

Northwest Potato Research Consortium* Request for Concept Proposals and Research Review Process and Schedule

DRAFT

*A Cooperative Effort of the Potato Commissions of ID, OR, & WA

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Background

In February 2012 the state potato commissions in Washington, Idaho, and Oregon launched a cooperative effort in funding research. One aim of this initiative is to increase cooperation and efficiency of the research and extension programs funded by the three potato commissions totaling about \$1.5 million annually. A second aim is to facilitate production of competitive grants targeting other sources, including federal grant-funding programs, for potato research in the Northwest. Potato production across the region is comparable and faces similar research gaps. For the *ninth* year, this research funding will be allocated through a cooperative 3-commission research review process during the fall-winter of 2021-22. A nine-member Consortium board is responsible for reviewing research and making funding recommendations to the commissions. They also seek input from a wide range of growers and other industry professionals in all three states.

Scope

The Consortium funds research projects on all aspects of potato production, breeding/variety development, genetics, and storage. The Consortium is not seeking proposals dealing human health effects of potato, nor development of food products or food processing technology. For research in these areas, other funding sources are more appropriate such as Potatoes USA (<https://potatoesusa.com/>) and the Alliance for Potato Research and Education (APRE; <https://apre.org/>).

All persons contemplating a new project should consult the list of funded projects attached hereto (see below) to avoid proposing a project that duplicates or overlaps with existing research. We welcome scientists new to our funding to engage with us. A good first step is to contact Consortium Manager Dr. Andy Jensen and discuss how your expertise might fit the research needs of the potato industry. Other valuable sources of guidance and input on research ideas are the established potato research and extension scientists across the region and staff and commissioners of the individual state potato commissions.

The Consortium encourages collaboration across state borders and disciplines. When considering a joint proposal, **please be sure that the proposed work is truly collaborative, i.e., all parties work together toward an agreed-on set of goals,**

objectives, and methods. All cooperating scientists must be involved in writing and editing a collaborative proposal to the Consortium (including concept proposals). Finally, the Consortium recognizes that some research is best handled by a single lab or scientist and is interested in teams and collaboration only when it benefits the quality of the research.

Extension-specific projects currently funded by the potato commissions continue to be single-state projects and are not subject to Consortium review. Each commission has a mechanism in place for review and approval of such extension funding.

The commissions agree, however, that all projects that are primarily research-oriented must be submitted through the Consortium process, as described below. This is true regardless of how that project was ultimately funded/handled during the past several years. If it is primarily research, it must come through our 3-state Consortium process. The only exceptions to this rule are projects that are specifically requested by an individual commission.

Timeline for fall/winter of 2021-22

Concept Proposals

Scientists will assemble brief concept proposals (2 pages max, format below) describing the research subject and existing knowledge, their team, and their project objectives and rationale. The Consortium board considers it important that concept proposals show that relevant literature has been consulted in project idea development. **All projects must submit concept proposals, even if they were funded last year.** As always, there is no guarantee that continuing projects will be funded. Concept proposals must be submitted to Andy Jensen (ajensen@potatoes.com) by midnight on October 13, 2021. If requested well before the due date, Andy Jensen is available to read and provide comments or suggestions on draft concept proposals.

Concept proposals will be provided to Consortium board members, who will review them and decide which to invite for the full proposal process. They will also make suggestions and comments for PIs to consider while preparing their full proposals. **Presentations will not be required of PIs at the concept proposal stage.** Announcements regarding which proposals are invited to the full proposal process are planned for the first week of November.

Full Proposals

Scientists invited to prepare a full proposal will be provided formatting instructions and review criteria during the first week of November. Full proposals will be due by midnight on December 15, 2021.

Proposal presentations: February 23-24, 2022, tentatively Boise, Idaho, Best Western Vista Inn (near the airport): *This change to later in February was made carefully and deliberately to allow reviewers to have both proposals and annual reports in hand during their reviews.* Scientists will be scheduled to present full proposals and answer questions

from a group composed of potato industry members. Proposal presentations, with PowerPoint if desired, will be allowed about 15 minutes each and should include a project justification, hypotheses to be tested, objectives, methods, and progress made to date. Presenters should allow opportunity for questions from the audience of industry members. Projects on related topics will be grouped together to the extent possible. *This will be an in-person meeting unless COVID restrictions return.*

Industry members from each state will be present to help rank and comment on each proposal. These industry members (30-50 persons in total) are invited by the potato commissions and represent growers, processors, chemical registrants and distributors, consultants, etc.

