

Forever Green Agriculture Initiative (2016) Call for Proposals

The Forever Green Agriculture Initiative is accepting applications for proposals that focus on the development of perennial and winter annual crops and cropping systems for addressing Minnesota agriculture's productivity, efficiency and adaptability to variable climates. Projects relevant to germplasm development and breeding, production and agroecology, or end-use development are all encouraged. This includes projects that lead to the commercialization of the new crops and associated new agricultural products. Plant species and cropping systems of interest include: herbaceous and woody perennials and winter annual crops. Priority will be given to proposals that are developed around established projects where the new funds could be used to expand or enhance existing activities.

Estimated number of awards: 5 to 15

Anticipated funding amount: Total funds available \$1,000,000. Individual projects will be funded up to \$150,000, and up to a maximum of \$200,000 if the proposal includes a post-doc position, with funding available over 3 years.

Application Process:

Submit proposals by **4:00PM, Monday, August 15 2016.**

Email complete application to:

Laura Olevitch (olevitch@umn.edu)

Completed applications must include the following:

1. Cover page
2. Proposal narrative (3 page max.)
3. Literature cited (no page limit)
4. Charts/graphs/figures (optional; 1 page)
5. Quarterly timeline ([template](#))
6. Budget ([template](#))
7. Budget narrative (1 page max.)
8. PI curriculum vitae (2 page max.)
9. Other funds (1 page max.)

Format: single-spaced, point size of 12 or higher, 1" margins

All applicants will receive a confirmation of proposal receipt via email.

For questions regarding this proposal and any submission instructions, email Laura Olevitch (olevitch@umn.edu).

Announcement:	7/1/16
Proposal Deadline:	8/15/16
Award Date:	9/15/16
Start Date:	9/15/16
End Date:	6/15/19
Progress report:	12/1/16
Progress report:	6/1/17
Progress report:	12/1/17
Progress report:	6/1/18
Progress report:	12/1/18
Final report:	6/15/19

Cover Page

To include the following:

- Proposal title
- Principal Investigator and home department, email address, and phone number
- Names of all Co-Investigators and Collaborators, and their respective home department(s) and role(s) on the project
- Total dollar amount of request
- Abstract: (250 word max) summary of the project's goals and objectives; approach and methodology; and anticipated outcomes, written in non-technical terms.

Proposal Narrative (3 page max.)

- *Rationale*
Provide background and need for the proposed work. Explain why the research you are proposing is important and timely to advance Forever Green crops and cropping systems.
- *Goals and Objectives, and Relevance to Forever Green Initiative*
Present measurable objectives for research. Describe how these goals and objectives will advance the protection of natural resources while increasing efficiency, profitability and productivity of Minnesota farmers.
- *Approach and Methodology*
Describe the approach, scientific methodology, experimental design, and data to be collected (or secondary data that will be analyzed). Explain how these methods are appropriate for the research project.
- *Deliverables*
Describe the near-term results or products you expect from the proposed research. Results and/or products should be specific, clear, and measurable.

Budget and Budget Narrative (narrative 1 page max.)

Outline the main proposed expenditures. Please use the [budget template](#) included with this call for proposals. The budget narrative provides justification for budget line items, and should generally track with the budget and the proposed research plan goals and objectives.

Other Funds (1 page max.)

If any PI or co-PI identified on the proposed project has *related* current or pending support, provide a summary of how this proposed research fits and complements current and pending research. Provide the following information on each related project:

- Project Title
- Funding Agency
- Total Funds
- Award Period
- Status (current, pending, planned for submission in the near future)

In cases where current or pending support would otherwise exceed one page, report on the projects most closely related to the proposal. Reviewers will be asked to consider the overall body of work and how this proposed research fits within the investigators larger area of interest research enterprise.

Proposal Review Process and Notification

Proposals will be reviewed by a committee composed of CFANS and CBS faculty. Reviewers may recommend whole or partial funding of a project.

