Minutes Meeting of NCAC6

January 25, 2024

The committee met via Zoom videoconference on January 25, 2024, at 9:00 am. CST with administrative advisor Gary Pierzynski (OSU) joining at 10:00 am CST. NCAC6 members present were Michael Day (K State), Catherine Ernst (MSU), Rod Johnson (Illinois), Pasha A. Lyvers Peffer (OSU), Guillermo Scaglia (NDSU), Michael Schutz (U of MN), Kent Weigel (UW-Madison), John Jaeger (SDSU), Deborah VanOverbeke (UNL), Bryon Wiegand (MU), and administrator Suresh Marulasiddappa (UW). The meeting was chaired by Michael Day. Pasha A Lyvers Peffer volunteered to record minutes of the meeting.

After self-introductions, Day asked for nominations to elect committee chair and secretary. Both appointments begin 2025 for a 3-year term. Day commented that the primary responsibility of the chair is to coordinate the annual meeting and committee review of multistate projects, and the secretary submits the meeting minutes. Since there is the national department heads meeting, NCAC6 does not hold a second in person meeting.

* + Johnson self-nominated for the position of chair. Moved and seconded. Motion passed by unanimous vote.
  + Lyvers Peffer self-nominated for the position of secretary. Moved and seconded. Motion passed by unanimous vote.

Committee proceeded to multistate project reviews.

NC\_temp229

The renewal of *Swine Viral Diseases* was reviewed by Marulasiddappa (secondary reviewer Lyvers Peffer). The proposal was reviewed under Appendix H review criteria.

Objectives

1. Etiology, pathogenesis, and genetic analysis of viruses
2. Epidemiological investigation of viral pathogens that affect swine population in the United States.
   * Diagnostics and surveillance, risk factors, outbreak investigations, disease prevention, disease control and elimination, biosecurity, and animal production and economic impact
3. Immunology, Vaccinology, and Antiviral drug development

The project is relevant and timely and takes a broad and multi-disciplinary approach to the etiology, epidemiology, and prevention of swine diseases. The project has made significant progress in disease surveillance and real-time monitoring. High rate of publication by participants. Approaches to sharing data in real-time is commended. Participants have changed somewhat but this demonstrates how the group is evolving in expertise for continued future success. Outcomes, such as the symposia, are evidence of strong collaborations, but overall the responsibilities of participants to achieving collaborative outcomes is not clear. Suggestions are to improve the report by clearly defining responsibilities and contributions of participants. Reviewer recommended approval with minor revision. The question was called. Hands were raised. Motion passed by unanimous vote.

NCCC\_temp42

The renewal of *Committee on Swine Nutrition* was reviewed by Lyvers Peffer (secondary reviewer Day). The proposal was reviewed under Appendix J review criteria.

Objectives

1. Conduct weanling and growing-finishing pig research using a standardized protocol to allow pooling of the data from participating stations.
2. Conduct swine research on environmental temperature effect on feedstuff quality and animal productivity and efficiency.
3. Collaboratively conduct swine research on improving nutrient use efficiency for pork production.
4. Discuss research in progress at participating stations in order to enhance collaboration among stations and prevent duplication of efforts.
5. Discuss graduate student training at participating stations in order to ensure future personnel in swine nutrition.

This is a long-standing committee with a publication record that dates to the late 1960s. Objectives remain largely unchanged with the exception that a focus of studying impacts of environmental temperature on feed ingredient quality has replaced the objective to conduct sow nutrition studies. The group commits to developing projects on an annual basis that considers input from representatives of the swine and feed industries to address industry needs. Evidence of collaboration and coordination of research across participating institutions. Over 30 publications have resulted in the last 5-years; however, it was noted that only three publications were reported for 2023. The review committee discussed decreasing resources and researchers in the field of swine nutrition, which may account for the decrease in participants noted in the current report compared to the prior report. The decrease in participating institutions was not considered a critical concern. Reviewer recommended approval. The question was called. Hands were raised. Motion passed by unanimous vote.

