Minutes
Meeting of NCAC6
January 26, 2023

The committee met via Zoom videoconference on January 26, 2023, at 9:00 am. CST with administrative advisors Anne Dorrance (OSU). NCAC6 members present were Michael Day (K State), Catherine Ernst (Michigan State), Rod Johnson (Illinois), Pasha A. Lyvers Peffer (OSU), Guillermo Scaglia (NDSU), Michael Schutz (U of MN), and Kent Weigel (UW-Madison). Administrator Suresh Marulasiddappa (UW) also attended. The meeting was chaired by Michael Day. Michael Schutz volunteered to record minutes of the meeting.

After self-introductions, Anne Dorrance mentioned that she will be retiring and that the committee will be assigned a different Academic Advisor within the year. She advised that the 2022 notes kept by Michael Day would be added to the website. She further commented on the importance of collaboration within our committee and encouraged us to meet as a NC regional committee not only to review the proposals and mid-term reviews, but also when we meet jointly with other national Department Chairs and Heads. She reminded us of the importance of the committees and asked us to and the importance of collaboration and reviewed the process for approval. The committee proceeded to review NC multi-state projects.

NC_temp2040

The renewal of *Metabolic Relationships in Supply of Nutrients for Lactating Cows* was reviewed by Johnson.

Objectives:

1. Determine how ruminal bacteria can carry out fermentation when they are missing a key enzyme of glycolysis
2. Improve methods for measuring nutrient digestion throughout the gastrointestinal tract in ruminants
3. Evaluate transfer of ruminal bacteria amino acids into milk amino acids
4. Study the impact of feed on production of greenhouse gases and other air emissions
5. Identify mechanisms that explain why some cows are more efficient at using feeds to make milk than others
6. Quantify the impact of Holstein genetics on maintenance energy requirements
7. Improve procedures to quantify mammary uptake of nutrients
8. Evaluate dietary strategies to improve post-absorptive nitrogen efficiency, leading to reduced nitrogen excretion
9. Contribute to development and refinement of database structures to support ongoing modeling efforts
10. Develop mechanistic models describing methanogenesis in the rumen environment
11. Assess how geographic patterns influence dairy management and environmental impact
12. Assess how seasonal patterns influence dairy management and environmental impact

The proposal was reviewed under Appendix H review criteria. The project has had a long tradition of success through previous versions and includes many key researchers in dairy nutrition. In fact, many contributions of this work were included in the recently revised NRC publication on Nutrition of Dairy Cattle, and the committee uses its meetings to study the gaps for that important publication. There are many objectives but they seem to be sound and achievable. It is suggested that this committee be nominated for recognition as the outstanding Regional Committee recognition by NIFA at the APLU meeting. Impact of the previous work should be captured, and industry connections emphasized. Reviewer recommended approval. The question was called. Thumbs up reactions or emojis were raised. Motion passed by unanimous vote.

NC_temp1170

The renewal of *Advanced Technologies for the Genetic Improvement of Poultry* was reviewed by Lyvers Peffer. The proposal was reviewed under Appendix H review criteria.

Objectives:

1. Create and share data and technology to enhance the development and application of genomics and systems biology in poultry.
2. Facilitate the creation and sharing of poultry research populations and the collection and analysis of relevant new phenotypes including those produced by gene transfer.
3. Elucidate genetic mechanisms that underlie economically important traits, including genetic variants and functional regulatory elements within the genomes of poultry species, and develop new methods to apply that knowledge to poultry breeding practices.

The proposal addresses an important problem and the committee has a track record of success. There is some concern over the amount of true collaboration. Two of 3 outcomes appear to involve sharing of research, while the other does not. Working collaboratively is mentioned in the third objective, but less clear for the previous two. It appears that not all of the participating stations are included in the research plan. The list of milestones and potential duplication of efforts with other projects seemed to be missing. This committee has a great opportunity to highlight the importance of the lines of poultry developed at various stations and how they can be used through collaboration. Reviewer recommended approval. The question was called. Thumbs up reactions or emojis were raised. Motion passed by unanimous vote.

NCCC_temp308

The revised project *Nutrition and Management of Feedlot Cattle to Optimize Performance, Carcass Value and Environmental Compatibility* was reviewed by Schutz.

