AUBURN UNIVERSITY- FOREST HEALTH COOPERATIVE

FY 2025 PROPOSED WORK PLAN

As presented to the Forest Health Cooperative Advisory Committee

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FY 2025 WORK PLAN

GOAL A: RESEARCH

Objective 1. Identify research projects

Proposed FY2025:

1. Biological invasions detection via sentinel gardens in Alabama – USDA-USFS – USFS for all travel, supplies, meetings, and laboratory technician $433,285

2. Genetic diversity and spread of pine needle brown spot blight in China and USA – MST-NSF for travel, supplies and graduate student $450,000

3. Development of a sustainable multi-stressor system at open-top field chambers for bolstering global change research and training in engineering and biology – NSF-MRI for infrastructure (greenhouse), updating open-top chamber equipment, supplies, salary and maintenance $1,400,000

4. Sudden Oak Death (*Phytophthora ramorum*) Detection Survey (Stream Sampling) in AL and MS – FHM, USFS for all travel, supplies and laboratory technician $47,000

Proposed FY2024:

1. Advancing brown spot needle Blight prevention: A non-destructive approach for early detection of pathogen tolerance – FHC (in-house study proposal) W*ill also submit to AFRI, NSF or other granting agency if a suitable RFP is released.*

2. Novel analytical tools for the selection of superior loblolly pine genotypes for improved plant health, fuels, and chemicals – NIFA-AFRI for travel, supplies, graduate students, and post-doc $494,377 – *Reviewed as high priority with good reviews. Wanted more preliminary data, asked to resubmit. More preliminary data acquired by the Forest Products Development Center. They will resubmit with modifications when a suitable RFP is released.*

Funded FY2024:

1. Mitigating Needle Blight: A growing Economic Threat to Pine Forests – USFS – increase by $94,800 for salary and travel of 2 undergraduate students. (2 years)

2. United Against Brown Spot Needle Blight: Collaborative Strategies for Protecting Southeastern Loblolly Pine Forests – USFS for travel, supplies, graduate students $498,080 – Joint with Mississippi State University (Dr. John Riggins)
3. Sudden Oak Death (*Phytophthora ramorum*) Detection Survey (Stream Sampling) in AL and MS – FHM, USFS for all travel, supplies and laboratory technician $47,000

Funded FY2023:

1. Sudden Oak Death (*Phytophthora ramorum*) Detection Survey (Stream Sampling) in AL and MS – FHM, USFS for all travel, supplies and laboratory technician $43,000

Funded FY2022:

1. Mitigating Needle Blight: A growing Economic Threat to Pine Forests – Senate Appropriations – Proposal requested by Senator Shelby's office. $3,000,000 ($2,100,000 to Auburn) (3 years)
2. Sudden Oak Death (*Phytophthora ramorum*) Detection Survey (Stream Sampling) in AL and MS – FHM, USFS for all travel, supplies, and laboratory technician $37,000
3. Collaboration between SFWS and FABI – University of Pretoria South Africa to work on *Pinus* related diseases and molecular aspects. $5,000 per participant
4. Wood chemistry and disease resistance – SFWS and Forest Products Development Center $5,000

Objective 2. Recruit graduate students

1. No graduate students are currently being recruited.

Objective 3. Initiate and continue research projects: Determine location, cooperators, and set up research plots dependent upon projects chosen by the membership.

Mitigating Needle Blight: A growing Economic Threat to Pine Forests

1. Continue to collect and analyze data.

Quantifying the impact of pine decline in the southeastern United States

1. Manuscripts in preparation and revision
    a. Mensah, J. K., Sayer, M. A. S., Nadel, R. L., Matusick, G., & Eckhardt, L.G. (In preparation) Foliar nutrients response of *Pinus taeda* L. to *Leptographium terebrantis* infection.

b. Mensah, J. K., Sayer, M. A. S., Nadel, R. L., Matusick, G., & Eckhardt, L.G. (In preparation) Effect of *L. terebrantis* on the production of defensive chemical compounds.

Isolation and identifying of fungi associated with loblolly pine needle damage in the southeastern United States

1. Manuscripts in preparation and revision

    a. Datta, D., Coleman, J., Enebak, S., and Eckhardt, L.G. (In preparation) Survey of fungal pathogens associated with loblolly pine defoliation and mortality in the southeastern United States
    b. Datta, D., Erramuspe, I.V., Enebak, S., and Eckhardt, L.G. (In preparation) Lecanosticta acicola impacts foliar nutrient content and total phenolics of Pinus taeda needles

Identifying volatile chemicals of ophiostomatoid fungi to develop of highly novel lures for monitoring and evaluating bark beetle populations in the United States.

1. Manuscripts in preparation and revision

    a. Menanyih, S., Cale, J., Calderon, A., and Eckhardt, L.G. (In preparation) Production of volatile organic compounds from ophiostomatoid fungi
    b. Menanyih, S., Cale, J., Calderon, A., and Eckhardt, L.G. (In preparation) The influence of different fungal interaction on the production of fungal metabolites *in vitro* and *in situ*

GOAL B: TECHNOLOGY TRANSFER

Objective 1. Serve as a clearinghouse of information related to forest health issues.

Maintain and Update Forest Health Cooperative Web Site

The Forest Health Cooperative Staff will continue to update the Forest Health Cooperative website for use by Forest Health Cooperative Members. (Staff - Baldwin)

Leveraging Forest Health Cooperative Data

The Forest Health Cooperative staff will continue to stress the importance of the Cooperative membership and when possible, leverage Cooperative information for grant proposals. (Staff)

Objective 2. Efficiently and regularly transfer the results of cooperative research to the membership.

Research Reports (Staff)

We plan on producing Research Reports in FY25.

Newsletters

Newsletter distribution will be planned for Spring 2025. Members are encouraged to submit articles.

Objective 3. Provide a limited consultancy function to the membership in the area of forest health.

Individual and Organized Contacts

An on-going activity and is handled as individual situations as cases arise. (Eckhardt)

Short Courses

The Forest Health Cooperative will offer a Forest Health Short Course in Auburn for member personnel in July 2025. We need a minimum of 20 attendees and will survey the membership in January 2025 for interest.

GOAL C: COOP DEVELOPMENT

Objective 1. Provide for the continual relevancy and efficiency of the Cooperative research and technology transfer programs.

Advisory Committee Meeting

The FY26 Advisory Committee Meeting will be held at the end of July 2024. A 2-day meeting will be planned. If there are any meetings that conflict with this time frame, let us know and we can try and accommodate Advisory Members. (Eckhardt/Bowersock)

Forest Health Cooperative Membership

The Forest Health Cooperative staff should make an effort to recruit new members. (Staff)

Update the Cooperative Membership Directory

An on-going activity with an updated directory distributed annually. (Bowersock)

Objective 2. Increase the visibility and effectiveness of the Cooperative as a source of information on issues related to forest health.

Presentations at Meetings

Forest Health Cooperative staff will continue to be encouraged to participate as a speaker or attendee in regional and national meetings. (Staff)

Publications

Forest Health Cooperative staff are encouraged to publish research results in scientific journals. (Staff)

Extramural Funding of Forest Health Cooperative Projects

Forest Health Cooperative staff will continue to be encouraged to locate and generate extramural funding opportunities directly related to forest health.

Interaction with other Research Cooperatives

The Forest Health Cooperative staff will make efforts to interact, attend, and work with other regional and national forest research Cooperatives in an attempt to broaden and strengthen research ties that can benefit forest health.