

## **Faculty Position and Research Priority External Brainstorming Session**

During the November 2022 Dairy Innovation Hub Advisory Council meeting, stakeholders engaged in a brainstorming session to reflect on faculty hires across the three campuses and to discuss remaining critical gaps in relevant expertise. Some research areas can be addressed through RFP mechanisms and funded projects, while others would be ideal targets for the final round of faculty hires. This information should be used in conjunction with internal (i.e., campus) brainstorming sessions (to be held in January 2023) and gap evaluations to inform the research areas prioritized below.

### **Stewarding Land & Water Resources**

#### **Crops**

- Plant scientist with focus on agronomy
- Growing crop efficiency when land is in high demand and short supply
- Demand for protein sources

#### **Manure**

- Using manure for renewable energy
- Maximizing manure assets and organics
- Algae and manure collections

#### **Climate/sustainability**

- Addressing climate changes – mega trends
- Regenerative agriculture

#### **Consumer**

- Consumer insights
  - Translate to consumer
  - Return on investments
- Leveraging data within dairy

**Narrative:** Necessity to research ways to improve crop efficiency given that land availability is decreasing and has competitive uses, and needs for crops are increasing. Interest to focus attention on the high demand for soy beans and other protein sources. Strong interest for increased innovative uses of manure by maximizing nutrients to create organic matter, producing more renewable energy, and converting algae from manure components into energy. Desire to address changing climate by examining long-term/mega-trends and researching regenerative agriculture. Lastly, a need to focus on the consumer by leveraging more data opportunities in dairy and translating return on investments to communities.

## Enriching Human Health & Nutrition

### International service

- Economic assesment of opportunities in international markets
- World hunger and global needs for animal protein
- Optimizing products for international target markets
  - Shelf life on exports
  - Connecting opportunities and technology

### Product development

- Food material science for improved shelf life of products
- New product development for international markets
- Food innovation

**Narrative:** Common interest in continued food innovation and new product development for international markets and changing consumer preferences. Interest to address world hunger through global marketing and international target markets by exploring export shelf lives and connecting opportunities with technology.

## Ensuring Animal Health & Welfare

### Managment

- Large herd management
- Life cycle assessment of animals

### Animal

- Dairy x beef animals
- Calf transporation to other regions and sustainability and welfare of calf/heifers raisers

### Nutrients

- Customized animal nutrition to improve efficiency Animal feed yield to essential nutrients
- Nutrient modeling
- Milk quality

**Narrative:** Request for increased studies in large herd management and life cycle assessments. Further exploration of dairy x beef cross growth, carcass quality, and economic diversification. The long-term sustainability and welfare aspects associated with transporting calves. Additional discoveries in nutrient modeling, milk quality, and animal feed to yield essentail nutrients ideal for human products and nutrition.

## Growing Farm Businesses & Communities

### Systems/infrastructure

- Workforce development
  - Redesign workflows for efficiency
  - Re-envision processes
  - Ag HR management (i.e., investment in people)
- Regulations, impact on small and mid-sized farms

### Automation

- Adopt automation and robotics (AMS) to dairy
- Changes to labor as a result of technology adoption

### Sustainability

- Carbon credits and how to implement for farmers

### Community

- Regional direct marketing
  - Local and regional direct marketing
  - Farmer to consumer without retail infrastructure
  - Second-hand exchange (farmer's markets, food stands, ect.)

**Narrative:** Need to investigate labor issues by redesigning efficiencies, reenvisioning processes and focusing on agricultural human resource management. Additionally, more concentration on regulatory measures, emphasis on how smaller farms might succeed amidst trends. Interest to foster more regional direct marketing such as farmer-to-consumer exchange (without retail infrastructure) and second-hand trade of goods at farmer's markets, specialty food pop-ups, and road-side stands. Steady appeal to maintain research in the area of sustainability, particularly surrounding carbon credits. Lastly, more emphasis on changes to labor, lifestyle and farm finances as automation milking systems (AMS) and other technologies are adopted on Wisconsin dairies.