Our goal is to have discussion among all present, i.e., scientists and industry members, about each proposal. Following the discussions, and rankings by all industry members in attendance, the Consortium board will arrive at decisions regarding projects to fund for the coming year and make formal recommendations to the three Commission boards.

Reporting requirements for funded projects will be distributed with award notifications in the spring, and in a document posted at <https://nwpotatoresearch.com/>.

Concept Proposal Submitted to the Potato Research Consortium (2 pages maximum length)

Title: The title of the project should be as informative as possible, yet brief.

Year Initiated: xxxx. Current Year: 2022-23 Terminating Year xxxx.

(Use a fiscal year format for years – 202X-2X. The period shown under "Year Initiated" would thus be the period that funding was first received for the project. The "Terminating Year" is the last period for which funding will be requested under the project; ongoing projects funded for many years should indicate so using the word "ongoing" here.)

Personnel & Cooperators:

Provide names, phone numbers, and e-mail addresses of all those listed here. You are welcome to create a table of personnel involved. Specifically identify those who will be funded to do work on this project and those who will cooperate without being funded. All such personnel listed here MUST be aware of the concept proposal and MUST have agreed to participate in the way(s) described.

Funding Request for 2022-23:

Provide an estimated funding request for this project for the coming year. Do not attempt to show the cost for each Commission or any other breakdown of costs.

Introduction: Problem Statement, Research Question(s) & Justification:

Avoid unnecessary introductions to potato production, importance of the crop, etc. Provide a statement that clearly defines the problem addressed by your research and the rationale for this project. Include clear and thorough arguments regarding how the proposed work will build on existing knowledge, previous research, and existing literature on the subject. Cite existing literature; no need for a literature cited section in this document, but one will be expected for full proposals. Where appropriate, state how this project relates to other ongoing work in the Northwest. If this is a partially-complete multi-year project, please update this section of the concept proposal based on, and framed within, your results to date. Figures and photographs are encouraged.

Goal(s), Hypothesis, & Objectives:

Provide specific objectives that will address your core hypotheses and can realistically be accomplished during the project period. Which objectives will be addressed during this funding year (i.e., during 2022-2023)? If this is a partially-complete multi-year project, be sure to update the objectives section to reflect what has been accomplished so far, and any changes to continuing objectives that were warranted or mandated by that progress.

Collaboration: Briefly describe the role to be played by each scientist, and the communication plan among the cooperators.

Additional grant funding: If funded by the Consortium, would this project lead to submission to any other grant programs (e.g. federal or state), thereby leveraging Consortium funds?

Northwest Potato Research Consortium

Cooperative Effort of the Potato Commissions of ID, OR, & WA

Current Projects -- Growing year 2021, Commission fiscal year 2021-22

<https://nwpotatoresearch.com/>

(**Contact information for each scientist is listed at the end of this document.**)

Plant Pathology/Soil Health	
<i>Lee Hadwiger</i>	Defense response signaling in potato tissue
<i>Kasia Duellman</i>	Relationship between in vitro fungicide resistance of Fusarium dry rot pathogens and disease control of Fusarium dry rot in vivo and in the field
<i>Ken Frost</i>	Development of an assay to screen for fungicide resistant Fusarium species in potato field soils
<i>Ken Frost</i>	Data mining for crop rotations that predict the occurrence of mefenoxam-resistant <i>Pythium</i> species
<i>Deirdre Griffin LaHue, Tarah Sullivan</i>	Managing the potato microbiome for improved soil and potato health
<i>Markus Kleber</i>	"Reactive Carbon" as a critical control of microbial performance in potato fields
<i>Jeff Miller, Nora Olsen</i>	Management of Fusarium dry rot of Clearwater Russet
<i>Kylie Swisher Grimm</i>	Support for the investigation of emerging and persistent potato diseases in the Northwest
<i>Kiwamu Tanaka</i>	Testing plant-defense elicitation compounds and antimicrobial agents to control silver scurf disease
<i>James Woodhall, Phill Wharton, Kasia Duellman, Tim Waters</i>	A network of spore samplers as an early warning detection system for foliar potato pathogens
<i>James Woodhall, Kiwamu Tanaka, Ken Frost</i>	Developing collaborative modern diagnostic approaches for potato pest and pathogen detection and characterization for the Pacific Northwest
<i>David Wheeler, Deirdre Griffin Lahue, Cynthia Gleason, Ken Frost</i>	Comparison of potato yields, soil health, and pathogen loads in virgin and non-virgin soils
<i>Jeff Miller, James Woodhall, Nora Olsen</i>	Management of Powdery Scab and Potato Mop Top Virus

