

PNNL-30969

# Neurotrophic Labs – Fish Exclusion Using a Floating Separator – Fish Protection Prize

CRADA 499

February 2021

Geist, David R.

## DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor Battelle Memorial Institute, nor any of their employees, makes **any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.** Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or Battelle Memorial Institute. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

PACIFIC NORTHWEST NATIONAL LABORATORY  
*operated by*  
BATTELLE  
*for the*  
UNITED STATES DEPARTMENT OF ENERGY  
*under Contract DE-AC05-76RL01830*

Printed in the United States of America

Available to DOE and DOE contractors from the  
Office of Scientific and Technical Information,  
P.O. Box 62, Oak Ridge, TN 37831-0062;  
ph: (865) 576-8401  
fax: (865) 576-5728  
email: [reports@adonis.osti.gov](mailto:reports@adonis.osti.gov)

Available to the public from the National Technical Information Service  
5301 Shawnee Rd., Alexandria, VA 22312  
ph: (800) 553-NTIS (6847)  
email: [orders@ntis.gov](mailto:orders@ntis.gov) <<https://www.ntis.gov/about>>  
Online ordering: <http://www.ntis.gov>

# **Neurotrophic Labs – Fish Exclusion Using a Floating Separator – Fish Protection Prize**

CRADA 499

February 2021

Geist, David R.

Prepared for  
the U.S. Department of Energy  
under Contract DE-AC05-76RL01830

Pacific Northwest National Laboratory  
Richland, Washington 99354

# Cooperative Research and Development Agreement (CRADA) Final Report

**Report Date: February 6, 2021**

In accordance with Requirements set forth in the terms of the CRADA, this document is the CRADA Final Report, including a list of Subject Inventions, to be provided to PNNL Information Release who will forward to the DOE Office of Scientific and Technical Information as part of the commitment to the public to demonstrate results of federally funded research.

**Parties to the Agreement:**

**PNNL/Battelle Memorial Institute**

**Neurotrophic Labs, LLC**

**PNNL CRADA Number: 499**

**CRADA Title:** Neurotrophic Labs – Fish Exclusion Using a Floating Separator – Fish Protection Prize

**Responsible Technical Contact at DOE Lab:**

Mr. Brian J. Bellgraph  
Earth Scientist  
Pacific Northwest National Laboratory  
902 Battelle Blvd  
Richland, WA 99354  
Tel: (509) 371-7185

**Name and Email Address of POC at Company:**

Dr. David R. Geist  
Project Manager  
Pacific Northwest National Laboratory  
902 Battelle Blvd  
Richland, WA 99354  
Tel: (509) 371-7165  
[David.geist@pnnl.gov](mailto:David.geist@pnnl.gov)

**DOE Program Office:** Ms. Dana McCoskey

[dana.mccoskey@ee.doe.gov](mailto:dana.mccoskey@ee.doe.gov)

**Joint Work Statement Funding Table showing DOE funding commitment:**

| Estimated Costs              | PNNL Shared Resources | Participant Shared Resources | Participant Funds In | Totals          |
|------------------------------|-----------------------|------------------------------|----------------------|-----------------|
| Year 1                       | \$11,000              | \$11,000                     | \$ 0                 | \$22,000        |
| <b>TOTALS</b>                | <b>\$11,000</b>       | <b>\$11,000</b>              | <b>\$ 0</b>          | <b>\$22,000</b> |
| Fed Admin Charge on Funds-in | ----                  | ----                         | ----                 |                 |

**Executive Summary of CRADA Work:** In FY2020, the National Renewable Energy Laboratory (NREL) initiated a Prize competition with support from Pacific Northwest National Laboratory (PNNL), and sponsored by the U.S. Department of Energy Water Power Technologies Office (DOE WPTO), to support the development of innovative methods for excluding fish from water diversions and intakes: the Fish Protection Prize. Proposed solutions can include new ideas for addressing fish exclusion or improvements to existing technologies. Solutions can be applied to river and canal diversions, unscreened diversion pipes, or intakes at dams.

The Fish Protection Prize competition under this phase had three stages:

1. Concept stage (January - June 2020): WPTO announced the Prize competition, solicited submittals, and worked with NREL and PNNL to select up to 10 Finalists to advance to the second stage.
2. Incubation stage (June - September 2020): Nine finalists received up to 50 hours of voucher support each from PNNL as they prepared for the third stage.
3. Pitch Contest stage (September 2020): The 9 finalists competed in a "Pitch Contest" that occurred during the America Fisheries Society Annual Meeting in September (a virtual meeting in 2020). At the end of the Pitch Contest, the DOE WPTO Prize judges selected three Grand Prize Winners to receive up to \$700,000 of combined cash prizes and additional voucher support from PNNL to develop their proposals in FY21.

**Summary of Research Results:**

- In FY20 PNNL provided voucher support in the form of technical reviews and support, as well as graphics and presentation support, in helping the 9 finalists prepare for the Pitch Contest at the American Fisheries Society (AFS) virtual meeting.
- No subject inventions, patent applications, copyrights, and trademarks under this CRADA.
- Products Developed: Abstract and link to American Fisheries Society presentation (attached).

**Abstract Copied From AFS 2020 Meeting Website:** No abstract.

**Link to presentation video at AFS 2020 Meeting website:**

<https://afs.confex.com/afs/2020/meetingapp.cgi/Paper/44445>

# **Pacific Northwest National Laboratory**

902 Battelle Boulevard  
P.O. Box 999  
Richland, WA 99354  
1-888-375-PNNL (7665)

**[www.pnnl.gov](http://www.pnnl.gov)**