NCERA\_temp57

The renewal of *Swine Reproductive Physiology* was reviewed by Day (secondary reviewer VanOverbeke). The proposal was reviewed under Appendix J2 review criteria.

This is another long-standing committee entering its 6th decade. Participation is holding and project demonstrates significant collaboration. Objectives focus on boar and gilt performance using applied and basic approaches that translate to maximizing performance for the swine industry. Objectives have not changed significantly over time; however, the science has adapted to meet advancing research needs (e.g. -omics and gene modification studies). A primary mechanism of communicating outcomes is through a biennial symposium targeted to the swine industry. Good evidence of collaboration. Limited evidence of teaching materials planned or produced (objective 6). Reviewer recommended approval. The question was called. Hands were raised. Motion passed by unanimous vote.

NC1029

The mid-term review of *Applied Animal Behavior and Welfare* was reviewed by Ernst (secondary reviewer Schutz). The proposal was reviewed under Appendix I review criteria.

Objectives

1. To develop novel behavioral and physiological indicators of animal welfare or apply existing measures to generate novel knowledge or applications.
2. To strengthen the scientific basis of animal welfare assessments and standards.

The project aims to work across species and groups. Timely and important area of study but linkages between participants are difficult to discern. Recent meeting noted only seven participants despite the large group size officially recorded. Overall, individual productivity is strong, but collaboration appears lacking. There is no mention of joint funding, and while joint publication is mentioned, there is not a goal or plan for accomplishing. It was noted that the primary linkage between its member is the sharing of research methodologies for application across species; however, this was not captured in the report. The review committee also discussed that the group appears to be in transition with realignment of research to include neonate and companion animal studies. It was suggested that the committee review the current objectives to confirm that the objectives adequately represent the expected outcomes. The amount of overlap with NCERA219 was raised but overlap was discussed as minimal. Additional suggestions are to place greater emphasis in annual reports on collaborative efforts and outcomes and to seek opportunities to disseminate joint conclusions that result from group efforts. Reviewer recommended approve with revision. The question was called. Hands were raised. Motion passed by unanimous vote.

Administrative Advisor Update

Gary Pierzynski joined as the new Administrative Advisor and provided an introduction. Discussed three topics: 1. role and importance of academic chairs/heads in multi-state project review; 2. federal budget continuing resolution with next deadline of March; 3. consideration by department chairs/heads for service as an Academic Advisor. Pierzynski reviewed the process for multi-state project submission, review, and approval. Day asked who should initiate annual multi-state project review meeting. Pierzynski noted that the chair of the committee initiates the process of meeting (when, where). He commented on the importance of collaboration among members of the committee but noted challenges to in-person meetings. He informed the committee that once the meeting is determined, chair sends notice to AA to authorize annual meeting. The committee proceeded to discuss the 2025 meeting. Johnson asked for committee agreement to continue the virtual meeting format. Committee agreed and recommended January 23, 2025 for the annual NCAC6 meeting.

NC1192\_temp57

The mid-term review of *An Integrated Approach to Control of Bovine Respiratory Diseases* was completed by Johnson (secondary reviewer Wiegand). The proposal was reviewed under Appendix I review criteria.

Objectives

1. To elucidate pathways by which host characteristics, pathogen virulence mechanisms, and environmental impacts interact to produce BRD.
2. To develop and validate methodologies for accurate BRD diagnosis, comprehensive and objective risk assessment, and surveillance to detect new patterns in BRD occurrence.
3. To develop and validate management practices and responsibly applied therapeutic and preventative interventions, such as vaccines, antimicrobials, and immunomodulators, to minimize the impact of BRD on cattle, producers, and society.
4. To determine how attributes of cattle production systems including epidemiologic, societal, and economic forces contribute to BRD, and to develop ways to promote changes in those systems to reduce the occurrence of BRD and improve cattle health, welfare, productivity and antimicrobial stewardship.
5. To promote dialogue and exchange among scientists, veterinarians, allied industry professionals and cattle producers to advance BRD research initiatives, to implement outreach, to disseminate research results, and to facilitate the translation of research findings to practical field applications.
6. To assess the economic impact of BRD across different sectors of cattle industry.

