USDA
Small Business
Innovation Research Program
Phase I
MODULE TWO
MODULE TWO CONTENT

Developing Your Idea

- Identify the Opportunity/Problem
- USDA SBIR 10 Topic Areas
- Develop a Potential Solution
- Literature Review
- Gain the Opinion/Support of Others
- Research Design – Identify Desired Results
- Capacity and Fit
- Determine Commercialization Potential
- Module Two Resources
- Training Team
Research Process

RESEARCH PROCESS

DEFINE THE PROBLEM
Select a research topic

LITERATURE REVIEW
Familiarize yourself with existing research

CONCLUSION
Report the research findings

COMPARISON
WITH EARLIER RESEARCH

THEORETICAL
INTERPRETATION
OF THE RESULTS

ANSWER THE
EMPIRICAL RESEARCH QUESTIONS

CONDUCT RESEARCH
Collect and analyze data

FORMULATE A HYPOTHESIS

EMPIRICAL
RESEARCH QUESTIONS

SELECT A RESEARCH DESIGN
Choose one or more research methods: observation, experimentation, or surveys
Identify an Opportunity/Problem

- What is a common situation/problem you and others have experienced?
- Might research allow you to assess, resolve, or mitigate the problem?
Identify an Opportunity/Problem (cont.)

• Successful projects fit in one of 10 NIFA SBIR Topic Areas

• USDA provides Priority Areas within each Topic Area

• Applicants can propose an idea outside of the Priority Areas as long as the idea is applicable to Topic Area
1. **Forests and Related Resources**
Address the health, diversity, and productivity of the Nation’s forests and grasslands through the development of environmentally sound approaches to increase productivity of forest lands, improve sustainability of forest resources, and develop value-added materials derived from woody resources.

2. **Plant Production and Protection – Biology**
Enhancing crop production by applying biological approaches to, reduce the impact of harmful agents, develop new methods for plant improvement, and apply traditional plant breeding methods and new technologies to develop new food and non-food crop plants.
3. Animal Production and Protection
Develops innovative, marketable technologies that will provide significant benefit to the production and protection of agricultural animals.

4. Air, Water, and Soils
Develops technologies for conserving and protecting air, water and soil resources while sustaining optimal farm and forest productivity.

5. Food Science and Nutrition
Research focusing on developing new and improved processes, technologies, or services that address emerging food safety, food processing, and nutrition issues.
6. Aquaculture
Develops new technologies that will enhance the knowledge and technology base necessary for the expansion of the domestic aquaculture industry as a form of production agriculture.

7. Biofuels and Biobased Products
Promotes the use of biofuels and non-food biobased products by developing new or improved technologies that will lead to increased production of industrial products from agricultural materials.
8. Rural and Community Development
Applications may be submitted for the development of new technology, or for the utilization of existing technology, that address important economic and social development issues or problems in rural America.

Enhance crop production by creating and commercializing technologies that enhance system efficiency and profitability and that protect crops from pests and pathogens in economically and environmentally sound ways.
10. Small and Mid-Size Farms
Aims to promote and improve the sustainability and profitability of small and mid-size farms and ranches (where annual sales of agricultural products are less than $250,000 for small farms, and $500,000 for mid-size farms - hereafter referred to as small farms).
Develop a Potential Solution

• Logical response
• Responsive to testing
  • Initial
  • Replication with stakeholders
• In the public interest, resulting in:
  • Sustainable farm practices
  • Protection of natural resources and the environment
  • Creating safe, nutritious, and affordable food
  • Development of value-added food and non-food products from agriculture materials
  • Enhancing global competitiveness
  • Enhance economic opportunity and quality of life for people in rural areas
Research Process (cont.)

RESEARCH PROCESS

- **DEFINE THE PROBLEM**
  - Select a research topic

- **LITERATURE REVIEW**
  - Familiarize yourself with existing research

- **CONCLUSIONS**
  - Report the research findings

- **COMPARISON WITH EARLIER RESEARCH**

- **THEORETICAL INTERPRETATION OF THE RESULTS**

- **ANSWER THE EMPIRICAL RESEARCH QUESTIONS**

- **SELECT A RESEARCH DESIGN**
  - Choose one or more research methods: observation, experimentation, or surveys

- **CONDUCT RESEARCH**
  - Collect and analyze data
Internet Sources for Current/Completed Projects

**SBIR Award Listings**
https://www.sbir.gov/sbirsearch/award/all

**SARE Funded Projects**
http://mysare.sare.org/search-projects/

**Extension Risk Management Projects**
http://extensionrme.org/Projects/CompletedProjects.aspx?y=2013&i=0
Literature Review (cont.)

