

U. S. DEPARTMENT OF ENERGY, OFFICE OF SCIENCE
INTEGRATED SUPPORT CENTER—CHICAGO OFFICE

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)
ENVIRONMENTAL EVALUATION NOTIFICATION FORM

To be completed by "Applicant," i.e., organization receiving funds and/or implementing Federal Actions as defined by 40 CFR § 1508.18. For assistance, refer to "Instructions for Preparing ISC-CH F-560, Environmental Evaluation Notification Form."

Solicitation/Award No. (if applicable): DE-FOA-0001650

Organization Name: Regents of the University of California, Davis, Davis, California

Proposed Action Title: SyPro Poplar: Improving Poplar Biomass Production under Abiotic Stress Conditions: an Integrated Omics, Bioinformatics..

Total DOE Funding/Total Funding: \$3,620,918 / \$5,523,331

I. Project Description: (Use explanation pages if additional space is required)

A. Proposed Project/Action (if applicable, delineate Federally funded/Non-Federally funded portions)

The proposed research will involve production of plants with genome modifications designed to test the effects of changing gene regulation to enhance stress tolerance traits in Populus trees (hybrid aspen, Populus tremula x alba). The purpose is to develop trees that can be deployed on marginal sites for multiple purposes, including production of wood, pulp, and chemicals to enhance the bioeconomy. Enhanced stress tolerance is needed because tree productivity is severely restricted under the conditions that prevail on the majority of the land base that is currently under-utilized in the U.S.

B. Would the project proceed without Federal funding?

Yes No

If "yes," use explanation page.

II. Description of Affected Environment: (Use explanation pages if additional space is required)

The trees will be produced in the laboratory at UC Davis, the University of Tennessee, and at the Pacific Northwest National Lab. They will be maintained in growth chambers and greenhouses, following strict guidelines that are in place at each institution. Trees that perform well in the greenhouse will be further tested in a field trial at West Virginia University under permit from the USDA Animal and Plant Health Inspection Service. The trial will be prevented from flowering by harvesting and destroying the plants while still in a juvenile state. The trial will be carefully monitored to prevent vegetative materials from spreading. Access to the site will be controlled by a locked gate accessible with a key card.

III. Preliminary Questions:

- A. Is the DOE-funded work routinely administrative or entirely advisory or a "paper study?" Yes No

If "Yes", ensure that the description in Section I reflects this and go directly to Section V.

- B. Is there any potential whatsoever for: (Provide an explanation for each "Yes" response)

- | | | | |
|-----|---|-------------------------------------|-------------------------------------|
| 1. | Work to be performed outdoors? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. | Major modification of a building interior? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. | Threat of violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. | Siting, construction or major expansion of waste treatment, storage, or disposal facilities? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. | Disturbance to hazardous substances, pollutants, or contaminants preexisting in the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. | The presence of any environmentally-sensitive resources? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. | Any potential whatsoever for high consequence impacts to human health or the environment? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 8. | The work being connected to another existing/proposed activity that could potentially create a significant impact? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. | Nearby past, present, and/or reasonably foreseeable future actions such that collectively significant impacts could result? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. | Scientific or public controversy, uncertainty over potential impacts, or conflicts regarding resource usage? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If "No" to ALL Section III.B. questions, go directly to Section V.

IV. Potential Environmental Effects: (Provide an explanation for each "Yes" response)

- A. Environmentally Sensitive Resources: Could the proposed action potentially result in changes and/or disturbances to any of the following resources?

- | | Yes | No |
|--|--------------------------|-------------------------------------|
| 1. Threatened/Endangered Species and/or Critical Habitats | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Other Protected Species (e.g., Burros, Migratory Birds, Pollinators) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Sensitive Environments (e.g., Tundra/Coral Reefs/Rain Forests) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Cultural or Historic Resources | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Important Farmland | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Non-Attainment Areas for Ambient Air Quality Standards | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Class I Air Quality Control Region | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Special Sources of Groundwater (e.g. Sole Source Aquifer) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. Navigable Air Space | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Coastal Zones | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. Areas with Special National Designation (e.g. National Forests, Parks, Trails) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Floodplains and/or Wetlands | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- B. Regulated Substances/Activities: Would the proposed action involve any of the following regulated items or activities?

