Graduate Students

Title: Phytochemical and Ethnobotanical Investigations of Ghost Pipe (*Monotropa uniflora*), a North American Medicinal Plant
Presenter: Savannah Anez, The Pennsylvania State University
Coauthors: Joshua J. Kellogg, The Pennsylvania State University; Eric P. Burkhart, The Pennsylvania State University
Abstract: Ghost-pipe (*Monotropa uniflora*, Ericaceae) is a widely distributed North American plant that is used in contemporary folk herbalism in the United States. The species also has a rich ethnobotanical history, and has been used as an analgesic, to treat inflammation, and to allay symptoms of emotional distress. Despite this history of use, little is known about phytochemistry, and it is unclear whether it possesses compounds of medicinal or toxicological activity. Additionally, ghost-pipe is parasitic to mycorrhizal fungi. Thus, its secondary metabolite profile, and therefore medicinal properties, may be more affected by changes in local environment and/or host compared to autotrophic plants. I am pairing untargeted metabolomics approaches with a survey and key informant interviews to characterize this plant's phytochemistry in relation to its ethnobotany. Survey responses indicate pain relief as the most common use of this plant, while other historic uses of this plant have been less commonly reported. Responses also report a tincture of fresh plant material as the most common mode of preparation. Preliminary sampling at three different central PA sites was done last summer, and these samples were extracted and chemically analyzed with UPLC-MS. Principal component analysis (PCA) was unable to differentiate between the chemical profiles of these samples based on their location. However, significant differences in antioxidant activity were observed between extracts from different sample sites. Furthermore, purified fractions of ghost pipe extracts displayed a stronger antioxidant activity than crude extracts, as well as stronger binding capability to certain human serotonin, dopamine, and norepinephrine transport receptors. The results from the survey and preliminary sampling have been used to guide more extensive sampling from multiple states this summer, and these samples will be chemically and bioactively analyzed. Results will collectively be used to better understand therapeutic potential of this plant using ethnobotanical knowledge as a guide.

Title: *Paxistima canbyi* A. Gray (Celestraceae), a rare plant species of the Central Appalachian region of the United States: Preliminary assessment of threats using population genomics

Presenter: Isaac Buabeng, Bucknell University

Coauthors: Christopher T. Martine, Bucknell University; Tanisha Williams, University of Georgia; Rachel Goad, Western Pennsylvania Conservancy; Scott Schuette; Western Pennsylvania Conservancy

Abstract: Understanding the migratory patterns of genes in the clustered metapopulations of *Paxistima canbyi* across its entire range is important for conserving this species. This project, which is born out of a collaboration between scientists and experts from the Pennsylvania Natural Heritage Program and Bucknell University will assess the genetic diversity and phylogeography of two major disjunct *Paxistima canbyi* (Canby's mountain lover or Cliff green, Celastraceae) populations - occupying the limestone-rich interior low plateaus of central Kentucky, Northern Tennessee, and southern Ohio, and the similarly limestone-rich central Appalachian mountains of Southern Pennsylvania, West Virginia, Maryland, and Virginia - using a reduced-representation sequencing method i.e. Genotype-By-Sequencing (GBS). Data acquired through the Genotype-By-Sequencing (GBS) approach will be used to generate genomic libraries for assessing gene flow, genetic diversity, and migration patterns between other subpopulations and the phylogenetic relationships and historical introgression of populations within and between the two major disjunct *Paxistima canbyi* metapopulations. The results of my project will directly influence the conservation of *Paxistima canbyi* in the United States and contribute to the growing body of knowledge on the genetic structure, health, and phylogeography of *Paxistima canbyi* populations across its range.

Title: Pollinator interactions between native flowers and their ornamental counterparts on Shippensburg University's campus

Presenter: Christopher Duff, Shippensburg University
Coauthors: Heather Sahli, Shippensburg University

Abstract: There has been a mixed message about whether pollinators find exotic flowers as adequate substitutions for native flowers in urban and suburban environments. Because the replacement of native plants for exotic, ornamental flowers in suburbs has been shown to negatively impact caterpillars and insectivorous birds, this substitution may also harm pollinators. To address this knowledge gap, we compared pollinator preference for PA native flowers to their exotic, ornamental counterparts in the urban habitat of Shippensburg University's campus.

