



Applied BioEnergy Research Program (Appendix A)

2022 Internal Competitive Grant Program
Request for Proposals

OVERVIEW

In the 2007-09 biennium, the Washington State Legislature funded a joint Washington State University (WSU) and Washington State Department of Agriculture (WSDA) program targeting applied bioenergy research. The funds were requested by WSU and WSDA to undertake near term, applied research and extension needed to successfully implement the Energy Freedom program and bioenergy initiatives enacted in 2006. Since 2007, WSU's Agricultural Research Center (ARC) and WSDA have collaborated on this research effort. The Appendix A funds have been directed to research projects coordinated by the WSU Department of Crops and Soils, as the Washington Oilseed Cropping Systems (WOCS) project, and to research projects coordinated by the WSU ARC in the area of energy conversion via anaerobic digestion of dairy wastes (Applied BioEnergy) designed to support Washington State dairy and cattle farmers.

The Applied BioEnergy program has evolved since its inception. The primary focus of the 2022 request for proposals (RFP) is on nutrient management and energy recovery from dairy wastes utilizing anaerobic digestion or other methods of processing that are currently utilized or emerging in the industry. This part of the manure treatment process is currently a high priority and limiting factor for further adoption of energy recovery and environmental quality objectives. This focus area has been retained since the last biennium following consultation with dairy farmers situated on both sides of the Cascades and WSDA leadership. A secondary focus of this RFP is to inform members of the dairy industry and impact dairy practices. This could be accomplished by direct cooperation with industry members or outreach to the broader dairy community. A third intent for the RFP is to generate data that will be used to increase competitively funded research related to bioenergy and nutrient management from federal agencies and industry.

Note: This program is not designed for supplementing currently funded projects or as a substitute for other funding. If a proposal appears to overlap with currently funded grants, the proposal must include an explanation of the novelty of the project and the need for funds in the context of current support so that reviewers can evaluate the overlap.

TIME LINE FOR THE 2020-2021 APPLIED BIOENERGY PROGRAM:

Sept. 27, 2021	RFP issued
Nov. 15, 2021	Proposals due to CAHNRS Office of Research (electronic submission ARCGrants@wsu.edu , cc. gangd@wsu.edu)
Dec. 15, 2021	Anticipated announcement of awards

WHAT ARE THE CHARACTERISTICS OF SUCCESSFUL PROJECTS?

Awarded projects will focus on issues related to nutrient management of dairy wastes, including nutrient recovery, utilization of wastes for bioenergy or bioproducts, and barriers to adoption (social and economic). Collaborative projects that bring together a team of faculty with complementary skill sets that will comprehensively address an area are encouraged – as are novel research teams.

Projects will be judged based on how well they meet three criteria:

- A description of the issue being researched, industry/stakeholder need and involvement, and how it contributes to development of solutions for nutrient management of dairy wastes applied to agricultural lands; solutions should be adaptable to, or compatible with, current dairy production systems in the State;
- A description of how the data generated from these grants will enhance the competitiveness of efforts to obtain additional external support;
- A description of how the project will contribute to graduate education (if applicable).

WHO IS ELIGIBLE TO APPLY?

The lead PI *must* be a faculty member in a CAHNRS unit. Research Professor track faculty members are eligible to be lead PIs but Associates in Research, Post-Doctoral Associates, Adjunct Faculty, and Courtesy Faculty members are not.

WHAT WILL BE THE DURATION OF THE GRANTS?

The maximum project duration is 2 years, starting January 1, 2022. Proposals can be written for up to two years. Initially, funding will be provided only for the first year, but to facilitate supporting graduate students, the first-year budget can run through June 30, 2023. For a second year of funding, a proposal – which can be identical to the initial proposal – must be submitted along with an Annual Progress Report and may be approved, if:

- Satisfactory progress toward the originally proposed objectives is documented;
- Applications for significant alternative sources of competitive non-university funds have been submitted through the CAHNRS Office of Research or WSU Extension; and
- Adequate funds are available. A budget must be submitted for the second year of support.

WHAT FUNDING AMOUNTS WILL BE PERMITTED?

Proposals may be funded up to **\$60,000** over the possible two-years of a project. Efficiency in using resources will be an important element of the review.

Note on Accountability: PIs who have had previous Appendix A funding must include a brief summary of their accomplishments as a result of the previously funded project, including publications, intellectual property, commercialization efforts, and extramural proposals submitted and awarded. Outreach activities should be briefly described in reports along with any extension publications or coverage in the popular press.

WHAT CRITERIA WILL BE USED TO EVALUATE PROPOSALS?

Ability of the project to define and address a nutrient management of dairy wastes issues. (25 points)

The proposal should clearly describe why the subject of the proposal will fill an important knowledge gap related to management of dairy wastes in Washington State. The rationale and significance of the problem must be clearly articulated, including demonstration of stakeholder support for the work and how they might ultimately benefit from this or subsequent research, the information gaps to be filled (the researchable questions) and how the research will contribute to an overall solution.

Industry engagement in formulating research plan. (10 points)

The Applied BioEnergy program greatly benefits from stakeholder input, both as part of priority setting and as ongoing integration with the dairy community. WSU faculty are highly encouraged to make connections and engage industry throughout the life of the project. Documented involvement through a Letter of Support will be reviewed favorably.

Appropriate research and extension methodologies and approaches. (20 points)

The proposals will be reviewed to evaluate whether the approach and methodology, as articulated, are sufficient to accomplish the stated objectives. This should also include extension or outreach activities to make the industry and public aware of ongoing research.