Objectives:

1. Enhance the utilization of C from energy feeds to compete in an energy economy and improve national food security.
   Comments: Collaborating states include (CO, GA, FL, IA, IL, IN, KS, MI, MN, NE, ND, OH, OK, PA, SD, TX, UT, WI)
2. To enhance the environmental sustainability of the feedlot industry through conservation and nutrient management.
   Comments: Collaborating states include (CO, FL, GA, IA, IL, IN, KS, MI, MN, NE, ND, OK, PA, SD, UT, WI)
3. To enhance the production efficiency and quality of feedlot (beef and dairy-type) cattle through management strategies and technologies.
   Comments: Collaborating states include (CO, FL, GA, IA, IL, IN, OH, OK, MI, MN, NE, ND, PA, SD, TX, WI)
4. To enhance management strategies that improve animal health and well-being.
   Comments: Collaborating states include (FL, GA, TX, IA, IN, SD)

The proposal was reviewed under Appendix J review criteria as a Coordinating Committee. Discrepancy was noted between the list of Stations included in the objectives and those registered to participate. While consideration was given to pausing the project until more stations could be identified, that was not recommended because registered participants are coordinating research and Extension well and are very active. Objective 3 and 4 are not as well developed as the first two. The committee is asked to consider whether an ERA committee would be an appropriate fit, given the amount of shared Extension efforts reported. The committees review focused on NC and NCR overlap, but the amount of overlap with W_3010 was raised, but dismissed as a critical concern. Reported impacts of previous work were good. Since there seems to be some transition in membership of the committee, they are reminded that the objectives could be adjusted at the time of the mid-year review to better reflect the work of new participants. Reviewer recommended approval. The question was called. Thumbs up reactions or emojis were raised. Motion passed by unanimous vote.

NC_temp2042

The renewal of Management Systems to Improve the Economic and Environmental Sustainability of Dairy Enterprises was reviewed by Weigel.

Objectives:

1. Improve calf and heifer growth, health, and welfare through enhanced nutrition, housing, and management.
2. Improve dairy cow performance and welfare through enhanced forage production and utilization, nutrition, housing, and management.
3. Integrate data and technology to enhance environmental, economic, and social sustainability of the dairy enterprise.

The proposal was reviewed under Appendix H review criteria. This is a long-standing committee. There appears to be some overlap with NC_1029, though our Academic Advisor pointed out that some overlap was not bad. Besides, this project is directed more at impact of behavior and wellbeing on management aspects, while NC_1029 seems more directed at the science of ethology and physiology. The project seems to touch on very contemporary issues facing the dairy industry. Further, there may also be some overlap with the NC_temp2040 discussed earlier, but again emphasis appears to be more on implications for dairy farm management. The emphasis on the farm enterprise level (Objective 3) is not so well developed. Reviewer recommended approval. The question was called. Thumbs up reactions or emojis were raised. Motion passed by unanimous vote.

NC214

The midterm review of *Increased Efficiency of Sheep Production* was completed by Scaglia. The proposal was reviewed under Appendix I review criteria. The committee is a large, active, and productive group of scientists with research diversity to accomplish objectives. Their strong connection to the Sheep and Lamb Industries is noted. The group has continued to meet regularly via Zoom in 2021, in person in 2022 and in person planned for 2023. The committee admits that collaboration has not been as great as had been expected for varying reasons. The committee has a good number of research and Extension publications. However, some publications occurred in both annual reports and that should be watched. They obtained a NIFA grant, which is especially noteworthy because funding for sheep research is limited in US. Suggestions are to improve the report with more focus on collaboration and shared ideas, and to increase opportunities for true collaboration. Reviewer recommended approval. The question was called. Thumbs up reactions or emojis were raised. Motion passed by unanimous vote.

NC1184

The midterm review of *Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation* was completed by Ernst. The proposal was reviewed under Appendix I review criteria. This is another long-standing project with nation-wide participation. The group is best characterized as being very connected in sharing ideas and individually very productive. They have met annually and highly value the joint meetings. Reports of work focused on long term challenges. There was evidence of 6 collaborative grants and 16 collaborative publications, though most of that effort was from a couple of pairs of stations with others working only independently. The sharing of techniques and ideas is perhaps the best example of collaboration from this committee and should be captured in the submitted reports. Reviewer recommended approval. The question was called. Thumbs up reactions or emojis were raised. Motion passed by unanimous vote.

There being no further business, Michael Day adjourned the meeting at about 10:40 am.

Mike Schutz, UMN
Acting secretary, NCAC6