Grant Writing for On-Farm Research

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On-Farm Research

1. Research question
2. Research design
3. Research team

Grant proposal
Research = answering a question

What is your question?

What can I do on my farm to make me (and my family) happy?

• Fulfilling, enjoyable work and play
• In line with values: good for the earth and good for people
• Enough material goods

How can I solve a problem?
Develop a hypothesis

The right transplanting equipment will improve health and profits

No-till crimping a cover crop will be good for the environment and will not affect profits
Translate your hypothesis to a **researchable** question

What is/are your **measurable** result/s?

- Health $\rightarrow$ **injury rate, comfort, noise, ...**?
- Environment $\rightarrow$ **soil erosion, water quality or quantity, biodiversity, soil health (compaction, organic matter, aggregates, etc.)** ...?
- Profit $\rightarrow$ **labor time, input costs, price (product quality & marketing), weeds, yield** ...?
Balancing act

Real question

What can you measure – and get done?

- Ethical values?
- Financial security?
- Quality of life?

- Input costs
- Yield
- Product quality
- Labor time

- Market
- Soil health
- Water quality
- Timing
- Reliability
Research design: what and how?

Transplanter example

• What exactly will you measure? Labor time (to load planter? plant 100 row feet? maintain planter?), comfort (immediate? after 4 hours? 2 days?), noise, cost ...?

• How will you measure it?

• How will you record the measurements?
Transplanter comparison:
Jane & June use transplanter A in field 1
John & Jim use transplanter B in field 4
Jesse & Jan use transplanter C in field 2
Or
Jane & June use transplanter A on Monday, transplanter B on Tuesday, and transplanter C on Wednesday, all in field 1
Jane & June use transplanter A in field 1 on Monday morning
John & Jim use transplanter B in field 4 on Monday morning
Jesse & Jan use transplanter C in field 2 on Monday morning

Jane & June use transplanter B in field 1 on Monday afternoon
John & Jim use transplanter C in field 4 on Monday afternoon
Jesse & Jan use transplanter A in field 2 on Monday afternoon

Jane & June use transplanter C in field 1 on Wednesday
John & Jim use transplanter A in field 4 on Wednesday
Jesse & Jan use transplanter B in field 2 on Wednesday
Many kinds of replication
Dealing with “random” variation

Do Jesse and Jan work at the exact same speed every time if they are in the same field using the same equipment?

Solution: statistics (including replication)

95% significance or $p < 0.05$

Tradeoff between certainty and cost of research

Careful design remains important.

Statistical test type depends on research design.
Recording data

• Paper – cheap and flexible; requires data entry
• Phone or tablet – facilitates data entry; less flexible
• Set up easy to use template & have team members test it (especially recorders)
• Record other observations
What do you need or want help with?

- Replication
- Implementation
- Data collection
- Data analysis and statistics
- Outreach
- Project design
Potential research team members

• Family members and farm workers
• Other farmers
• Technical advisors:
  – County Extension or other ag. educator or
  – College & university faculty and staff or
  – Students or
  – NGOs or
  – Consultants
How does conversion to silvopasture affect the income potential from grazing?

• **Hypothesis:** shade will provide relief from heat stress, which will improve calf weight gain and future calving success. So measure calf weight gain and next year’s calving?

• **Limitation:** not enough silvopasture to provide shade on all hot days
4 treatments x 4 replications

- Open pasture (OP)
- Silvopasture (SP)
- Grazed woods (GW)
- Ungrazed woods (Ctl)

2 acres total in woods
8 to 20 days in plots?
New research questions

- Do cows access silvopasture and woodland when temperature and humidity are high?
- Does access to silvopasture and woodland reduce signs of heat stress (panting and drooling)?
Average daily calf weight gain

Groups 1-3

OP  SP  GW

1.95  2  2.05  2.1  2.15  2.2  2.25  2.3  2.35  2.4
Average daily calf weight gain

Groups 1-3   Groups 4-6
8 hard steps to on-farm research

• Identify your research question and hypothesis
• Decide what you will measure and what data you will collect.
• Develop a research design.
• Put together your research team. (Get funding)
• Implement the project.
• Collect and record data and other observations.
• Analyze and interpret the data.
• Report your findings to grantor and farmers
Designing Sound Projects

Some questions to ask:

• What **problem** (or opportunity) are you addressing? What are your **goals** and **measurable objectives**?