This is an active and productive committee. Evidence of consistent engagement through meetings. Report indicates good progress toward most goals. An exception is objective 6. There is little indication from the report regarding this objective, which should be captured in the report. There is also clear evidence of collaboration with most objectives involving two or more institutions. Publications also provide evidence of successful collaborations. Reviewers did not see plans for seeking additional funding. Technology transfer and plans to accomplish was discussed as a strength of this group and embedded within their objectives. Communication of results through meetings, symposia, webinars, podcasts, etc. reaches a broad audience. Reviewer recommended approval. The question was called. Hands were raised. Motion passed by unanimous vote.

NC1211

The mid-term review of *Precision Management of Animals for Improved Care, Health, and Welfare of Livestock and Poultry* was completed by Weigel. The proposal was reviewed under Appendix I review criteria.

This is a large project with impressive representation including industry and international scientist. The group aims to improve animal welfare through precision management and is at the interface of animal production, engineering (sensor) technologies, and data science. Breadth of work that considers data access, storage, and interpretation. Some overlap with two other groups (NE-1942 and NC1029) but overlap is minimal and there are clear differences in the objectives of this project compared to the other two. Regular interactions and productive collaborations captured in publications and grant submissions. Evidence of 29 grants and under 100 peer reviewed articles. Overall, a highly productive and collaborative group. Reviewer recommended approval. The question was called. Hands were raised. Motion passed by unanimous vote.

NCERA219

The mid-term review of *Swine Production Management to Enhance Animal Welfare* was completed by Weigand. The proposal was reviewed under Appendix K review criteria.

From a topic standpoint the project participants think broadly in the swine production and welfare space. Limited information uploaded into the system made review of the project a challenge. Extension was a noted strength. Industry linkage is strong and the potential for translation of research has great application. This is a large group with a number of productive members, and although metrics indicate productivity, collaborative research is lacking. Only four groups submitted materials for the report. Notes from the groups indicate challenges in swine facilities for conducting research and thus contributing to the project. Report noted 13 participants, or potential participants, yet only five institutions officially registered, suggesting the group is in transition. A suggestion was made for the committee to consider revising their research focus and to clearly demonstrate how the group is meeting expectations for collaboration. Reviewer recommended approval with revision. The question was called. Hands were raised. Motion passed by unanimous vote.

NC\_temp1182

The renewal of *Nitrogen Cycling, Loading, and Use Efficiency in Forage-Based Livestock Production Systems* was reviewed by Jaeger and Day. The proposal was reviewed under Appendix H review criteria.

Objectives

1. Quantify biophysical effects of grassland-based management strategies and climate change on N-use efficiency by ruminant animals, N cycling in herbage and soils, aquatic N losses, and GHG and other pollutant emissions from grassland agro-ecosystems.
2. Determine the role of plant secondary metabolites in ensuring improve pasture sustainability, enhancing animal health and performance, and decreasing the animal environmental footprint
3. Assess the efficacy of dietary factors on N-use efficiency in ruminant animals in forage-based livestock production systems and how these practices affect composition of feces and urine and rumen microbial efficiency.

The report referenced 13 researchers from 12 states, but only four participants are registered. It was discussed why there were so few registered users, and this was dismissed as a critical concern. No clear indication of participation by objective. There is a lack of collaborative outcomes with a greater focus on individual products. Historically good attendance at meetings and good output but evidence of cohesive efforts is missing. A suggestion was made to further develop the report and define collaborations that contribute to meeting the objectives. Species studies are captured as sub-objectives that roll up into main objectives. While this approach attempts to connect the efforts of the group, it appears more as a list of projects without a focus. It was further noted that there was little development of the teaching and Extension/outreach efforts of the group. Opportunities for methodology sharing that can be applied across species and environments was a noted strength. Reviewer recommended approval with revision. The question was called. Hands were raised. Motion passed by unanimous vote.

There being no further business, Day adjourned the meeting at 11:00 am.

Pasha A Lyvers Peffer, OSU

Acting Secretay NCAC6