Environment and Natural Resources Trust Fund

2026 Request for Proposal

General Information

Proposal ID: 2026-217

Proposal Title: Supporting Critical Capacity for Minnesota Plant Pathogen Detection

Project Manager Information

Name: Brett Arenz

Organization: U of MN - College of Food, Agricultural and Natural Resource Sciences

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Project Basic Information

Project Summary: The requested funding would bridge a projected budget gap at the UMN Plant Disease Clinic, preserving its critical capacity to be a diagnostic resource for Minnesota farmers, businesses, and citizens.

ENRTF Funds Requested: $176,000

Proposed Project Completion: June 30, 2029

LCCMR Funding Category: Small Projects (G)

Secondary Category: Land (F)

Project Location

What is the best scale for describing where your work will take place?

Statewide

What is the best scale to describe the area impacted by your work?

Statewide

When will the work impact occur?

During the Project and In the Future

Narrative

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Plant diseases can have devastating effects on natural ecosystems, rural and urban landscapes, and agricultural practices. Accurate and timely diagnosis of plant pathogens is the critical first step for successful management and mitigation of these effects.

The UMN Plant Disease Clinic (PDC) is the only laboratory in the state that offers diagnostic testing for plant diseases and management recommendations to the general public. In 2024 alone, the PDC received 2300 submissions, representing over 200 different host plant species received from 63 of 87 MN counties (see visual aid). Submitters included wildland resource managers, arborists, farmers, crop consultants, commercial horticultural companies, state and federal agencies, and individual homeowners. It also serves on the frontline for surveillance of new and emerging invasive plant pathogens to the state and communicates important pathogen detections immediately to state and federal plant protection officers.

The operating budget of the PDC (staff salary and lab supplies) has been traditionally generated from a combination of sample fees and an annual federal grant from the National Plant Diagnostic Network (NPDN). However, recent decreases in NPDN funding have resulted in a projected budget shortfall of approximately $50,000-$55,000 per year, threatening future diagnostic capacity and even clinic closure.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

Closing the gap between revenue from sample fees and operating costs will allow the Plant Disease Clinic to remain open and in full-time operation and capacity for the three year duration of the grant. During that time we will offer plant diagnostic services and management advice to the general public of Minnesota, state and federal agencies, commercial companies and other stakeholders invested in plant health. Diagnostic services offered include microscopy, serological tests, and molecular tests into all microbial plant pathogen groups including phytopathogenic fungi, bacteria, viruses, and nematodes. We also diagnose and ID insect pests of MN agricultural crops, ornamental plants and ecologically important native plant species. More information on these tests is available at our website, PDC.UMN.EDU. In addition to reporting directly and promptly to our submitters, we will communicate significant plant pathogen detections promptly with state and federal agencies such as the Minnesota Department of Agriculture and USDA Animal and Plant Health Inspection Service (APHIS) so they can determine if further action or intervention is required. We will also collaborate closely with the MN Department of Natural Resources in their efforts to monitor and manage important forest pathogens and insects pests.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

This project directly addresses the LCCMR funding priority Land, item 2 "Enhance education, technical assistance, or public outreach to promote the application of practices beneficial to the environment, natural resources, and all Minnesotans". The land category includes "Minnesota's public and private lands – including forests, grasslands, wetlands, and agricultural lands", all of which can be dramatically affected by plant pathogens.

By providing plant disease diagnostic services and subsequent management recommendations the PDC provides critical technical assistance to Minnesota homeowners, agencies, businesses, wildland managers, and farmers. The PDC is also the primary plant diagnostic lab utilized by the MN DNR.

Activities and Milestones

Activity 1: Diagnostic work and reporting on Minnesota plant pathogens

Activity Budget: $176,000

Activity Description:
Plant samples submitted to the Plant Disease Clinic (PDC.UMN.EDU) are first evaluated for overall health and disease symptoms. Symptomatic tissue is then examined via microscopy, serological (antibody-based), and molecular tests (DNA and RNA-based) to determine identify of the microbial pathogen primarily responsible for disease symptoms. Based on diagnosis, relevant and current management recommendations are provided along with the diagnostic report to the submitter. Diagnostic staff also field subsequent questions from the sample submitter on the diagnostic report or implementation of management advice.

If significant pathogens are detected, such as pathogens new to the state or country, USDA select agents, or pathogens on the MDA Priority Pest List, relevant state and federal authorities are also immediately notified (State Plant Regulatory Officer at the Minnesota Department of Agriculture and State Plant Health Director at the USDA Animal and Plant Health Inspection Services respectively). For significant pathogens to the state or country, further confirmation may be required at USDA testing labs.

Annual diagnostic data is also submitted to the National Data Repository at the National Plant Diagnostic Network, which is a resource used by plant diagnosticians and epidemiologists to track the movement of plant pathogens at the state and federal level.