- | | | | |
|-----|--|--------------------------|-------------------------------------|
| 13. | Natural Resource Damage Assessments | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 14. | Invasive Species or Exotic Organisms | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 15. | Noxious Weeds | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 16. | Clearing or Excavation greater than one acre or Removal of Trees Governed by Local Requirement | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 17. | Dredge or Fill (under Clean Water Act, Section 404, greater than one acre) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

B. Regulated Substances/Activities: Would the proposed action involve any of the following regulated items or activities? (continued)

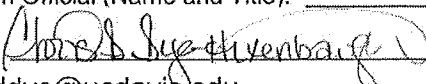
	Yes	No
18. Noise (in excess of regulations)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19. Asbestos Removal	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20. Polychlorinated biphenyls (PCBs)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21. Import, Manufacture, or Processing of Toxic Substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22. Chemical Storage/Use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23. Pesticide Use	<input checked="" type="checkbox"/>	<input type="checkbox"/>
24. Hazardous, Toxic, or Criteria Pollutant Air Emissions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25. Liquid Effluents	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26. Spill Prevention/Surface Water Protection	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27. Underground Injection	<input type="checkbox"/>	<input checked="" type="checkbox"/>
28. Hazardous Waste	<input type="checkbox"/>	<input checked="" type="checkbox"/>
29. Underground Storage Tanks	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30. Radioactive or Radioactive Mixed Waste	<input type="checkbox"/>	<input checked="" type="checkbox"/>
31. Radiation Exposure	<input type="checkbox"/>	<input checked="" type="checkbox"/>
32. Nanoscale Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>
33. Genetically Engineered Microorganisms/Plants or Synthetic Biology?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
34. Ozone Depleting Substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>
35. Greenhouse Gas Generation/Sustainability	<input type="checkbox"/>	<input checked="" type="checkbox"/>
36. Off-Road Vehicles	<input type="checkbox"/>	<input checked="" type="checkbox"/>
37. Biosafety Level 3-4 Laboratory	<input type="checkbox"/>	<input checked="" type="checkbox"/>
38. Research on Human Subjects or other Vertebrate Animals	<input type="checkbox"/>	<input checked="" type="checkbox"/>
39. Facility footprint exceeds 5,000 Square Feet	<input type="checkbox"/>	<input checked="" type="checkbox"/>

C. Other Relevant Information: Would the proposed action involve the following?

	Yes	No
40. Disproportionate Nearby Presence of Minority and/or Low Income Populations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
41. Existing, Modified, or New Federal/State Permits	<input type="checkbox"/>	<input checked="" type="checkbox"/>
42. Involvement of Another Federal Agency (e.g. license/permit, funding, approval)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
43. Action in a State with NEPA-type law	<input type="checkbox"/>	<input checked="" type="checkbox"/>
44. Expansion of Public Utilities/Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>
45. Depletion of a Non-Renewable Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>
46. Subject to an Existing Institutional Work Planning and Control Process	<input type="checkbox"/>	<input checked="" type="checkbox"/>
47. Other Pertinent Information Which Could Impact Human Health or the Environment	<input type="checkbox"/>	<input checked="" type="checkbox"/>

V. Applicant Certification that to the best of their knowledge all information provided on this form is accurate:

Does this disclosure contain classified, confidential, or other exempt information that DOE would not be obligated to disclose pursuant to the Freedom of Information Act? Yes No

A. Organization Official (Name and Title): Chris D. Dye-Hixenbaugh
 Signature:  Date: 09/28/2017
 e-mail: cddye@ucdavis.edu Phone: (530)754-7700

B. Optional Secondary Approval (Name and Title): _____
 Signature: _____ Date: _____
 e-mail: _____ Phone: _____

Remainder to be completed by DOE

VI. DOE Concurrence/Recommendation/Determination:

A. DOE Project Director/Program Manager or Contract/Grant Management Specialist:

Has the Applicant completed the Form correctly?
Does an existing Generic Categorical Exclusion apply?
If yes, indicate:

Yes No

Name and Title: Thy H. Nguyen

Signature: [Signature] Date: 1/24/18

B. DOE NEPA Team Review (if requested):

Is the class of action identified in the DOE NEPA Regulations (Appendices A-D to Subpart D (10 CFR § 1024.101))?
If yes, specify the class(es) of action: B3.8

Yes No

Name and Title: Peter Siebach, NCO

Signature: [Signature] Date: 1/24/2018

C. DOE Counsel (if requested):

Name and Title: _____

Signature: _____ Date: _____

D. DOE NEPA Compliance Officer:

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR § 1021.400.

