GENERAL INFORMATION
The purpose of a research project proposal is to present a study concept to the Florida Department of Agriculture and Consumer Services Office of Agricultural Water Policy (OAWP) for funding consideration. Research priorities for this year include:

- Controlled release fertilizer literature review and preparation of Florida specific guidebook (statutory requirement)
- Identification of critical sources and flow paths, including the methods of addressing them
- Use of multiple cropping systems, cover crops, or alternative crops to reduce N leaching in high-recharge and excessively drained springs recharge areas
- New or enhanced BMPs, including nitrification inhibitors
- Tailwater recovery treatment for bacterial contaminants. There are ongoing concerns about using tailwater or reclaimed water on vegetables, partly because of the food safety modernization act but also because of vendor requirements for testing
- Biosolids used on ranches and concerns about offsite P movement or leaching
- Water treatment technologies and practices for on-farm or edge-of-farm application; regional water treatment technologies to be considered for research in coordination with FDEP and the WMDs
- ET-based and pulsed-based overhead irrigation for container nurseries
- Development of crop coefficients (if needed) for irrigated crops in springs recharge areas

The OAWP staff, with assistance of a Research Coordinating Committee, will identify specific research focus areas each fiscal year, based on the needs of the office.

PROCESS
The principal investigator will submit a draft research project proposal to be reviewed by the OAWP research project manager. Proposals should be prepared using the format below. The research project manager will review the proposed scope of work, and may return it to the principal investigator for revision. If the proposal is accepted, both parties will collaborate to refine the proposal for inclusion into a contract as a scope of work. To the extent practicable, the research scope of work and schedule of deliverables should coincide with the OAWP’s fiscal year, which runs from July 1 to June 30.

PROJECT PROPOSAL FORMAT

Proposed Project Title – (short and descriptive)

Principal Investigator -
Name:
Organization:
Address:
City, State Zip:
Email:
Phone:
Co-Investigators (list names)

BACKGROUND - describe statutory authority for study and why research funding should be allocated; should also describe the issue or problem, related previous work, and previous findings.

(Suggested boilerplate for university research contracts: Pursuant to the Florida Watershed Restoration Act (FWRA), section 403.067(7)(c)3, F.S., the Florida Department of Agriculture and Consumer Services (FDACS), Office of Agricultural Water Policy (OAWP), develops, adopts, and assists with the implementation of agricultural Best Management Practices (BMPs) to protect and conserve water resources. Funding for BMP projects that complement the OAWP's mission is consistent with FWRA objectives. In this regard, the University of ________ plays an important role in assisting the industry with implementing BMPs. Effective July 1, 2016, new research priorities have emerged per the requirements pursuant to Section 373.813, FS. This project proposes to...)

JUSTIFICATION - Clearly define how the study will address the OAWP’s research priorities and demonstrate how this study will build upon previous work, if any has been done. Alternatively, distinguish the study from previous work which may share similarities with the new proposal but has different methods and/or objectives.

PROJECT OBJECTIVES - Clearly state objectives or anticipated outcomes; bulleted lists are helpful.

METHODS - Describe scientific methodology and materials as they relate to the research objectives, and discuss experimental design, monitoring, data collection, applicable statistical analyses, etc. With the limited exception of “proof of concept” trials, methods should aim to provide data containing mean, standard deviation, and sample size of both control and experimental treatment groups to facilitate later data analysis.

For research projects where water quality monitoring will be conducted, please include the following section. “Monitoring Plan and Data Integrity”, in your proposal:

Monitoring Plan and Data Integrity

1. Monitoring Objectives – monitoring plan objectives should focus on collecting water quality data that will demonstrate the impact that BMPs or nutrient management tool(s) have on nutrient use efficiency, agricultural productivity, nutrient inputs to surface or groundwater, pollutants on site, water use efficiency, or a combination of each. Include information about how the data will be used, how much data are needed to address the monitoring objectives, the level of accuracy for analysis, and the timeline for monitoring.

2. Sampling location and selection – Identify sampling sites (stations) for the project and why the sites were selected. Include latitude/longitudes and a site map showing each sampling station.