We set up 12 pairs of pots across Shippensburg University's campus containing four PA native flowers in one pot, and four of their corresponding, exotic hybrids or cultivars in the other. We conducted pollinator visitation observations for each plant on a rotating basis throughout the Summer of 2023. Furthermore, we quantified the pollen rewards presented by each plant species.

Rudbeckia was the only genus to have a significant difference between total number visitors and total visitations per flower, with the exotic hybrid receiving more visitors and visitations per flower. For pollen rewards, *Verbena* was the only genus with a significant difference between native and exotic species, with the native, *V*. *stricta*, producing more pollen. These findings demonstrate a relationship between pollinators and flowers in an urban environment that is more complicated than assuming native flowers are always better. Also, although this study shows exotic plants may serve as a resource for urban pollinators, the pollen reward analysis shows exotic plants may not always be as nutritious as their native counterparts. Therefore, even though exotic plants can be as or more attractive to pollinators, native plants may serve as more nutritious options for pollinators in some cases. Nevertheless, there is also a chance exotic, ornamental flowers in urban habitats are providing beneficial services for pollinators in urban habitats.

Title: Determining survival, competition ability, and photosynthetic capacity of hybridized, blight-resistant American Chestnut Trees (*Castanea dentata*).

Presenter: Peyton Eckard, Indiana University of Pennsylvania
Coauthors: Michael Tyree, Indiana University of Pennsylvania; Brenda Wasler, National Park Service

Abstract: The American chestnut (*Castanea dentata*) was one of the most culturally significant trees in the eastern United States, but when the chestnut blight (*Cryphonectria parasitica*) was introduced, it took A. chestnuts to near extinction. American chestnut has since been hybridized with Chinese chestnuts (*C. mollissima*) to produce blight resistant hybrids that are actively being reintroduced back into their native habitat. Oaks (*Quercus* spp.) benefitted from the absence of A. chestnuts and adopted the available niches as the dominant hard-mast producing species. This research addresses if bight-resistant A. chestnuts can compete with oaks to reestablish themselves back into their historic habitats. Specifically, our objectives are to determine: i.) if differences occur in photosynthetic capacity (A_{Max}) among the three species studied, ii.) any differences in lighting requirements among the species, and iii.) if there are interactions among species and light availability. We used a randomized complete block design with species and light treatments set up as a 3x3 full factorial. We applied three different shade treatments (high, medium, and low light) across six-year-old, blight-resistant A. chestnut hybrid, white oak (*Q. alba*), and red oak (*Q. rubra*) trees planted at Flight 93 National Memorial, which is a reclaimed surface mine. We used the LiCOR 6400XT to measure photosynthetic capacity of each tree to determine difference between available light levels and species. The American chestnut hybrids were 15% lower than the oak species ($p=0.05$), however, no difference in A_{Max} was detected among available light treatments as either its own effect or an interaction. This could indicate that leaf morphology plays a significant role in carbon assimilation.

Title: Habitat Suitability Modeling of Goldenseal (Hydrastis canadensis) in Pennsylvania

Presenter: Ezra Houston, Penn State University

Coauthors: Grady Zuiderveen, U.S. Forest Service; Eric Burkhart, Penn State University; Xin Chen, Florida State University

