DEVELOPING A RESEARCH PLAN & BUILDING TEAMS

PANEL 1
Kevin Wagner & Tyson Ochsner

Tuesday, December 10
9:30 - 10:30
374 Ag Hall
Credits

• Mike Cronan, Academic Research Funding Strategies, LLC
• Julie Svetlik, Texas A&M AgriLife Research Strategic Grants Team
Funding opportunities and program officers

• Relationship, relationship, relationship
  • Get to know individuals in the funding agency or foundation
  • Understand the Funding Organization’s Goals and Objectives
    • A “value added” case cannot be made convincingly unless the person(s) writing the proposal understands the agency’s mission, culture, and investment priorities.

• Obtain early intelligence on impending releases of RFPs & priorities

• Ask questions if you don’t understand something
  • Never be hesitant about contacting a program officer for clarifications
Understand the funding solicitation

• **Read and reread the RFP** to ensure the proposal narrative is fully responsive to the goals, objectives and review criteria of the funder.
  • A careless or uninformed reading of the RFP is the most common mistake made, and it always results in a declined proposal.
  • Understand the review criteria and review process
    • Write the proposal narrative to clearly address the enumerated criteria

• Read funder generated handouts/materials

• Seek and ask to review successful proposals (ask colleagues, not funding agencies)
The RFP

• Is a non-negotiable listing of performance expectations reflecting the mission, goals, and research objectives of the funding agency.

• Is not a research smorgasbord offering you a choice of addressing some topics but not others, depending on your interest, or addressing some review criteria but not others.
  • It is not about what you want--it is all about what the agency wants.
    • View the project in the funder’s eyes
    • Avoid just “giving collaborators what they want” to appease

• REMEMBER:
  • Agencies do not fund good ideas.
  • Agencies fund good ideas that advance their mission objectives and their investment priorities.
PROPOSAL PREPARATION
Required Documents - Limits & Status

<table>
<thead>
<tr>
<th>Required Document</th>
<th>Limitations</th>
<th>Status</th>
<th>Input Received</th>
<th>Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Summary/Abstract</td>
<td>(250 Words)</td>
<td>Not started</td>
<td></td>
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</tr>
<tr>
<td>Project Narrative</td>
<td>(18 pages total)</td>
<td>Rough draft in development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bibliography &amp; References Cited</td>
<td>(no page limit)</td>
<td>None listed to date</td>
<td></td>
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<tr>
<td>Facilities &amp; Other Resources</td>
<td>(no page limit)</td>
<td>Request sent to institutional leads &amp; OSU faculty</td>
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<tr>
<td>Equipment</td>
<td>(no page limit)</td>
<td>Request sent to institutional leads &amp; OSU faculty</td>
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<tr>
<td>Other Attachments</td>
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<td></td>
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<tr>
<td>Key personnel roles</td>
<td>(2 page limit)</td>
<td>Need to request that all collaborators provide 1-2 sentences regarding role</td>
<td></td>
<td></td>
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<tr>
<td>Logic Model</td>
<td>(2 page limit)</td>
<td>To be discussed on August 30</td>
<td></td>
<td></td>
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<tr>
<td>Management Plan</td>
<td>(3 page limit)</td>
<td>Draft developed</td>
<td></td>
<td></td>
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<tr>
<td>Data Management Plan</td>
<td>(2 page limit)</td>
<td>Rough draft developed</td>
<td></td>
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<tr>
<td>Documentation of Collaboration</td>
<td>(no page limit)</td>
<td>2 letters of support provided to date. Others are in the works.</td>
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<tr>
<td>Preprints</td>
<td>(limit 2)</td>
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<tr>
<td>Minority-Serving Institution Doc</td>
<td></td>
<td>N/A</td>
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<tr>
<td>Felony Convictions or Tax Delinquent Status Doc</td>
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<tr>
<td>Cooperation &amp; Institutional Units Involved</td>
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Developing project proposals

• Start as early as possible
  • Know the deadlines & stick to them
  • Try to make time to have a colleague or “red team” review your proposal
  • Try to complete all proposal components with a few days to spare for errors, internet issues, etc. Earlier if hard copies are required.