Interdisciplinary, team-based approach to address the issue(s). (10 points)

Not all issues are interdisciplinary in nature; but for the many that are, it is important to describe the multi-disciplinary and interdisciplinary components of the project. The formation of teams to address the issue is strongly encouraged.

Faculty capacity to successfully complete the project. (10 points)

The researchers listed for the project should be actively involved in the project and have a documented history of research productivity that is appropriate for the research being proposed. The specific role of each faculty member listed on the proposal must be explicitly and clearly described and the component of the project that depends on each faculty member's effort must be stated. Is the budget appropriate for the scope of work?

Ability of project to catalyze future extramural support. (25 points)

A primary objective of this grant program is to encourage faculty to develop preliminary data that will enhance the competitiveness of future competitive grant proposals. This anticipated outcome(s) must be clearly delineated. Potential funding sources and the project leaders' strategy for developing a competitive proposal must be described. Anticipated extramural grant applications that will be facilitated by the use of these funds must be explicitly described in the grant proposal (agency, program, application deadline). Requests for 2nd year funding must be accompanied by documentation that competitive extramural grant application(s) have been submitted.

Note the following definitions of targeted deliverables:

- **Outputs** can be products such as journal publications, web-based information, extension or other publications, presentations, workshops, seminars, or other tangible items, activities, or events;
- **Outcomes** are new or modified behaviors, practices, or policies in Washington that result largely from the efforts and outputs of a project or program;
- **Impacts** are the expected or potential social, economic and/or environmental benefits to specific audiences and the broader society that could be attributed to a project.

PROPOSAL GUIDELINES

The text of the proposal narrative must not exceed six (6) pages written in 12 pt. font, with 1" margins, and submitted as a PDF. The budget must be submitted using Microsoft Excel.

1. The narrative must address each of the evaluation criteria, and must include:
 - a. Title, lead PI, department, and contact information; cooperating PI(s) name(s), department(s) and contact information
 - b. Requested duration
 - c. Amount requested for the first year and estimate of the funding to be requested in the second year, if applicable
 - d. Project abstract, including brief description of subject being addressed and the research strategy that is proposed. (250 words)
 - e. Problem Statement including rationale and significance of the problem from the perspective of Washington stakeholders. It should be made clear how the research conducted in this project will close existing gaps in our ability to conduct research that addresses an applied bioenergy research for Washington's stakeholders
 - f. Objectives/Aims
 - g. Research Methodology. Intended outputs must be clearly stated
 - h. Describe how these results will be critical in positioning the group to successfully obtain extramural funding. A significant part of the evaluation will be to critically evaluate the project leader's strategy for using these funds as a foundation for obtaining additional competitive funds.
 - i. Description of the Team and Each Person's Responsibility
 - j. Anticipated Competitive Extramural Grant Application(s) that will emerge from this project (agency, program, application deadline)
 - k. Graduate Student Participation in the project, including the name of the graduate degree program in which the student(s) will enroll. These students may be supported by the project or have other relationships to it.

For a second year of funding, a proposal, which can be identical to the initial proposal, must be submitted at the following year deadline and may be approved, if:

- Satisfactory progress toward the originally proposed objectives is documented in a progress report of four pages or less;
- Applications for significant alternative sources of competitive non-university funds have been submitted through the CAHNRS Office of Research/ARC;
- It contains a budget for the second year of support that lists the amount received in the first year, first year funds remaining, the amount requested for the second year and a plan for how the second-year money would be spent and;
- Adequate funds are available.

2. Appended materials (these are not part of the six-page limit)
 - a. Progress Report (≤ 4 pages) and summary of results from previous Appendix A project(s) (1 page), if applicable.
 - b. Reference citations from the body of the proposal
 - c. CV (2-page maximum) of each faculty member participating in the project as PI/co- PI.
 - d. Detailed budget (1-page) including a description of any matching or leveraged dollars. Do not include any F&A. Salaries and wages must be included but not benefits. Do not include graduate student tuition (this is covered as a benefit). Graduate Students should be paid at the appropriate Graduate Research Assistantship level. *Salary and benefits for permanent faculty and staff cannot be paid from the requested funds*. Resource use efficiency should be clear throughout the proposal.
 - e. Completed WSU Assurance Form (template provided with RFA).
 - f. Completed Current and Pending Support Form (template provided with RFA).
 - g. Discussion of overlap of the proposal with currently funded research.

Submit the proposal electronically to the CAHNRS Office of Research/ARC by 5 PM, November 15, 2021. All proposals MUST be emailed to ARCGrants@wsu.edu and gangd@wsu.edu.

Review Process: All proposals will be reviewed by a panel that consists of members from CAHNRS leadership and faculty, WSDA, and stakeholder representatives.

Final Report: In addition to the interim report necessary for second year funding, a Final Report is required for each project at the end of the approved funding period. Appropriate metrics (outputs, outcomes, impacts) should be included in the Final Report that will be indicative of science-based research and outreach that will help achieve longer-term objectives associated with improvements in the dairy industry. A list of anticipated publications, field days, website URLs, etc. should be included in the Final Report. Within six months of the completion of the proposal, the project PI must provide a copy of a proposal submitted to a competitive funding source or to a corporate sponsor. Additional details concerning the timeline and format of reporting will be provided to those receiving awards.

Questions: If you have questions about this RFP or the Applied BioEnergy Program, please contact David Gang (gangd@wsu.edu).

CAHNRS Office of Research programs and employment are available to all without discrimination. Evidence of noncompliance may be reported to WSU Compliance & Civil Rights at ccr@wsu.edu and 509-335-8288.