- Action may be categorically excluded from further NEPA review. I have determined that the proposed action meets the requirements for Categorical Exclusion referenced above.
- Action requires approval by Head of the Field Organization. Recommend preparation of an Environmental Assessment.
- Action requires approval by Head of the Field Organization or a Secretarial Officer. Recommend preparation of an Environmental Impact Statement.

Comments/limitations if any:

Determination contingent upon meeting all required regulatory, licensing, and/or permitting requirements.

NEPA Compliance Officer:

Name: Peter R. Siebach

Signature: [Signature] Date: 1/24/2018

Optional Additional Narrative: (add additional detail to description to Sections I and II or explanations to responses in Sections III and IV.

The proposed project will involve field trials of genetically modified organisms that are regulated by the USDA APHIS Biotechnology Regulatory Service. The field trial will be established at West Virginia University and managed by Professor Stephen DiFazio. The risk of negative impacts to the environment from the proposed trial is negligible for the following reasons: 1.) The field trial will be managed solely with herbicides that are approved by the EPA for application on Populus (primarily glyphosate). These will be applied by a licensed contractor following all regulations, under the direct supervision of Prof. DiFazio. 2.) The trial will not be allowed to flower, and all potential vegetative propagules will be tracked and destroyed, in full compliance with the permit. 3.) None of the proposed modifications could conceivably convert this experimental organism to a noxious weed, or cause any other undesirable environmental consequences.

October 24, 2017

Prof. Eduardo Blumwald
612 Jerome St.
University of California/Davis
Davis, California 95616

Dear Prof. Eduardo Blumwald:

Your notification request has been acknowledged and may be executed according to 7 CFR § 340.3(c). You are authorized to perform the movement of the regulated article between November 1, 2017 and November 1, 2018. All activities related to this introduction (except for any monitoring periods) must be completed by the expiration date (i.e. all shipments must have arrived at their destination, plants harvested, and all remaining plants and plant parts are either destroyed or moved into contained facilities).

In the event of any accidental and/or unauthorized release of the regulated article, contact BRS Compliance Evaluation and Enforcement Branch by phone (301) 851-3935, fax (301) 734-8910, or e-mail at BRSCCompliance@aphis.usda.gov

If you have a general question regarding your notification, contact BRS Permits unit by phone (301) 851-3935 or e-mail BRSPermits@aphis.usda.gov

Some key details of your notification are shown here:

Interstate Movement
Notification No. 17-276-101n
Regulated Article - Poplar

Destination - Tennessee

This acknowledgement letter must be provided to all cooperators.

Important - Import and Interstate Notifications Only

Imports may require a phytosanitary certificate from the country of origin, a phytosanitary certificate of re-exportation (e.g. Ships from South Africa to France, then France to the U.S.), a Plant Protection and Quarantine (PPQ) permit, and/or other certifying PPQ documents. Also, some interstate movement and release notifications may also be subject to PPQ domestic permit and/or quarantine requirements. Please call PPQ at (877) 770-5990 for additional assistance in regards to their requirements.

Planting Report Information - All Releases & Movement / Release Notifications Only

APHIS requires that responsible parties submit a Planting Report no later than the 15th day of the month that follows the date the environmental release occurred (e.g., a planting any time April 1-30 must be reported by May 15). This report provides APHIS with additional details about the actual releases that have taken place under an acknowledged notification. The report must include: the Notification number; name of the regulated article; trial site location data (provide state, county, northwest GPS coordinate, and site identification number (if available); acreage of regulated article planted; and planting date for each location. For additional information on planting reports see the Notification Users Guide:
http://www.aphis.usda.gov/biotechnology/downloads/notification_guidance_0311.pdf

Additionally, the planting report should list any sites included in the original notification that will not be planted. If there are multiple planting dates, you may submit reports monthly no later than the 15th day of the month that follows planting to inform APHIS of any new plantings. Planting reports can combine information from multiple notifications; i.e., only a single report need be submitted that lists all the plantings for the previous calendar month. Reports need not be submitted when no planting occurs.

Final Field Test Reports - All Release & Movement / Release Notifications Only

Field test reports must be submitted to APHIS within 6 months after termination of the field test. Field test reports shall include the APHIS reference number, methods of observation, resulting data, and analysis regarding all deleterious effects on plants, nontarget organisms, or the environment. (7 C.F.R. § 340.3(d)(4)).