• Start drafting budget & scope / text ASAP
  • Start talks & budgeting with partners (internal & external) EARLY in the game
    • Be clear about the budget
    • Necessary for appropriately scoping your proposal
  • Finalize budget details ASAP so that routing can be initiated
    • PIs continue finalizing proposal text up to submission
Develop a timeline and stick to it

<table>
<thead>
<tr>
<th>Date due</th>
<th>What</th>
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</thead>
<tbody>
<tr>
<td>9-Aug</td>
<td>Request CoPD documents; letters of collaboration; facilities and equipment</td>
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<tr>
<td>29-Aug</td>
<td>First draft project narrative completed</td>
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<td>30-Aug</td>
<td>Project Team meeting in El Reno</td>
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<tr>
<td>4-Sep</td>
<td>Request letters of support from advisory committee and partners with 10 day turnaround</td>
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<tr>
<td>7-Sep</td>
<td>Second draft project narrative completed with literature citations</td>
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<tr>
<td>7-Sep</td>
<td>DRAFT budget provided to Kevin for compilation</td>
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<tr>
<td>10-Sep</td>
<td>Kevin provides combined budget back to objective &amp; institutional leads for needed adjustments to address overages</td>
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<tr>
<td>10-Sep</td>
<td>All CoPI and collaborator forms received (form, bio, C&amp;P, COI); short description of role(s) in project, objectives on, Ext/Res %</td>
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<tr>
<td>14-Sep</td>
<td>Receive letters of support from advisory committee and partners</td>
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<tr>
<td>14-Sep</td>
<td>DRAFT Final Budget and budget justification complete</td>
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<tr>
<td>14-Sep</td>
<td>DRAFT Final Project Narrative, Management Plan, Data Management Plan, Logic Model, Key Personnel Roles complete</td>
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<tr>
<td>16-Sep</td>
<td>Submit Draft Final project narrative, management plan, Logic model, key personnel roles, bibliography &amp; budget to review panel</td>
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<tr>
<td>19-Sep</td>
<td>Facilities &amp; Other Resources, Equipment, Preprints, Project/Performance Site Locations Form due</td>
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<tr>
<td>19-Sep</td>
<td>Proposal review team provides feedback</td>
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<tr>
<td>20-Sep</td>
<td>Based on review team feedback, make final adjustments to budget (if needed)</td>
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<tr>
<td>21-Sep</td>
<td>Collaborator (KSU, TAMU &amp; ARS) budget routing initiated (at the latest)</td>
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<tr>
<td>25-Sep</td>
<td>Subaward documents due to OSU (Subaward form, Statement of work, budget, budget justification, Letter of commitment)</td>
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<tr>
<td>26-Sep</td>
<td>Project Summary, Final Budget &amp; Budget justification submitted to OSU Sponsored Programs for OSU routing</td>
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<tr>
<td>30-Sep</td>
<td>All documents complete and ready for final review</td>
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<tr>
<td>3-Oct</td>
<td>All Final Proposal Documents submitted to OSU Sponsored Programs Office</td>
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<tr>
<td>5-Oct</td>
<td>OSU Sponsored Programs Submits Proposal</td>
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<tr>
<td>10-Oct</td>
<td>DUE DATE</td>
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</table>
TEAM BUILDING & FACILITATION
Team building, facilitation & communication

• Start small & make sure major components will be covered (budgetarily) before bringing in new partners
  • Ensure diversity
  • Choose your partners wisely - Don’t get too ambitious
  • Conduct scoping exercises with core team to identify technical areas, team members & other potential investigators
  • Once team fully formed, allow objective teams to self select (see Doodle Poll results on next slide)
Doodle Poll to Identify Objective Teams

