Challenges

- Declining and Limited Resources
  - Competing interests – different uses of water and needs
  - Seeing the productivity of water – is it where it needs to be/when it needs to be
    - How does it factor into economics as a producer, adding value in Kansas – are we adding value based on our usage?
  - Limited access in some areas to rural water supply

- Wastewater and Water Quality
  - Nutrient-loading/ water quality (harmful algae blooms)
  - Restoring and sustaining soil health
  - Economics drives crop selection – not rotating crops based on economic returns
  - How to re-incorporate farming and livestock back together? Water-intensive crop half the year, water saving/cattle grazing crop/land use for the other half?
    - Rotational grazing systems – textbooks from Dust Bowl era describe process
  - If we don’t have GMOs, we’re not going to feed the world

- State Rules and Regulations
  - How do we work across different agencies/states coordination

- Federal Policy
  - Perception that federal agencies do not follow the same rules and policies as imposed on citizens

- Air Quality
  - Non-native tree issues – disease issues, fire is necessary but must address smoke issues

Solutions

- No statewide single solution – Education is the answer!
- Increase education and engagement on both water quality and conservation
- Variable issues require variable responses
- Locally led, voluntary, incentive-based solutions

- Declining and Limited Resources
  - Encourage adoption of new water-related technology (sensors, water technology farms)
  - Conservation – irrigation allotment
  - Funding for drought research
  - Augmentation
  - Address groundwater declines through technology adoption
  - Address surface water declines by increasing storage and decreasing storage loss
  - Locally targeted control measures = WCAs and LEMAs
- Research opportunities at KSU for cattle water consumption and efficiency studies
- Ability of local groups to propose and implement local solutions
- Diversification in cropping systems, crops that use less water
- Beef genetics – select animals with less water intake requirement
- Building a facility at KSU for water intake measurement

- Wastewater and Water Quality
  - Provide cost share programs to helps users afford Best Management Practices (BMPs)
  - Funding for best management practices
  - Runoff – other states have more rain to deal with, therefore have had to deal with these issues for a long time… we should look toward their leadership for what they have done.
  - Stream bank stabilization – help erosion – open to new ideas and technology
  - Best management practices – no-till and wise land use
  - No-till has created great changes in water conservation/quality
  - Restoring and sustaining soil health – healthy soil can filter and sustain more water
  - How to re-incorporate farming and livestock back together? Water-intense crop half the year, water saving/cattle grazing crop/land use for the other half?
    - Rotational grazing systems – textbooks from Dust Bowl era describe process
  - If we don’t have GMOs, we’re not going to feed the world

- State Rules and Regulations
  - Give flexibility to water users who manage their own water resources (WCAs, LEMAs)

- Federal Policy
  - Waters of the US
    - Solution – need incentive-based solutions
    - Bring EPA out to educate them on the process. Get them in the field

- Air Quality
  - Regarding Fire – we have the science for rangeland health and the detrimental effects to ozone – don’t need more research