yields, etc.).
- 4. Enhancement of Marketability**- Market research that can support dairy industry efforts to remove market barriers to accelerate expansion of dairy ingredients use or development of new markets for dairy ingredients including:
  - a. Improved understanding of the price and supply impact of harmonizing US standard from NFDM to SMP
  - b. Removing barriers to greater usage of MF milk and development of “milk whey protein products” (e.g. MF milk use in standard of identity cheeses)
  - c. Lactose market intelligence on best new market opportunities
  - d. Consumer (senior) education on protein consumption benefits