• Have **others**,** addressed this problem**? What can you learn from their work?

• **Who else** might care about your problem? Should they be involved in your project?

• What’s your **main strategy** to address your problem? (among several options)
Other questions to ask:

• What's a **realistic project timeline?**
• What **resources (people, $$, materials)** does your project require? (Which do you already have?)
• Who else needs to know about your project? What’s the best way to **reach** that audience?
• How will you **measure** and **evaluate** your project's outcomes?
Identifying Possible Funding

Pub. by Michael Fields Agricultural Institute at:

Pub. by National Sustainable Agriculture Coalition at
http://sustainableagriculture.net/publications/grassrootsguide
Identifying Possible Funding

- Use **www.grants.gov** to get notified about fed’l programs:
- Click on "Manage Subscriptions." You will see several options for getting notices. Click on "Notices for Advanced Criteria."
- The next page, "Subscription Services," lets you select among categories of programs, of eligible applicants, and of agencies. Give them your email address to receive notices of the kinds of programs you request.
Possible Funding - Other Resources:

- The Catalog of Federal Domestic Assistance
  https://www.cfda.gov/?s=program&mode=list&tab=listUSDA
- Organic Information
  https://www.ams.usda.gov/publications/content/usda-organic-resource-guide
- USDA NRCS Program Resources
  http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?cid=stelprdb1048817#sthash.gXsyBcwh.dpuf
Possible Funding - Other Resources:

- Networking, Extension, development offices at colleges and universities...
- Libraries – Ask the reference librarian for help locating websites and program information
- The Foundation Directory, by subscription (available at most major libraries) [https://fconline.foundationcenter.org/](https://fconline.foundationcenter.org/)
Finding Possible Funding: ?s

• Would your project advance a program’s stated mission and goals? And vice versa...

• Is the program’s form of assistance appropriate to your needs?

• How big is its funding pool? What’s the average amount and duration of grants?

• Is funding available up-front or (more typically) only on a reimbursement basis?
Finding Possible Funding: ?s

• What are eligibility requirements, financial match requirements, and restrictions on a program’s use?

• Are a program’s application deadlines and funding timeframes suited to your needs? Does the program fund multi-year projects?

• Do past grantees feel that a program’s reporting requirements are reasonable and that the program is well-administered?
Finding Possible Funding

How to answer all those questions:

• **Read the RFP!** (or MOSA, or NOSA, or RFA, etc.)
  – on program’s website
• **Participate in webinars** for potential applicants.
• **Call the program staff.** Contact info is on their website and on the RFP.
• **For some questions, ask past grantees**
Basic Grantwriting:

• Sound Practices and a Few Things to Avoid
• Commonly Requested Attachments
• Getting Help
Basic Grantwriting:  
Sound Practices: BE ORGANIZED

- Start early!! You’ll need more time than you expect. Plan to submit well in advance of the deadline.

- Read the RFP at least 3 times and follow instructions.

- Follow the RFP’s checklist; if none exists, make your own. Break your work into sections so it’s not overwhelming, and use an outline to keep it logical.

- Make sure you understand the review process; know the point values of each section of the proposal.
Basic Grantwriting
Sound Practices: BE CLEAR

- Use clear, simple language to be readable.
- Explain how your proposal advances the RFP’s goals.
- Be precise, accurate; don’t exaggerate.
- Develop your proposal’s small team of collaborators.
- Have a trusted colleague review: Is it clear? Logical?
- Be sure your budget is accurate, clear, and accompanied by a budget narrative, if needed.
Basic Grantwriting: Sound Practices: BE STRATEGIC

- Participate in programs’ explanatory webinars
- If you’ve read the RFP 3X, and still have questions, call the program staff
- Use letters of support to make your case, offering thinking points or even a draft for their authors (but don’t make them all alike).
- Identify weak aspects of your proposal and give yourself time to fix them.
- Be willing to readjust your proposal for each program to which you submit it.
Basic Grantwriting: A Few Things To Avoid

- Don’t include materials not requested.

