

## **NIBSI Strategic Planning Phase One**

### **Research Bullseye Concepts Informing Phase One Recommendations:**

- Develop prescriptive mating and management plans based on GxExMxS for a broad array of production and marketing scenarios.
- Develop methods to allow the use of genetic/genomic data throughout the beef industry complex to inform precise selection and management decisions.
- Develop and evaluate emerging technology that enables real-time animal management decisions.

### **Extension Bullseye Concepts Informing Phase One Recommendations:**

- Train extension personnel and allied industry relative to the complex interactions within GxExMxS to enable informed decisions.
- Evaluate and deploy emerging technology in the management of animals in cow-calf and feedlot settings.
- Develop decision support tools that integrate partial solutions towards enabling precision management and mating at the enterprise level.
- Train the next generation of professionals by integrating real-world scenario-driven practicums and in-class instruction.

### **Teaching and Extension Bullseye Concepts Informing Phase One Recommendations:**

- Broaden experiential learning opportunities for student.

**NIBSI Vision:** To create knowledge of alternative systems for efficient and sustainable beef production through integrated and interdisciplinary research efforts and to deliver information and tools based on that knowledge through formal student training and extension activities enabling more informed decisions.

These systems will cut across all segments of the industry acknowledging the interacting effects of genetic potential of cattle with varying production environments and management practices and recognizing consumer attitudes toward animal well-being and health, and their desire for healthy, nutritious, and safe animal protein products.

### **Guiding Principles**

1. Emphasis on GxExMxS in the design of projects.
2. Emphasis on the understanding Genotype to Phenotype.
3. Emphasis on the use of precision management tools.
4. All animal phenotypes across projects will be migrated to a central database.
5. Emphasis on the value of information flowing across segments of the industry.
6. Industry partnerships will be created to support translational research projects.
7. Sustainable beef production will be a central theme.

8. Animal health and well-being will be a central theme.
9. Consumer acceptance (social and product) will be a central theme.

**Goals and Intended Outcomes: Research**

1. Expand the reach of PHREC to address the high plains.
2. Expand cow numbers in eastern Nebraska/Midwest.
3. Increase productivity per unit of land and decrease input costs in western Nebraska and western range states.
4. Improve decision making processes in all segments of the industry through decision support tools.
5. Integration of next generation management technology into beef systems.
6. Better animal health through genetics and management.
7. Greater understanding of beef products relative to consumer acceptance and health.
8. Better data sharing and utilization by all segments of the industry.

**Goals and Intended Outcomes: Teaching and Extension**

1. Capitalize on UNL's leadership role in beef systems graduate education.
2. Increase UNL's capacity in undergraduate beef systems education (e.g., GLS and Animal Science).
3. Enhance the Beef Scholars program.
4. Capitalize on UNL's leadership role in distance learning (particularly the specialization in Beef Cattle Production).
5. Expand efforts in internships (feedyard of the future and cow/calf management) and in training students in the use of next generation technology.
6. Involve beef educators in on-farm translational research projects.
7. Improve rate of adoption of technology and innovation on the farm and ranch.
8. Enhance work-force development.

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