W-3012 - Optimizing and Characterizing Sustainable Beef Cattle Production in Forage Based Systems on Western Rangelands

**Annual Meeting**

Corona, NM

July 14, 2023 to July 16, 2023

Minutes by E. Scholljegerdes (NMSU)

*Attendees:* E. Scholljegerdes (NMSU), S. Ivey (NMSU), T. Mulliniks (UNL), J. Crouch (Graduate Student, UNL), D. Bohnert (OSU), J. Sprinkle (U of I), T. DelCurto (MSU), S. Wyffels (MSU)

*Not present (based off of current NIMSS Participant list):* R. Waterman (USDA-ARS Miles City), A. Islam (UW), G. Carstens (TAMU), A. Meyer (MU), Z. McFarlane (Cal Poly), H. Cunningham (UW), J. Caton (NDSU), M. Garcia (USU), J. Oltjen (UC – Davis), T. Wikersham (TAMU), B. Jameson (SDSU), Y. Xiong (UNL), J. Scasta (UW), D. Tolleson (TAMU)

**July 14, 2023**

Attendees arrived at the Corona Range and Livestock Research Center in late afternoon and dinner was served at 7:30PM

**July 15, 2023**

*9:00AM*, meeting was called to order by Ivey and agenda was approved with one amendment (start with station reports) due to travel delay for Montana State faculty. Each university provided an update on current research being conducted in their lab as it pertains to the interests of the group. A large number of members have significant research underway in the area of virtual fencing, GPS, and grazing behavior. Additionally, most of the committee continues to have strong programs in the area of grazing livestock supplementation.

*12:15PM* Lunch was catered by the Corona Range and Livestock Research Center staff.

*1:32PM* Project renewal discussions commenced. Ivey asked the group if we wanted to continue as a “W” or move to a “WERA”. The group unanimously voted to continue as a “W”. Significant time was spent discussing participation in the group. Although the participant list is long, not many on that list participate any longer and, in some cases, have not ever participated. Granted, the pandemic and travel restrictions hurt participation over the past years, there is a lack of communication with many on the list (no response to emails). DelCurto emphasized the need of the committee to encourage participation of new faculty. Most members recounted the wonderful mentorship and collaborative experiences many of us experienced as we participated as graduate students and new faculty. The group acknowledge a general decline in Animal Science faculty throughout the western United States, particularly amongst faculty with a grazing livestock focus. The lack of travel funds is also to blame for the general decline in participation. Discussion then focused on scientists that we may want to contact in an effort to invite to participate in group. Ivey will set up a “Google docs” account for submissions of station reports and will compile information for annual report for review and submission within 60 days of this meeting (9/14/23). Final report for the current project will be due prior to the current project end date of September 30, 2024.

Discussions then began on the rewrite of the new project plan. It is clear that most, if not all, members are conducting work Carbon. Therefore, it was suggested that the new project plan have an objective on the following topics:

1. Carbon cycles on rangelands
   1. Grazed versus ungrazed
   2. Site/environment variability
   3. Overall management recommendations.
2. Refinement of methods for sustainable ruminant livestock
   1. Optimal supplementation
   2. Integrated crops/livestock
   3. Refinement of environmental impacts and grazing behavior on nutrient requirements
   4. Assess livestock biotype interactions with western environmental attributes
3. Incorporate precision technologies to better inform ruminant livestock production on rangelands
   1. Evaluate efficacy, utility, and adoption of precision technologies related to sustainable livestock management (e.g. DNA markers, GPS, Accelerometer, Virtual fences, drones, satellite imagery, etc)
4. Provide extension and outreach education in extensive livestock production systems
   1. Host the 6th Grazing Livestock Nutrition Conference
5. Provide professional development and mentoring opportunities for committee participants, young scientists, stakeholders, and graduate students

Drs. Delcurto and Wyffels will work on a draft to send out to the group.