<i>Jeff Miller, James Woodhall</i>	Interaction between anastomosis groups of <i>Rhizoctonia solani</i> and in-furrow fungicide applications
Nematology	
<i>Cynthia Gleason, Sagar Sathuvalli</i>	Investigation into a candidate potato resistance gene against the root-knot nematode <i>Meloidogyne chitwoodi</i> race 1
<i>Cynthia Gleason, Louise-Marie Dandurand</i>	An investigation into the potential for broad-spectrum resistance against plant parasitic nematodes in potato
<i>Louise-Marie Dandurand, Joe Kuhl, Allan Caplan, Fangming Xiao, Inga Zasada</i>	Functional Genomics of <i>Solanum sisymbriifolium</i> (Litchi Tomato) Immunity for PCN Eradication
<i>Alan Schreiber</i>	Development of New Nematicides for Potatoes
Potato Virus	
<i>Aymeric Goyer</i>	Improving detection of PVY-infected plants with innovative peptide application
<i>Aymeric Goyer</i>	Testing genes that have the potential to provide resistance to PVY
<i>Alex Karasev</i>	'Window of susceptibility' to PVY ^{NTN} infection in potato and effect on virus translocation into tubers
<i>Kylie Swisher Grimm, Max Feldman</i>	Understanding Tobacco rattle virus epidemiology through basic and applied assays
Entomology	
<i>Rodney Cooper, Dave Horton, Kylie Swisher Grimm, Dave Crowder, Ken Frost</i>	Molecular and landscape approaches to understanding beet leafhopper and potato purple top disease in the Columbia Basin
<i>Justin Clements, Tim Waters</i>	Longevity of early season insecticide applications for the control of problematic insect pests of potatoes
<i>Jackie Serrano</i>	Role of vector saliva in pathogen transmission
<i>Alan Schreiber</i>	Development of Insecticides for Pacific Northwest Potatoes
<i>Tim Waters</i>	Quantifying Crop Safety and Efficacy when Tank Mixing Insecticides and Fungicides
<i>Tim Waters</i>	Attempting to Establish the Economic Threshold for Lygus in Potatoes and Determining Efficacy and Tolerance of Insecticides for Control of Lygus
Cropping Systems, Plant Physiology	
<i>Nora Olsen, Mike Thornton, Jeff Miller, Aymeric Goyer, Ray Qin, Ken Frost</i>	Practices associated with blackspot bruise susceptibility

<i>Ray Qin, Sagar Sathuvalli, Rhett Spear</i>	Evaluation of Potassium Requirement for Different Potato Varieties
Breeding/Variety Development	
<i>Jacob Blauer</i>	Postharvest Quality of Clones in the Western Regional Potato Variety Development Program
<i>Mark Pavek</i>	In-Field Testing to Identify New Potato Varieties and Best Management Practices for Growers
<i>Rhett Spear, Rich Novy, Mike Thornton</i>	Breeding and Selecting Russet and Specialty Varieties with Improved Tuber Qualities, Disease and Pest Resistance, and Sustainability
<i>Rhett Spear, Nora Olsen</i>	Storage Requirements for New and "Potential Release" Cultivars for the Potato Industry
<i>Sagar Sathuvalli, Brian Charlton, Clint Shock</i>	Genetic Improvement and Cultivar Development of Russet, Chip and Specialty Potatoes for the PNW Potato Industry
<i>Sagar Sathuvalli, Kelly Vining, Max Feldman</i>	Breeding for Resistance to Columbia Root-Knot Nematode: Introgression of new sources of resistance and development of genomic resources
<i>Max Feldman, Sagar Sathuvalli</i>	Applying molecular markers to select for promising virus resistant germplasm

Northwest Potato Research Consortium

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Funded Scientists: Growing year 2021, Commission fiscal year 2021-22