Activity Milestones:

Description	Approximate Completion Date
Diagnostic work and reporting of MN Plant Pathogens	June 30, 2029
Report significant and critical plant pathogens detections immediately to relevant state and federal agencies	June 30, 2029
Summarize and analyze general diagnostic data annually	June 30, 2029

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?

The project will identify new and emerging plant pathogens to the state. Discoveries can generate interest in new projects into research/management of significant pathogens in the state and can lead to new funding opportunities and partnerships with state and federal agencies that are tasked with protecting natural plant ecosystems and agricultural land. Data generated from the project will be reported annually to collaborators at the state and federal level including the MDA Plant Protection Division, MN DNR, and the National Plant Diagnostic Network. Significant finds of new state plant pathogens will generate new first report publications in scientific journals.

Project Manager and Organization Qualifications

Project Manager Name: Brett Arenz

Job Title: Teaching Associate Professor and Director of UMN Plant Disease Clinic

Provide description of the project manager's qualifications to manage the proposed project.

Dr. Brett Arenz received his PhD in Plant Pathology from the University of Minnesota in 2010. He has been serving as a contract (non-tenure track) faculty member in the Plant Pathology department and director of the Plant Disease Clinic (PDC) at the University of Minnesota since 2013. As part of his faculty role he has taught numerous undergraduate and graduate courses in plant pathology and microbial biology. Since working in the PDC he has diagnosed tens of thousands of plant disease samples as well as providing management recommendations on the reports sent to sample submitters. He has also provided formal training opportunities for undergraduate and graduate students in the Plant Disease Clinic, to help train the next generation of plant diagnosticians. He has authored numerous first reports of new pathogens to the state and country in relevant scientific journals. He is a long term member of the American Phytopathological Society as well as the National Plant Diagnostic Network. Most recently he served as chair of the NPDN Professional Development Committee, whose goal is to provide comprehensive training opportunities to new and current plant diagnosticians in labs around the country. He also has a long history of collaborating with organizations such as the Minnesota DNR, MDA Plant Protection Division, the USDA Plant and Animal Health Inspection Service and the Federal Forest Service on projects involving detection and monitoring of important plant pathogens in the state.

Organization: U of MN - College of Food, Agricultural and Natural Resource Sciences

Organization Description:

The UMN College of Food, Agriculture and Natural Resources vision statement is: "To advance Minnesota as a global leader in food, agriculture, and natural resources through extraordinary education, science-based solutions, and dynamic public engagement that nourishes people and enhances the environment in which we live."

The Plant Disease Clinic (PDC) is a specialized diagnostic laboratory based within the Plant Pathology department in the CFANS. More specifically the description that is posted on the Plant Disease Clinic website reads as follows: "The University of Minnesota Plant Disease Clinic is a multi-disciplinary diagnostic laboratory that provides testing for: fungal, bacterial, viral, and other plant health conditions for commercial growers and the general public on a fee-for-service basis. The goal of the Plant Disease Clinic is to provide our clients with an accurate, unbiased diagnosis."

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Manager of Plant Disease Clinic		Manages overall processes and diagnostic activities at the PDC, diagnoses samples, sends diagnostic reports			36.6%	0.54		$83,000
Diagnostician		Intakes samples, diagnoses plant samples, sending diagnostic reports			32.3%	1.2		$93,000
							Sub Total	**$176,000**
Contracts and Services								
							Sub Total	-
Equipment, Tools, and Supplies								
							Sub Total	-
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
							Sub Total	-
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								

							Sub Total	**-**
Other Expenses								
							Sub Total	**-**
							Grand Total	**$176,000**

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
			State Sub Total	**-**
Non-State				
			Non State Sub Total	**-**
			Funds Total	**-**

Total Project Cost: $176,000

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: 73f9a3a1-336.pdf

Alternate Text for Visual Component

A brief summary of sample information and locations from the Plant Disease Clinic from samples received in 2024 to show the wide range of clientele and locations served in Minnesota during the previous year. Samples received from 63 of 87 MN Counties in 2024....

Supplemental Attachments

Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other

Title	File
Authorization for submission from SPA	09b57b7a-fe7.pdf
Support letter from MDA	fde5444b-022.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Do you understand that travel expenses are only approved if they follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

N/A

Does your project have potential for royalties, copyrights, patents, sale of products and assets, or revenue generation?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

No

Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing $10,000 or more or large-scale stream or wetland restoration?

No

Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services (as defined in Minnesota Statutes section 299C.61 Subd.7 as "the provision of care,

treatment, education, training, instruction, or recreation to children")?

No

Provide the name(s) and organization(s) of additional individuals assisting in the completion of this proposal:

Crystal Langeberg and Sue Kilber, University of Minnesota

Do you understand that a named service contract does not constitute a funder-designated subrecipient or approval of a sole-source contract? In other words, a service contract entity is only approved if it has been selected according to the contracting rules identified in state law and policy for organizations that receive ENRTF funds through direct appropriations, or in the DNR's reimbursement manual for non-state organizations. These rules may include competitive bidding and prevailing wage requirements

N/A