NDSU NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION

SBARE Request: Program support funds for
Precision Livestock Farming at NDSU

We are requesting funding for operating support, infrastructure, and precision livestock farming equipment to position North Dakota as a leader in Precision Livestock Farming.

Our Vision

Modernize North Dakota's livestock industry with **Precision Livestock Farming** (PLF) — smart tools and systems that make production **more efficient, profitable and sustainable**.

Precision livestock farming technologies can help producers:

- During their decision making process for better management of their livestock
- Improve animal health and welfare
- Address workforce shortages
- Create new economic and environmental opportunities

Why It Matters

- **Profitability:** Smarter management saves time and money.
- **Stewardship:** Better resource use and animal care.
- **Quality of Life:** Less stress for farmers and ranchers.

SBARE Request

To achieve this vision, **we need investment in operating funds, infrastructure, and equipment:**

Capital Projects

- Dairy Unit: Heifer barn (65 head), robotic milking stations, automated calf feeding
- Beef Feedlot: 48 feeding pens

Precision Equipment

- Heat-detection collars, cameras, ID tags, climate sensors
- Satellite software for pasture management and livestock tracking

Operating Funds

- Expand research and extension capacity
- Support faculty and lay groundwork for the evaluation and adoption of PLF systems

Producer Demand

Results of a recent survey of North Dakota producers show strong interest in:

- Virtual fencing
- Automated barn systems
- Animal health alerts
- Feed and water monitoring

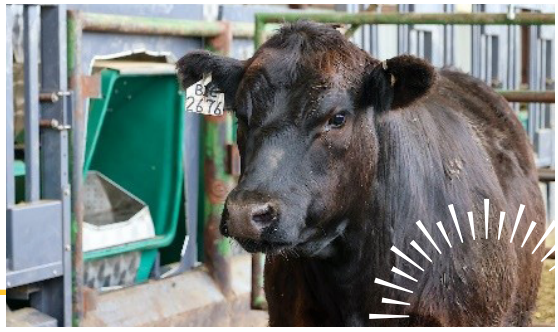
Expected Impact

- **Net Savings** by decreasing labor, improving production efficiency, and reducing inputs:
  - Beef cow-calf (200 cows): $20K–$35K/year
  - Beef feedlot (1,000 head): $40K–$60K per turn
  - Dairy (500 cows): $75K–$100K/year
  - Swine (2,400 head): $20K–$40K per cycle

The Big Picture

This investment will:

- Leverage smart facilities and private 5G networks.
- Apply AI and sensors for real-time monitoring.
- Support and promote the modernization of livestock production and workforce development statewide.



For more information: Dr. Guillermo Scaglia, Department Head
Department of Animal Sciences | 701-231-1859 | guillermo.scaglia@ndsu.edu

For more information: Dr. Leon Schumacher, Department Chair
Department of Agricultural and Biosystems Engineering | 701-231-5173 | leon.schumacher@ndsu.edu