Scientist Name	Affiliation/Institution
Jake Blauer	Washington State University, Pullman, WA https://potatoes.wsu.edu/
Allan Caplan	University of Idaho, Moscow, ID https://inbre.uidaho.edu/faculty/university-of-idaho/allan-caplan-phd/
Brian Charlton	Oregon State University, Klamath Falls, OR https://cropandsoil.oregonstate.edu/users/brian-charlton
Justin Clements	University of Idaho, Parma https://www.uidaho.edu/cals/entomology-plant-pathology-and-nematology/our-people/justin-clements
Rodney Cooper	USDA-Agricultural Research Service, Wapato, WA http://www.ars.usda.gov/pandp/people/people.htm?personid=43467
Dave Crowder	Washington State University, Pullman, WA http://entomology.wsu.edu/david-crowder/
Louise-Marie Dandurand	University of Idaho, Moscow, ID http://www.uidaho.edu/cals/entomology-plant-pathology-and-nematology/our-people/louise-marie-dandurand
Kasia Duellman	University of Idaho, Idaho Falls, ID https://www.uidaho.edu/cals/entomology-plant-pathology-and-nematology/our-people/kasia-duellman
Max Feldman	USDA-Agricultural Research Service, Prosser WA https://www.ars.usda.gov/pacific-west-area/wapato-wa/temperate-tree-fruit-and-vegetable-research/
Ken Frost	Oregon State University, Hermiston, OR https://extension.oregonstate.edu/people/kenneth-frost
Cynthia Gleason	Washington State University, Pullman, WA https://plantpath.wsu.edu/people/faculty/gleason/
Aymeric Goyer	Oregon State University, Hermiston, OR https://agsci.oregonstate.edu/users/aymeric-goyer
Deirdre Griffin LaHue	Washington State University, Mount Vernon, WA http://css.wsu.edu/people/faculty/deirdre-griffin-lahue/
Lee Hadwiger	Washington State University, Pullman, WA https://mps.wsu.edu/dr-lee-hadwiger/
Dave Horton	USDA-Agricultural Research Service, Wapato, WA https://www.ars.usda.gov/people-locations/person/?person-id=2595
Alex Karasev	University of Idaho, Moscow, ID https://inbre.uidaho.edu/faculty/university-of-idaho/alexander-karasev-phd/
Markus Kleber	Oregon State University, Corvallis, OR https://agsci.oregonstate.edu/users/markus-kleber
Joe Kuhl	University of Idaho, Moscow, ID http://www.uidaho.edu/cals/plant-sciences/our-people/joseph-kuhl

Jeff Miller	Miller Research, Rupert, ID http://www.millerresearch.com/
Rich Novy	USDA-Agricultural Research Service, Aberdeen, ID http://www.ars.usda.gov/pandp/people/people.htm?personid=4153
Nora Olsen	University of Idaho, Kimberly, ID https://vivo.nkn.uidaho.edu/vivo/display/n56467
Mark Pavsek	Washington State University, Pullman, WA http://horticulture.wsu.edu/people/pavsek/
Ray Qin	Oregon State University, Hermiston, OR https://cropandsoil.oregonstate.edu/users/ruijun-qin
Sagar Sathuvalli	Oregon State University, Hermiston, OR https://agsci.oregonstate.edu/users/vidyasagar-sathuvalli-rajakalyan
Alan Schreiber	Agriculture Development Group, Inc., Eltopia, WA 509-539-4537; aschreib@centurytel.net
Jackie Serrano	USDA-ARS, Wapato, WA https://www.ars.usda.gov/pacific-west-area/wapato-wa/temperate-tree-fruit-and-vegetable-research/people/jacqueline-serrano/
Rhett Spear	University of Idaho, Idaho Falls, ID https://www.uidaho.edu/cals/plant-sciences/our-people/rhett-spear
Tara Sullivan	Washington State University, Pullman WA http://css.wsu.edu/tarah-s-sullivan/
Kylie Swisher Grimm	USDA-Agricultural Research Service, Prosser WA https://www.ars.usda.gov/people-locations/person/?person-id=47037
Kiwamu Tanaka	Washington State University, Pullman, WA http://plantpath.wsu.edu/people/faculty/kiwamu-tanaka/
Mike Thornton	University of Idaho, Parma, ID http://www.uidaho.edu/cals/plant-sciences/our-people/mike-thornton
Kelly Vining	Oregon State University, Corvallis, OR https://horticulture.oregonstate.edu/users/kelly-vining
Tim Waters	Washington State University, Pasco, WA http://extension.wsu.edu/benton-franklin/locations-staff/
David Wheeler	Washington State University, Pullman, WA https://plantpath.wsu.edu/david-wheeler/
Jonathan Whitworth	USDA-Agricultural Research Service, Aberdeen, ID http://www.ars.usda.gov/pandp/people/people.htm?personid=35086
James Woodhall	University of Idaho, Parma, ID https://www.uidaho.edu/cals/parma-research-and-extension-center/plant-pathology
Fangming Xiao	University of Idaho, Moscow, ID https://inbre.uidaho.edu/faculty/university-of-idaho/fangming-xiao-phd/
Inga Zasada	USDA-Agricultural Research Service, Corvallis, OR http://www.ars.usda.gov/pandp/people/people.htm?personid=33001