Evaluation Criteria	Maximum Score
Goals and Objectives	
Proposed project advances the goal of developing perennial or winter annual crops and associated agricultural products for new crop enterprise systems.	20
Proposed project focuses on research that will advance the protection of natural resources while increasing efficiency, profitability and productivity of Minnesota farmers.	20
Project will enhance and expand already established Forever Green Initiative projects.	10
Objectives are measureable, specific, and clearly stated.	10
Technical and Scientific Merit	
The plan for carrying out the proposed activities is well-reasoned, well-organized, and based on a sound rationale. Proposed project explores creative, original, or potentially transformative concepts and can reasonably be accomplished with in the planned budget and timeline.	15
Qualifications and Integration of the Research Team	
Project team is sufficiently comprised of members who have the necessary skills and expertise to accomplish the proposed research.	10
Project Need and Timeliness	
Research is necessary at this time in order to advance the Forever Green Initiative. An effective timeline is provided.	15
TOTAL	100

Grant Requirements

Upon award, principal investigators of funded projects will be required to provide semi-annual progress reports and a final report. Reports to include:

- Activities completed, including specific deliverables
- Progress made toward the original goals of the project
- Long-term sustainability and impact of the project
- Additional funds secured or applied for to support continuation of the project
- Details on how the funds were used, and any changes made in the use of the grant funds from your original proposal

Further guidance on reporting requirements will be provided upon award.

Failure to meet these requirements may lead to loss of funds. Projects must be completed within the allotted timeframe. No-cost extensions will not be allowed.



The Forever Green Initiative: Developing New Perennial and Winter Annual Crops to Enhance Minnesota's Soil and Water Resources



Why Forever Green?

Preservation of our natural resources is important to the quality of life and health of all Minnesotans. Among these resources, clean water is one of the most important to the citizens of the "Land of 10,000 Lakes."

- The health of Minnesota's lakes, rivers, and ground water is threatened by non-point sediment and nutrient pollutants originating from urban and agricultural systems.
- The human health risks, ecosystem impacts and economic losses related to degraded water resources result from land-use practices in both urban and rural areas.
- Agriculture can provide the solutions that preserve and conserve two of Minnesota's most precious resources, soil and water.



Forever Green

For Minnesota to meet proposed water quality goals, winter annual and perennial crops need to be integrated into Minnesota's agricultural landscapes. The **Forever Green Initiative** at the University of Minnesota is positioned to develop these new winter annual and perennial crops, with associated efficient farming systems, that will lead to improved water quality, and management of water quantity, while bolstering the rural and agricultural economy with high-value, commercially marketable food, feed, and fuel products. Perennial and winter-annual crops—working in tandem with summer annuals—can capture solar energy, water and nutrients with very high efficiency.

Specifically, these production systems can:

- Diversify economic opportunities for Minnesota's farmers, through the production of new sources of food, feed, and high-value biomaterials, without interfering with current annual production systems.
- Provide ecosystem services such as clean water, healthy soil, pollinator forage and habitat.
- Enable abundant production despite climate variability and new pest and disease pressures.
- Enhance rural communities by creating new industries based on renewable agricultural resources and employment opportunities.
- Attract high quality talent to the University of Minnesota to meet the future workforce needs of the agriculture, food, energy and natural resource based industries in Minnesota.



PERENNIAL CROPS

- Intermediate wheatgrass Kernza® – wheat-like grain, forage, biomass
- Perennial sunflower – edible seeds, oil
- Native polyculture grassland mixtures – biomass, forage, natural products
- Perennial flax – edible oil
- Kura clover – N-fixing cover crop
- Silphium – edible oil



Camelina



Native plant polycultures



Silphium



Hairy vetch

WINTER ANNUAL CROPS

- Pennycress – oil, biofuel, cover crop
- Camelina – edible oil, biofuel, cover crop
- Winter barley – food, malting barley
- Hairy vetch – cover crop, N-fixation



Perennial sunflower



Elderberry

NATIVE WOODY CROPS

- Hazelnut – nuts, edible oil
- Shrub willow – biomass
- Elderberry – antioxidant-rich fruit
- Agroforestry – woody and herbaceous crop mixtures for feed, food and fuel



Perennial flax



Hazelnut

WHO IS FOREVER GREEN?

Forever Green is composed of teams of researchers, farmers, food product developers, and entrepreneurs from all aspects of the agricultural supply chain whose goal is to develop and promote the use of new crops that enhance water and soil quality. Each of the new agricultural enterprises listed above requires a unique strategy for implementation. The Forever Green team is focused on ensuring that these enterprises strengthen Minnesota's economy while protecting water, soil, and other natural resources.

WEBSITE

<http://www.forevergreen.umn.edu>

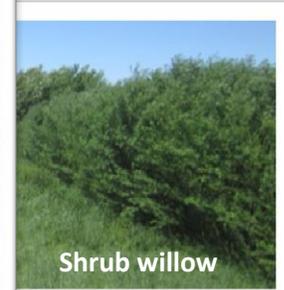
Contact

Dr. Don Wyse, wysex001@umn.edu, 651 470 9878

Dr. Nick Jordan, jorda020@umn.edu



Kura clover



Shrub willow



Pennycress



Kernza® – Intermediate wheatgrass