

Educational Outreach with Fungi

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Outline

1. Historical perspective
2. Lessons learned
3. Feedback for developing educational modules with biological collection data

Summer College in Biotechnology and Life Sciences (SCIBLS) 2003-present



Carol White, Ralph Dean, and Melissa Ashwell



Workshop for NC High School Biology Teachers
“Fungi Growing on the Tree of Life 2004”

Workshop Premise: Educators have limited time (usually less than 1 week) to teach about fungi.

Objectives:

- 1) Increased understanding the function and role of fungi in ecosystems and society.
- 2) Provide fungal-based exercises to illustrate key scientific concepts central to chemistry, cellular biology, ecology, evolution, and genetics.

Objectives (Continued):

- 3) To provide teachers with an opportunity to participate in field and lab activities and to interact with fungal biologists.
- 4) To develop inquiry-based and experiential learning assignments and activities in science curricula.

Fungi Growing on the Tree of Life Workshop for High School Biology Teachers in North Carolina



Larry Grand, Caroline Vernia, Bryan Cody,
Graduate and Undergraduate Students

High School Biology Teacher Workshops



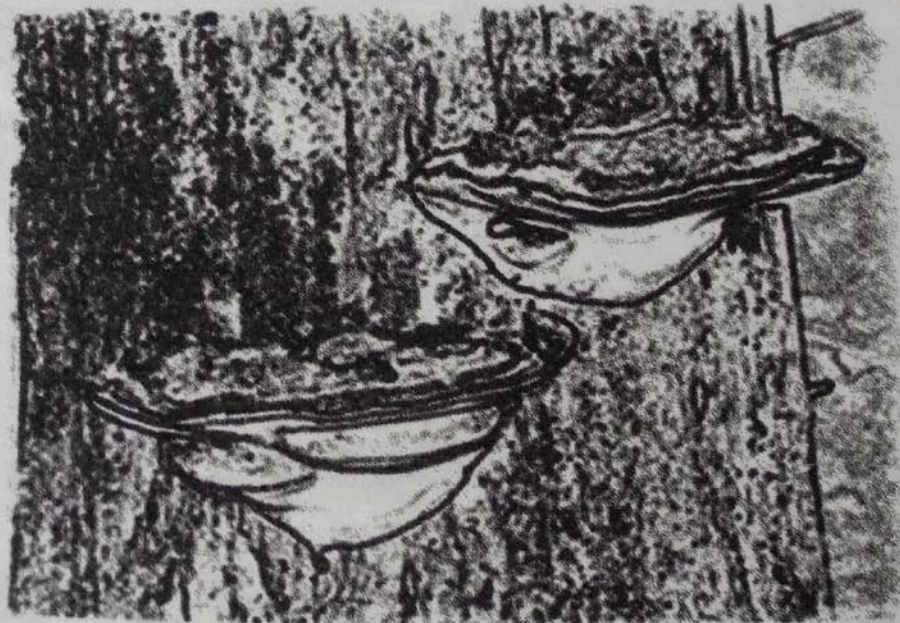
Research and educational use of the NCSU mycological herbarium through improved computerization and internet presence (2009-2013).

Macrofungi digital collections consortium: A resource for unlocking biodiversity and understanding biotic Interactions, nutrient cycling, and human affairs (2012-2016).



NC STATE UNIVERSITY

Exploring North Carolina's Biodiversity



ONE ROTTEN LOG AT A TIME

Larry Grand, Caroline Vernia, Bryan Cody,
Graduate and Undergraduate Students

Microfungi Collections Consortium: A Networked Approach to Digitizing Small Fungi with Large Impacts on the Function and Health of Ecosystems (2015-2017)