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
<th>Allen Berthold</th>
<th>Alex Rocateli</th>
<th>Amber Campbell</th>
<th>Bill Fox</th>
<th>BJ Gray</th>
<th>Brent Auvermann</th>
<th>Carolyn Baldwin</th>
<th>Charles Long</th>
<th>Corey Moffet</th>
<th>Dan Devlin</th>
<th>David Anderson</th>
<th>David Brown</th>
<th>Doug Tolleson</th>
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<tbody>
<tr>
<td>1.1</td>
<td>Develop &amp; ground-truth decision support tools with mobile device-optimized interfaces allowing forage monitoring &amp; forecasting</td>
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<td>OK</td>
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<td>1.2</td>
<td>Evaluate GPS-enabled virtual fencing technology to improve livestock mgmt &amp; grazing &amp; reduce wildfire damage</td>
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<td>1.3</td>
<td>Integrate forage monitoring system with virtual fencing technology to enhance (and potentially automate) control of grazing</td>
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<td>OK</td>
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<td>OK</td>
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<td>1.4</td>
<td>Advance unmanned aerial vehicle &amp; unmanned ground vehicle development to control eastern redcedar &amp; other brush</td>
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<td>OK</td>
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<td>1.5</td>
<td>Assess precision supplementation technology &amp; strategies allowing remote measurement &amp; precise control of feed</td>
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Team building, facilitation & communication

• Once proposal begins taking shape host a face-to-face planning meeting (if possible)

• Stage coordination meetings with team leads, principal investigators, scientists
  • Leadership team meet weekly
  • Objective teams meet as needed
    • To ensure integration, ensure all objective teams meet with each other at least once
    • Full team meetings monthly

• Use Zoom for meetings (cameras on!)

• Use Dropbox or Google Doc to expedite writing
Kick-off Planning Meeting Agenda

• 10:30-10:40  Welcome and Introductions
• 10:40-10:45  Proposal Vision
• 10:45-11:30  Discuss objectives and objective teams (5 min. ea)
• 11:30-11:35  Program Evaluation
• 11:35-11:40  Review draft budget
• 11:40-11:50  Discuss process & timeline for developing proposal
• 11:50-12:00  Decide on the site for our face-to-face meeting
• 12:00        Adjourn
Goals of face-to-face “All-Hands” meeting

• Provide opportunity for team members to meet in person

• Get stakeholder feedback

• Finalize discussions on sub-objectives
  • Tasks/Methods
  • Roles
  • Sites
  • Budget

• Ensure integration (research, Extension, education, objectives)
Face-to-face Planning Meeting Agenda

- 8:30-8:40 Welcome and Overview
  - Proposal Goal, Objectives, Vision, Anticipated Outcomes
- 8:40-8:55 Introductions
- 8:55-9:15 Project Administration
  - Project Management Plan
  - Data Management Plan
  - Proposal Budget
  - Proposal Timeline & Upcoming Deadlines
  - Other Items (Project Sites, etc.)
- 9:25-10:50 Workgroup Breakout Session #1
- 11:00-12:20 Workgroup Breakout Session #2
- 12:20-1:00 Networking Lunch
- 12:40-2:00 Workgroup Breakout Session #3
- 2:10-3:10 Logic Model Development
- 3:10-3:40 Project metrics for evaluating progress towards objectives
- 3:40-3:45 Meeting Wrap-Up (Next steps, future meetings, concerns)
Face-to-face planning meeting

*Key topics for workgroup breakout discussions*

- Key tasks to be accomplished under each objective
- Methods used
- Project sites
- Roles and responsibilities (i.e. who will accomplish the key tasks)
- Budget required by each task & performing entity
- Timeline for each sub-obj. (this will roll into project timeline)
- Integration of the objective/tasks with other sub-objectives including socio-economics and education & outreach components
RESEARCH PLANNING CASE STUDIES
Unknowingly planting the seeds for a $10 million USDA Sustainable Agricultural Systems grant in northeast China, 2016
Developing a vision for the Tier 1 Rural Renewal initiative in southwest Oklahoma, 2019
WRITING PROPOSALS
Write with the Reviewers in Mind

• Reviewers:
  • Are tired and overworked
  • Probably wear bifocals
  • May be reading your proposal at 2 am after reading four other proposals

• Make it easy for them
  • Follow directions
  • Clearly address review criteria
  • Include lots of headings, figures, white space
  • Write for a technically literate person who is not an expert in your subfield
  • Put the main idea or conclusion up front, then expound
Write for reviewers

• Reviewers often comment on how poorly a proposal is written--
  • “it is not clear what the proposer actually intends to do,”
  • “the goals and objectives are vague and general, and lack specifics,”
  • “this proposal is confusing,” etc.