3. Water Quality Indicators – Identify field measurements, parameters of interest, and any other indicators that will be used to evaluate the BMP or tool. Provide the name of the laboratory conducting analyses, the National Environmental Laboratory Accreditation Program (NELAP) accreditation status, certified analytical methods, and lab reporting limits for each indicator.
4. **Sampling Methods and Frequency** - Describe the methods for collecting and handling samples, sample containers and preservation, and frequencies required to demonstrate trends, BMP effectiveness, or impacts to agricultural productivity. Include any special circumstances that may trigger a sampling event, such as a major storm event.

5. **Quality Assurance/Quality Control Protocol** – Describe the system of management activities and quality assurance procedures that will produce reliable data that can be used to meet the monitoring objectives. Identify quality control measures that will reduce or eliminate sampling and analysis errors in the field and lab, including sample identification, identification of equipment or instruments to be used, and their calibration and maintenance requirements. List any quality control samples (e.g., duplicates, field blanks) that will be collected.

6. **Data Management** - Describe the data management plan for maintaining and distributing data, and for documenting site conditions and changes over time. Include how data will be tracked and stored and how data will be checked for errors. Describe types of data that will be used or collected that are not obtained through traditional sampling (e.g., weather station data).

7. **Meta-Analysis** - FDACS will periodically conduct a meta-analysis of data to compare BMP effectiveness results between research projects. To do this, minimum dataset elements are required for each research project, including a control mean, control standard deviation, control number of observations (replicates), treatment (trt) mean, treatment standard deviation, treatment number of observations (replicates), and other statistically valid endpoints. An example of how the minimum dataset elements may be presented is shown below.

<table>
<thead>
<tr>
<th>Example</th>
<th>Control mean</th>
<th>Control St. Dev.</th>
<th>Control Sample Size</th>
<th>Trt mean</th>
<th>Trt St. Dev.</th>
<th>Response variable and units</th>
<th>Trt Sample Size</th>
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</thead>
<tbody>
<tr>
<td>Vegetables (tomato)</td>
<td>20.80</td>
<td>15.24</td>
<td>3</td>
<td>3.77</td>
<td>1.37</td>
<td>Nitrate load (kg/ha)</td>
<td>3</td>
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<td><strong>Study</strong> Random Block</td>
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<td><strong>Control-Impact BMP</strong></td>
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<td>Tested difference</td>
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<td>between timed irrigation/moderate fertilization (control) with drip irrigation/moderate fertilization (treatment).</td>
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<td><strong>Replication</strong></td>
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<td>Groundwater under plots</td>
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<td>sampled for 3 years. Data presented as yearly average for each treatment.</td>
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<td><strong>Calculation</strong></td>
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<td>Three years were averaged for mean and standard deviation.</td>
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</table>

8. **Data Analysis and Assessment** – Describe how the data will be analyzed, i.e., what relationships between different environmental parameters will be analyzed, the type of
statistical analyses to be used for assessing objectives, and the levels of change that determine significance. For example, nonparametric statistical test, such as the Seasonal Kendall test, may be preferred to determine if statistically significant changes have occurred for each indicator. If sufficient data are present, test for trends on the “before” data and on the “after” data.

9. **Reporting** - Identify the intended reporting frequency, content, and format of monitoring progress reports, and expected completion and submission dates of a final monitoring report. Indicate if the monitoring reports will be submitted as separate reports for the research project deliverables, or if they will be included with associated project deliverables.

**DELIVERABLES** - Provide a brief summary of each task and related outcome and a concise description of the products associated with each task. Include a minimum performance standard for each deliverable, due date, and an estimated budget for each year. Consider the following questions to help develop deliverables:

- What equipment purchases are you requesting that are needed to conduct this study?
- What salaries are you requesting to conduct this research? List each position (PhD, students, OPS, TEAMS, Biological Scientists, etc), hours required for the project, the percentage of their time that they will be dedicated to this project, and rate (hourly or salary).
- What continuing expenses do you anticipate throughout the project (e.g., sampling, equipment rentals, seasonal supplies like seeds or herbicides).
- What is the final product and when will it be submitted?

**CONTRACT DEVELOPMENT** - The OAWP uses a model contractual service agreement, or contract, that is approved by legal and administrative staff. Contracts are usually constructed on a “cost-reimbursement” basis, meaning that recipients are reimbursed for expenses after the deliverables, appropriate documentation, and a valid invoice are received.

The project proposal is incorporated into the contract as the scope of work, and is enforceable as part of the contract. The OAWP contract manager will provide a final draft (in electronic format) of the entire contract to the principal investigator for review before the contract is executed.