CALLING HIGH SCHOOL TEACHERS IN GEORGIA

STEM EDUCATIONAL MODULE DEVELOPMENT WORKSHOP

ON FUNGAL BIOLOGY & BIODIVERSITY

University of Georgia-Athens, July 14-18, 2017







INCLUDES STIPEND

APPLICATIONS DUE MARCH 1, 2017

MORE INFO: <https://ncslg.cals.ncsu.edu/outreach/>

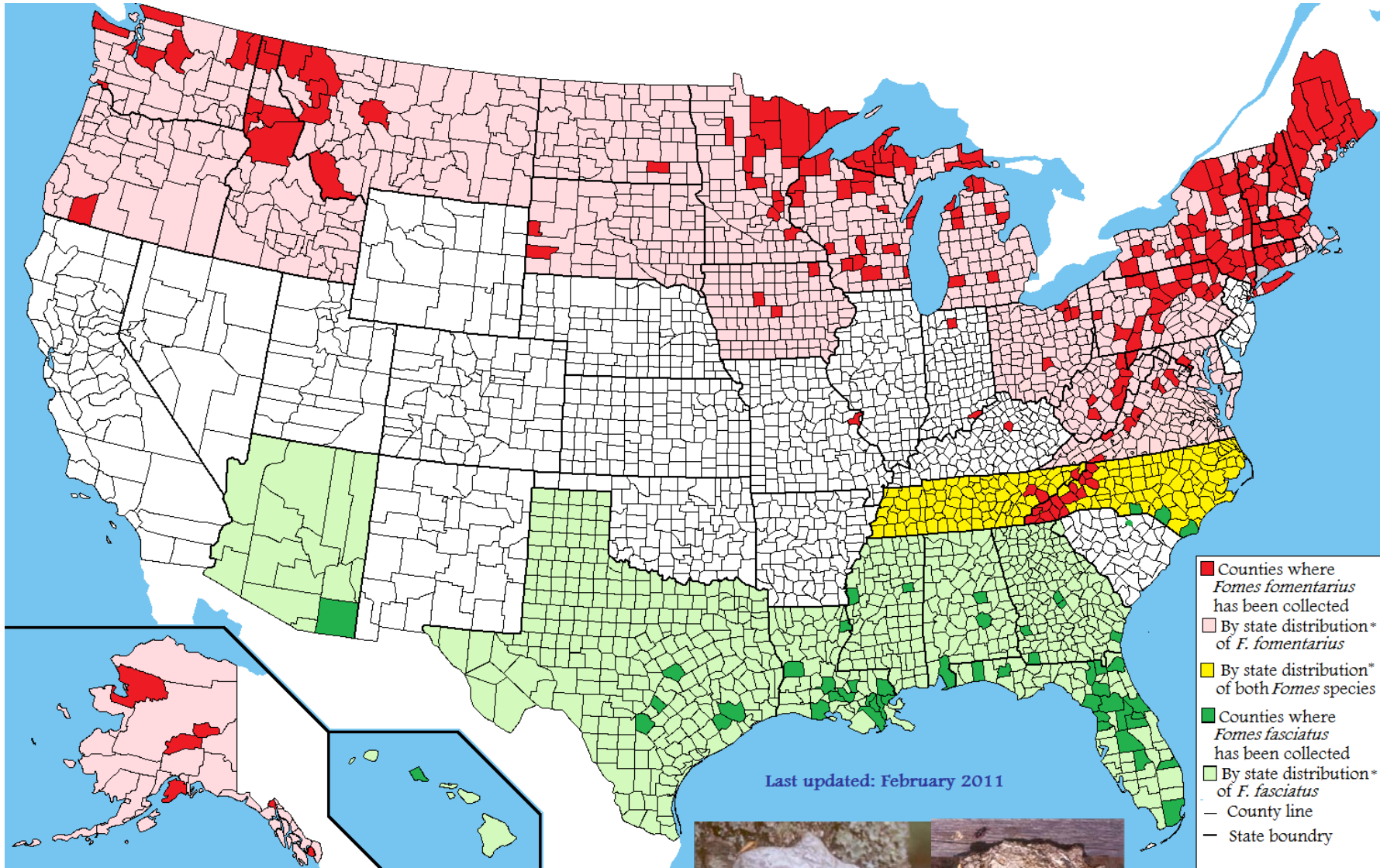
Lessons Learned

- 1) High level of interest in the workshops.
- 1) Importance of receiving professional development credit, establishing relationships, receiving a stipend, and teacher feedback.
- 3) Modules often need to be tailored to student educational levels and backgrounds while meeting objectives for state standards.
- 4) Challenging to conduct workshops outside NC.

Educational module development with biological collection databases

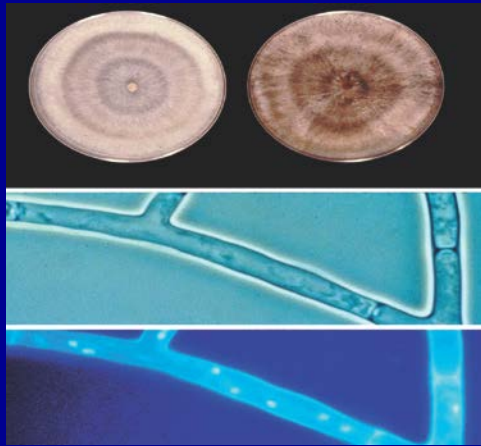
- 1) Distribution of fungi, insects and plants
 - a) CSI - stolen car, wood decay fungus
 - b) Mushroom poisoning of dogs
 - c) Mulch fungi
 - d) History of fungal plant diseases
- 2) Classification and taxonomy
- 3) Incorporating biogeographic, ecological, environmental, and temporal metadata

Distribution map of *Fomes fasciatus* and *F. fomentarius* in the US



McCormick et al. 2012





Questions?