**Award Listing**

- **Company Name**: soybean
- **Sort By**: Awarded Year (descending)

**Note**: The Award Database is continually updated throughout the year. As a result, data for a given year is generally not complete until April of the following year.

**Displaying 1 - 10 of 18 results**

- **Improved Soybean Feed for Use in Aquaculture**
  - **SBIR: ARCADIA BIOSCIENCES, INC**
  - **Topic: 8.2**
  - Soybean meal has long been a critical input for animal feed in monogastric animals (such as chickens and pigs) as it provides an ideal protein profile to promote healthy, rapid animal growth at a competitive price. More recently, aquaculture, the fastest growing commercial animal protein segment, has sought to take advantage of the protein and cost advantages of soybean meal as an affordable propane...
  - **Phase**: Phase I 2015  Department of Agriculture

- **Leaf-specific post-emergent herbicide application**
  - **SBIR: CONCURRENT SOLUTIONS, LLC**
  - **Topic: 8.13**

United States Department of Agriculture
National Institute of Food and Agriculture
Literature Review (cont.)
Completed Projects

View the specific results of Extension Risk Management Education Completed Projects. Search projects from specific years, regions, states, or risk management education topics.

Search Criteria:
- **Region(s)**: Western ERME
- **State(s)**: All
- **Topic(s)**: Cash and futures pricing tools
- **Audience Group(s)**: All

Update Search Results

6 records returned

<table>
<thead>
<tr>
<th>Overview</th>
<th>Participation Summary</th>
<th>Keys To Success</th>
<th>Stories</th>
<th>Unexpected Results</th>
<th>Project Improvements</th>
<th>Results</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>

Expand All?  No  Yes

Barley Risk Management Education Project, Phase IV
Gain the Opinions/Support of Others

- **Strengths**
- **Weaknesses**
- **Opportunities**
- **Threats**

Group-think to bring your idea into focus as a project with wider application and in the public interest.

**RESOURCE:** “SWOT Analysis: A tool for making better business decisions”
Gain the Opinions/Support of Others (cont.)

RESOURCE: “SWOT Analysis: A tool for making better business decisions”
Questions Addressed by SWOT Group Discussion

1. Is there a real problem or opportunity to address?
2. Will the idea presented address this issue?
3. How many people (and who) will this project benefit?
4. How and when will measurement of the benefits take place?
Questions Addressed by SWOT Group Discussion

5. Are we the correct group to tackle the project; is this project consistent with my business plan?
6. How would the funding be applied?
7. Can we see ahead to Phase II?
8. Will this project benefit more than just stakeholders (will it address public interests)?
• Develop a research plan with:
  • Stated objectives that are logical
  • Questions consistent with the project
  • The activities focused on proving the feasibility of the approach or concept

• Concentrate on research aspects pointing to technical feasibility of the proposed solution.

• A valid, relevant, and innovative approach to achieve the identified results
Capacity and Fit

• Determine your role
  • PI must be employed by company and do at least 51% of total work

• What partners/additional skills are needed

• Does your business have the capacity to complete the work?

• Checkpoint: will doing this project enhance your business?
Determine Commercialization Potential

- **Phase I Award:**
  - Technical merit
  - Feasibility
  - Commercial potential

- **Phase II Award:**
  - Phase I results
  - Scientific and technical merit
  - Project’s commercial potential

- **Phase III – Commercialization Investments**
The Fully Developed Idea

- What is the project going to accomplish?
  - Who will benefit and why should people care?
  - Does this benefit you? Others like you? A larger segment of society?

- How will your process confirm your theory?

- How will you measure/report success?

- What will signal “Phase II?”
MODULE TWO RESOURCES

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https://www.sbir.gov/sbirsearch/award/all

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RESOURCE: “SWOT Analysis: A tool for making better business decisions”
SBIR Technical Training Team

**Don Albrecht**
SBIR Technical Training Project Leader
Director, Western Rural Development Center
Utah State University
don.albrecht@usu.edu

**Scott Dockum**
SBIR Program Coordinator
USDA NIFA
sdockum@nifa.usda.gov

**Charles Cleland**
National Program Leader
USDA NIFA
ccleland@nifa.usda.gov

**Brent Elrod**
National Program Leader
USDA NIFA
belrod@nifa.usda.gov

**Roberto Gallardo**
Southern Region
Mississippi State University Extension
roberto.gallardo@msstate.edu

**José L. Garcia-Pabón**
Western Region
Washington State University Extension
garciajl@wsu.edu

**John Mann**
North Central Region
Michigan State University Extension
mannjoh3@msu.edu

**Winifred McGee**
Northeast Region
Pennsylvania State University Extension
wwm1@psu.edu
Thank You!