Global Themes – Global Solutions

Increasing importance on designing new x-discipline data structures to support policy/decision-making

Societal Benefit Areas (SBAs)

- Grand Challenge for Environmental Sciences (NAS)
- Questions of societal importance within and among these SBAs
- Understanding Earth System requires information integration
- Broad Adoption and Evolution of Cultures
Mandate of AES

The Colorado Agricultural Experiment Station will lead in the development and application of science-based knowledge for understanding and managing diverse and sustainable landscapes for food and fiber production, critical ecosystem functions (e.g., water and air quality, biodiversity, climate stability), and social well being of citizens". 
Unquestioned Global Preeminence

Agri-tech

Security

Agri-biome

Safety

Sustainability
Vision

We will attain *unquestioned global preeminence* in AgriTech and AgriBiome as it impacts Food Safety, Food System Security and Sustainable Agriculture.

Requires Integration

- Data Science
- Entrepreneurship
- Innovation
Climate change is driving off GHG from soil organic matter and will play a large role in our near-term climate future.

Both great challenges and opportunities exist in regards to maintaining soil’s role in food, climate, and human security.

The net results of human impacts on soil resources this century will be global in scale and will have direct impacts on human security for centuries to come.
Improving water use efficiency

Environment
(soil, water, temperature, etc)

Wise:
Efficient water irrigation scheduling
Climate Smart Agriculture
Big Bets in CAS Research

- Smart Agriculture
- Microbiome
- Big Data and Analytics
Supporting Research Infrastructure

- Facilities designed for team research
- Co-location AES and CE
- Invest in Research Center Facilities
- Upgrade Computational Capacity for Data Analytics and Communication
Proposed Framework

Citizen Science Engagement

- Citizen Science LTAR
- Phenology data
- Federal agency collaborations

Science Engagement

- Stakeholder engagement
- Data products & online resources
- Data Science: Workshops, tutorials, analysis code, faculty teaching resources
- Science Advisory groups

Communications

- Print collateral
- Media relations
- Events, Community Relations
- eNewsletters, emails, Listserves
- Internal communications

Digital Communications

- Social Media
- Websites
- AES/CE Community Engagement

Evaluation & Metrics

- Monitoring, Evaluation, & Metrics

Stakeholder Engagement
## Schedule for Strategic Planning

<table>
<thead>
<tr>
<th>Month</th>
<th>Strategic Planning (SLV and Western)</th>
<th>Strategic Planning (other Centers)</th>
<th>Development and Revision of AES and Ext Projects</th>
<th>Development of 2017 goals in FSAS</th>
<th>Annual Evaluations for 2017 (FSAS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Feb</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>April</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>May</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Challenges & Opportunities

1) Scientists trying, to apply the last century’s solutions to the next century’s problems

2) Maintaining CAES role in food, climate, and human security.

3) Erosion continues to exceed natural rates of soil development even in highly industrialized nations (e.g. Great Plains of North America).

4) Develop efficient methods of food production in urban settings.

5) Fully understand the magnitude of global soil carbon feedbacks to climate change.
Challenges/Opportunities for CAES

Need to better position ourselves for campus wide initiatives

- Cluster hires and increased support (e.g. Environmental sustainability, Energy and others)

- Demographics and Trends in Higher Education

- Create unique and relevant research programs in Colorado for local, regional and global relevance.

- Graduate Student numbers (strengthen and enhance recruiting efforts and reach out to underrepresented groups)
"Aspirational Culture" means the desired way we work together as an organization.

Co-creating and telling the story means, let’s describe vision and strategic focus in a compelling story.

- Aspirational Culture
- Vision / Values
- Strategic Focus Areas
- Co-Creating and Telling the Story
- Leadership Influencing and Reinforcing Alignment: Attitudes / Organizational Values / Culture
- Ongoing Strategic Conversations (organization-wide) — articulate aligned actions

Measuring Inputs (leading indicators): vision clarity; intuitive understanding of strategic focus; stakeholders can not only tell the story, but their part in it.
Extra stuff
Changes in the balance of important soil processes caused by human disturbance.
The post-World War II rise in fertilizer production and cost coincides with the spike in global human populations.
The global patterns of soil properties and the human imprint on them.