- Don’t exaggerate; instead, defend your proposal with precise, **accurate facts and arguments**.

- Don’t recycle a proposal blindly. If you’ve submitted to one program, tailor that proposal to another program’s specifications, based on its RFP.

- Don't be discouraged! If you’re turned down by a program, **find out why** before writing another.
Plan enough time (4-6 weeks) to register through www.grants.gov in a few easy extra steps. (Use excellent grants.gov help line, if needed.)

- If submitting as an individual, register as an individual.

- If submitting for an organization, first register that organization through www.grants.gov:
  
  • Obtain a DUNS number and
  
  • Register w/ System for Award Management (SAM)

Submit your proposal through www.grants.gov early - at least a few days ahead of deadline to avoid delays.
Basic Grantwriting: Typical Grant Application Format

Project **Summary:** What are you going to do and why?

**Need:** With facts, explain your project’s need, goals, and measurable objectives.

**Approach/Method:** What steps do you plan to take to reach your goals?

**Time Line/Workplan:** How long will each step require?

**Organizational Mission:** Tell your story. Why are you the best candidate to fund?

**Personnel Credentials:** List key staff, their skills, education and experience.

**Budget:** What will this cost, by Expense Category, by Objectives? What non-fed’l match (cash, in-kind) can you contribute? Use a budget narrative to clarify details.

**Communication/Outreach:** To whom and how will you communicate about your work?

**Evaluation:** How will you measure your progress toward goals and objectives? How will you gather the data?
MFAI’s website offers numerous documents to support grantwriting. [http://michaelfields.org/grant-advising-resources/](http://michaelfields.org/grant-advising-resources/)

These include:

- How to design projects, identify funding prospects,
- and successfully write grants
- Grant-writing Do’s and Don’ts
- Strategies for writing budgets for federal grants
- Electronic Submission
- This powerpoint
MFAI also offers free grants advising in the Midwest, especially for underserved farmers and groups assisting them.

But anyone, anywhere can sign up for MFAI’s grants notices by sending an email to grants@michaelfields.org.
NCR SARE Farmer Rancher Grant Program

• Grants directly fund farmers and ranchers to explore new production methods or marketing approaches for their farm
• Up to $7500 for Individual farm, $15,000 for Teams of Two, and $22,500 for Groups of 3 or more
• Encouraged to link with university or non-profit partners
• 40 projects funded per year
• Coordinated by Joan Benjamin
• CFP in August, due late November
Farmer Rancher Grants Funded 1988-2016

- IA (78), $587,166
- IL (58), $371,368
- IN (51), $447,105
- KS (93), $650,059
- MI (121), $928,796
- MN (125), $1,010,885
- MO (158), $1,104,191
- ND (47), $478,295
- NE (69), $449,034
- OH (128), $1,031,441
- SD (49), $388,714

Note: The chart shows the number of grants and the total amount funded in each state from 1988 to 2016.
Search Projects

Search the database of SARE funded grant projects.
(Search Tips)

Project Title: transplanter
4 projects found.
New Search

FNE16-849 - (2016) Propagating grapevines in cell plug trays and using a water-wheel transplanter in establishing a vineyard

FNE12-758 - (2012) An investigation into the suitability of the Japanese paper pot transplanter to small-scale vegetable farms

FNE05-545 - (2005) Personal planter: A self propelled transplanter for setting 100 to 1,000 plants at a time

FNE99-269 - (1999) Evaluating a No-till Transplanter for Organic Vegetable Production
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Questions?