*3:45PM* Grazing Livestock Nutrition Conference was then discussed. It was stated by Scholljegerdes that the pandemic and issues with ASAS meeting locations made things difficult to plan up to this point. Likewise, Dr. Ivey and Dr. Hess are still in the process of getting W-3012 monies transferred from Univ. of Wyoming to New Mexico State University. These monies are important to help with costs of this conference. That said, the group voted to host the 6th Grazing Livestock Nutrition Conference in 2025 in conjunction with the joint Western and Southern Section meeting. At this time, it has not been established when and where this meeting will be held. Options that are being discussed by the ASAS national board along with Western and Southern section boards are Ft. Worth, TX or Oklahoma City, OK in the spring of 2025. More information will come later this summer as the Western Section Board will be hosting a town hall meeting to discuss with the membership in August. Bohnert has notified the Western Section Board of our intent to host the GLNC in conjunction with the 2025 meeting. Discussion of a number of ideas came out since the last planning meeting. Most notably is the increase in availability of new technologies such as virtual fencing. A large number of the group has on-going work in this area. General ideas put forth are as follows:

1. Virtual fence
   1. Strategic land management (potential speaker - Dave Bohnert)
      1. What can it do for land mangers and what are the challenges moving forward
   2. Technology innovation – thinking ahead of the times (potential speaker - Dean Anderson)
      1. Idea behind this is that Dr. Anderson was one of the first to work with virtual fencing many years ago and it is just now really taking off, so the group was looking for his perspective on what he saw was its potential back in the day and where it is today, what took it so long to really take off and where will it go from here.
   3. Industry presenters
      1. Vence
      2. Halter
   4. Panel discussion
      1. Producers using the virtual fencing products
      2. Agency application to federal lands – Dwayne Rice – CO USFS Region 2 as a potential speaker
2. Policy – public lands
   1. Attorney and public lands policy expert – Tiffany at TAMU
   2. Data ownership
3. Cattle behavior
   1. How has technology revealed new insights into how animals think
   2. Waterer visitation – environmental drivers
4. Supplementation
   1. Eating behavior – supplement intake and environment
   2. Topography and canopy cover influences on supplement intake
   3. Strategic supplement – targeted nutrients
      1. Glucogenic precursors
      2. Rumen protected amino acids
      3. Methyl-donors
      4. Others
5. Precision livestock management – decision support tools
   1. Available technologies and application
      1. Monitoring water and challenges /costs associated
   2. Water – surface water and water quality
      1. Coping with poor water availability and quality
      2. Waterer types (dirt tanks, drinkers, live water)
      3. Mineral content – sulfur
6. Old topics from previous planning meetings
   1. Challenges of Grazing western rangelands, this is broad, but have talks that are relevant to grazing public and private lands and incorporate researchers and industry folks that are working to understand these challenges.
      1. Wildlife and other considerations on rangeland
         1. Deseret Ranch wildlife management
         2. Cumberland grazing Co-op
      2. Wildfire
         1. Large and small
      3. Fire restoration
   2. Data analysis (big data sets)
      1. Have someone explain some of the variables in the coding
         1. What can you “change” in the code to meet a specific objective or experimental design
      2. Data management – noise reduction
         1. Potential speaker – Mark Trotter CQ University

Other ideas brought to the group was to improve our sponsorship efforts for the meeting. Continue to incorporate graduate students and poster presentations. It was also mentioned that publication of the proceedings was important and that we will need to work with ASAS to develop a suitable outlet for the papers. One potential idea was as a special supplement for TAS

*6:00PM* Adjourned meeting for the day

*6:10PM* Tour of Corona Windfarm and research ranch

*7:30PM* Dinner and casual discussions on increasing membership participation

**July 17, 2023**

*6:45AM* Breakfast

*7:45AM* Meeting called to order by Dr. Ivey, current chair, and requested names for secretary-elect. Election of new leadership was put forth and Dr. Travis Mulliniks was unanimously elected Secretary. Discussion continued on the details of station report submissions and the beginning of project rewrite.

*9:00AM* Meeting was adjourned so that members could travel back to Albuquerque in time for the WSASAS Beef Symposium.