• Reviewers assume that organizational incoherence and sloppy errors in language, grammar, and spelling:
  1. Reflects degree of organization in thinking (or lack thereof)
  2. Will translate into sloppy research
### Situation
- Population growth and demand for animal-derived protein is expected to double over the next 50 years.
- There is an increased expectation of drought and higher temperatures impacting livestock performance and grazingland health and production.
- Poor grazing management is reducing grazingland productivity and impacting ecosystem services.
- Losses resulting from wildfires are increasing.
- Brush encroachment onto grazinglands are reducing productivity, impacting hydrology, and increasing wildfire risks.
- This situation is representative of many areas of the world.

### Inputs
- Information, models, and autonomous air and ground vehicle platforms from previous studies performed by OSU, Texas A&M, KSU, USDA-ARS and others.
- Funds from USDA-NIFA.
- Faculty, educators, students, facilities, and equipment at OSU, Texas A&M, KSU, and USDA-ARS.
- Recently commercialized technologies.
- Participation by ranchers in development of technologies and training programs.
- Engagement from federal and state agencies involved in natural resources management.

### Activities
- Evaluate using livestock monitoring technologies to select more heat tolerant and efficient livestock.
- Optimize precision feeder use to improve livestock production.
- Enhance forage monitoring and forecasting technology to guide grazing decisions.
- Evaluate virtual fencing technology for improving grazing distribution.
- Develop an autonomous system to aid brush control.
- Develop an integrated understanding of how grazing technology adoption impacts social, economic and environmental conditions.
- Broaden outreach, demonstration, teaching and software release programs to extend new knowledge to grazing managers in the South Plains and beyond.

### Outputs
- Technologies and guidance for characterizing cow phenotypes for heat stress and efficiency.
- Guidance/decision tool on optimized use of precision supplementation technology with forage available.
- Forage monitoring and forecasting decision support systems using near real-time data collection via unmanned aerial vehicles, satellites, and other sources.
- Guide on utility and best uses for virtual fences.
- Algorithms for brush location/identification and autonomous mobile platform for brush control.
- Calibrated and validated models for assessing ecosystem benefits and wildfire risk reductions resulting from technology adoption.
- Stakeholder input integrated into technology and training activities.
- Quantified profit maximizing use of grazing technologies.
- Grazing technology training via Extension programs, demonstration ranches, secondary school curriculum and teacher training.

### Assumptions:
Our central premise is that grazing managers will be more likely to adopt technologies that help them incorporate best management practices if they see the technologies as effective, feasible, and providing management flexibility. If we determine that this is indeed true and the technologies are effective, the stage will be set for transformation of grazing management.
### Outcomes