All environmental releases of regulated articles under notification require the submission of a field test report within six months of the termination of the field test. Because APHIS does not always know the actual termination date in advance, APHIS considers the field test report to be due no later than six months after the expiration of the notification.

The following information must be included in the field test report:

- APHIS Notification number
- Location Name
- County
- State
- Indicate if any of the planted material was destroyed before harvest
If so, provide the pre-harvest destruction completion date and describe how the pre-harvested material was destroyed
- Indicate if any of the planted material was harvested and if so provide the harvest completion date. Describe how the harvested

- material was terminated
- If the material was terminated in the field and not removed from the field, provide the date the field test was completely terminated and describe the method of termination
- If material was removed from the field and terminated off site describe how it was disposed and provide the date of off site destruction.
- If material was removed from the field and placed in storage, provide the amount of material that was stored and provide a description of the storage location
- Describe any other disposition Methods that may be applicable
- Describe any deleterious effects on plants, non target organisms, or the environment
- Describe methods of observations and resulting data and analyses
- Indicate if you have submitted any of the following:
 1. A report on the accidental or unauthorized release of the regulated article;
 2. A report that characteristics of the permitted species are substantially different from those listed in the application; or
 3. A report of any unusual occurrence.

For additional guidance on these requirements, see the BRS User's Guide for Notifications at http://www.aphis.usda.gov/biotechnology/downloads/notification_guidance_0311.pdf

Please submit all planting and final field test reports via ePermits using the link under "My Reports and Notices."
A link to instructions for submitting via ePermits is located here:
https://epermits.aphis.usda.gov/epermits/xml_schema/BRS_Reports_and_Notices_User_Guide.pdf

Other options are to submit reports via email or paper, however, we strongly encourage submission via ePermits. If submitting using any other method then CBI and CBI-deleted or non-CBI copies should be submitted via:

BRS E-mail:
BRSCompliance@aphis.usda.gov

BRS Mail:
Animal and Plant Health Inspection Service (APHIS)
Biotechnology Regulatory Services (BRS)
Regulatory Operations Program
4700 River Rd. Unit 91
Riverdale, MD 20737

You must comply with the performance standards as stated in 7 CFR 340.3(c) and transcribed below:

1. If the plants or plant materials are shipped, they must be shipped in such a way that the viable plant material is unlikely to be disseminated while in transit and must be maintained at the destination facility in such a way that there is no release into the environment.
2. When the introduction is an environmental release, the regulated article must be planted in such a way that they are not inadvertently mixed with non-regulated plant materials of any species which are not part of the environmental release.
3. The plants and plant parts must be maintained in such a way that the identity of all material is known while it is in use, and the plant parts must be contained or devitalized when no longer in use.
4. There must be no viable vector agent associated with the regulated article.
5. The field trial must be conducted such that:
 - (i) The regulated article will not persist in the environment, and
 - (ii) No offspring can be produced that could persist in the environment.
6. Upon termination of the field test:
 - (i) No viable material shall remain which is likely to volunteer in subsequent seasons, or
 - (ii) Volunteers shall be managed to prevent persistence in the environment.

APHIS recommends the adoption of best management practices (BMPs) to delay or mitigate evolution of herbicide resistance, to the extent possible, while implementing design protocols for regulated authorized releases of genetically engineered crops. For information and resources on this topic, please see <http://wssa.net/weed/resistance/>. In particular, examples of BMPs are outlined by Norsworthy et al. in: Reducing the Risks of Herbicide Resistance: Best Management Practices and Recommendations (Weed Sci. 2012, Special Issue: 31-62). See <http://www.wssajournals.org/doi/pdf/10.1614/WS-D-11-00155.1>

To ensure compliance with performance standards, you or any of your cooperators who will be involved in handling the regulated article must be prepared with a written description of the methods to be employed to meet each performance standard. Although not requirements, all packages should be clearly labeled as to content, and the notification number should be prominently displayed on the package. Regulated articles introduced under notification are subject to the performance standards in the regulations even after the or expiration date of the notification.

A copy of this letter of acknowledgement will be sent to the relevant State Regulatory Officials.

Sincerely,

Permits and Program Services Branch
Regulatory Operations Programs



United States
Department of
Agriculture



Animal and
Plant Health
Inspection Service

Biotechnology
Regulatory
Services

4700 River Road, Unit 147
Riverdale, Maryland
20737-1236

Biotechnology Regulatory Services

cc:

Louann Self, , TN