



Mushrooms Under the Microscope

August 23–29, 2026

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Explore the intricate microscopic world of mushrooms: the exotic ornamentation of spores; the strange details of how filamentous hyphae create the structure of mushroom gills, cap and stalk; and the microscopic taxonomic criteria that are often critical for species determinations. Learn how to use a microscope to best advantage, from dissecting to compound and how to photograph your observations with a simple microscope attachment for your cell phone camera. Learn how to make thin sections of fresh mushroom tissue to observe these details. Become familiar with the terminology describing various microscopic features of fungi. Learn how using the microscope will enhance your ability to systematically identify fungi. Some background in mushroom identification is helpful, but not essential. No previous experience with microscopes is needed. We will use three types of magnification instruments: hand lens (up to 10X), dissecting microscope (up to 100X) and compound microscope (up to 1000x) to give us a complete picture of the micro world of mushrooms. Limited field collecting will provide material to use for microscopic investigation in the well-equipped Eagle Hill laboratories. Dissecting and compound microscopes will be provided. Bring your own 10X hand lens. Some of the specific cells and tissues that you will observe include: Basidiospore and ascospore shape, ornamentation, and staining reaction (especially in Melzer's reagent), structure of basidia and asci, ancillary hymenial structures such as cystidia and setae, pilear surface structure, different hyphal types, hyphal clamp connections, gill trama structure, and ectomycorrhizal roots.

David Porter (porterd@uga.edu) lives in Brooklin, Maine. He is Professor Emeritus at the University of Georgia, where for 37 years he carried out research and was an award winning teacher offering a variety of undergraduate and graduate level mycology classes. Now retired, Porter teaches an occasional mycology class at College of the Atlantic. In addition he is active in outreach programs with lectures, forays and identification services.

Michaeline Mulvey (mjpm955i@zwi.net) has been wandering field and forest since before her mother thought she could find her way home. Looking at everything, but always most fascinated by plants, she was most intrigued by the ephemerals. They were both the most fun to find and the most challenging to identify. In Maine the best ephemerals are mushrooms, appearing like magic throughout the season, and often disappearing as quickly. She has been an active member of Maine Mycological Association for 30 years. She happily works as a Maine Professional Land Surveyor in field and forest across the state, rain or shine.