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Actions</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Understanding how to use phenotyping technologies to address heat stress and select efficient animals</td>
<td>- Change in cattle selection criteria to better fit environmental stresses</td>
<td>- Improved US cow herd efficiency and sustainability via selection protocol use</td>
</tr>
<tr>
<td>- Improved understanding of optimal use of precision feeders in response to forage available/forecasted</td>
<td>- Implementation of strategic supplementation based on need, not tradition</td>
<td>- Increased efficiency of animal-based protein production per acre grazed and supplement fed</td>
</tr>
<tr>
<td>- Increased producer and student skill/ability to determine stocking rates</td>
<td>- Application of dashboard to inform stocking and grazing practices</td>
<td>- Improved long-term viability of grazinglands in the Southern Plains via reduction in acres overgrazed and/or experiencing brush encroachment</td>
</tr>
<tr>
<td>- Knowledge of virtual fence performance and best uses</td>
<td>- Incorporation of new virtual fencing technologies into existing livestock management systems</td>
<td>- Improved grazingland nutrient cycling and water retention due to better grazing distribution and forage health</td>
</tr>
<tr>
<td>- Quantifying the changes in ranch economics, nutrient cycling, soil moisture, and wildfire risk resulting from grazing technology adoption</td>
<td>- Employment of autonomous vehicles to treat noxious brush</td>
<td>- Reduced wildfire related losses due to brush reduction and grazing strategies</td>
</tr>
<tr>
<td>- Understanding rancher needs and perceptions of technology</td>
<td>- Technologies are used to inform USDA risk management activities</td>
<td>- Improved rancher quality of life and worker safety and reduced labor needs via use of virtual fencing, decision support tools, and other technologies</td>
</tr>
<tr>
<td>- Increased producer and student knowledge/skill/ability to use new and emerging technologies to improve grazing management and grazingland health</td>
<td>- New technologies are cost-shared via government agencies</td>
<td>- Improved economic viability of grazingland operations</td>
</tr>
<tr>
<td>- Increased student interest in grazing management and new grazing technology</td>
<td>- Increased adoption of new technologies and retention of adopted technologies</td>
<td>- More rapid adoption of emerging technologies and approaches to improve grazingland management in the Southern Plains and beyond.</td>
</tr>
<tr>
<td>- Improved economic viability of grazingland operations</td>
<td>- Increased enrollment in graduate &amp; undergraduate fields related to range management, rangeland, agribusiness, and other environmental disciplines</td>
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</table>
The well written narrative

• Do not impose a “cognitive burden” on reviewers.
• Ferret out “leaps of faith” - real and imagined
  • Be absolutely linear
• Reviewers respond favorably to details and specifics, and not so well to vague generalities. Get to the point quickly.
  • Ambiguities are ALWAYS punished!
• If a proposal is challenging to read it will not be read.
  • To the point--it will not be funded.
Golden Rule

“Make it as easy as possible for the reader to understand and evaluate your proposal.”
From Handbook for Writing Technical Proposals that Win Contracts

Be clear, concise, and authoritative in your writing and organize the proposal *exactly* as requested
Your Organizational Template

• **Use the funding solicitation as a narrative template** to ensure you are fully responsive to all questions asked in the RFP and in the order asked.

• Tell reviewers in an introductory paragraph what you propose to do, why you propose to do it, how you will do it, your rationale for doing it, why you have the expertise to do it, your anticipated outcomes, and value added benefits of your proposed activities to the agency’s mission priorities.

• Format your proposal to make it easy to read

• Have proposal proofed by colleagues, students
Grantsmanship Tips

• Use figures, flow charts, tables, bullet lists, etc.
• Use heading and subheadings to help reviewers locate information
• Bold, italics and underlining (used judiciously) can help reviewers find important points
• No tiny fonts or illegible figure labels
• Use the same terms in your proposal the agency uses in the RFA
• Less is more!
  • Never use two words when one will do “...has been shown to be....” vs. “...is...”
A Proposal Must

• Be persuasive
• Communicate passion
• Communicate measurable outcomes & impact
• Be easy to understand by readers with various backgrounds
• Tie proposed research to the goals of the funder
• Focus on future, not past
• Inspire confidence in researchers’ abilities and resources
- Demonstrate in your proposal that you know who is doing similar work in your field
- Tie your proposal to major national or regional issues
- Don’t be afraid to let your passion and enthusiasm for the proposed project show in your writing
- Exhibit confidence that the project warrants funding
- Have fun!
Remember: Intrigue the reviewers!
Top 5 Reasons for Rejection

5. Not a good investment of public dollars
4. Unfocused research plan - Review panel questions achievability of proposed work
3. The proposed research does not fit the stated interests of the RFA
2. PI’s are inexperienced with the experimental design or methodology
1. Unclear methods or procedures
Tyson Ochsner

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