Abstract: Goldenseal (*Hydrastis canadensis* L.) is a well-known perennial forest herb indigenous to eastern North America. In Pennsylvania, conservation concerns including wild harvesting for medicinal markets, habitat loss and degradation, and a patchy distribution present both a need for in-situ conservation efforts and an income opportunity for landowners. In support of these efforts, measurements of site-level habitat conditions observed in the field were combined with statewide GIS-based habitat suitability modeling to provide guidance for in-situ conservation and forest farming site selection. Field based methods included measurements of soil characteristics and topographic position, as well as indicator species analysis (ISA) to determine common floristic associates with goldenseal. Site-level soil testing identified loam soils as the most common textural class, with an average pH of 6.2 and high variation in macronutrients. Topographic measurements pointed to goldenseal's preference for moist, lower slope woodland sites. Indicator species analysis identified tulip-poplar (*Liriodendron tulipifera*) and sugar maple (*Acer saccharum*) as the most prevalent overstory associates. Spicebush (*Lindera benzoin*), Virginia creeper (*Parthenocissus quinquefolia*), Jack-in-the-pulpit (*Arisaema triphyllum*), mayapple (*Podophyllum peltatum*), wood fern (*Drypoteris marginalis*), and rattlesnake fern (*Botrypus virginianus*) were the most common understory associates. Maxent modeling confirmed observations of site-level characteristics, identifying lower slope positions with high levels of organic matter and wet to mesic soil as most suitable for goldenseal. While such sites are widespread in Pennsylvania, Maxent modeling suggests the present distribution is restricted by cold winter temperatures in the north of the state and at high elevations. Additionally, bedrock types derived from acidic sandstone or with land use legacies of row crop agriculture were unsuitable for goldenseal. This research can guide decision making at multiple scales by first narrowing the breadth of potential sites for surveying, and then informing site-level selection using specific habitat cues.

Title: Vitamin Content of Two Species of “Ramps”, or “Wild Leeks”, *Allium tricoccum* and *A*. *burdickii*.
Presenter: Kirk Lawson, Penn State University
Coauthors: Eric P. Burkhart, Penn State University; Joshua D. Lambert, Penn State University
Abstract: Two species of wild *Allium* are harvested for their leaves and bulbs each spring across the northern U.S and southern Canada, *A*. *tricoccum* and *A*. *burdickii*. These are collectively known as “ramps” or “wild leeks”. Their nutritional values are analyzed and compared in this study.

Despite the widespread consumption of these species, only one study has been conducted examining nutrient content; and it used a small sample size and only one species (*A*. *tricoccum*). Given that these are widely consumed wild plants, it is important to know their nutritional value.

Samples of both species were collected from 19 forest sites in Pennsylvania (11 *A*. *tricoccum* and 8 *A*. *burdickii* sites). Standard calibration curves were used to quantify vitamins: C, B2, B3, B6, and B9, on a high-pressure liquid chromatography instrument with diode array detector. Approximately 200 samples were analyzed (20 per site). Leaves and bulbs were analyzed separately. Additionally, *A*. *tricoccum* contains red- and green-stemmed color morphs and these are also being compared.

Preliminary results will be shared at the symposium. Differences have been observed in the vitamin content, but it is unclear whether these are statistically significant at this time.

Ramps are a very popular culinary item and are being suggested as a forest-farmed agroforestry non-timber forest product. It will be beneficial to learn how their nutritional content varies between species and phenotypes to benefit quality control and species selection.

This is the first time the two ramp species have had nutrient content compared, and the first known nutritional analysis of *A*. *burdickii*.

Title: Eastern hemlock (*Tsuga canadensis*) physiological responses to elongate hemlock scale (*Fiorinia externa*) infestation.

Presenter: Robert T. Michalow, Indiana University of Pennsylvania
Coauthors: Michael C. Tyree, Indiana University of Pennsylvania; Sarah Johnson, Pennsylvania Department of Conservation and Natural Resources; Tim Tomon, USDA Forest Service - Morgantown Field Office; Will Oldland, USDA Forest Service - Morgantown Field Office

Abstract: Eastern hemlock (*Tsuga canadensis*), a major component of forests in eastern North America, is appreciated ecologically as a foundation species where local biota thrive in hemlock-dominate ecosystems. With increased globalization, hemlock woolly adelgid (*Adelges tsugae*) consequently arrived in North America and has since threatened eastern hemlock, where widespread decline has been reported throughout much of its native range. Furthermore, elongate hemlock scale (*Fiorinia externa*) is another invasive insect pest that is seeing significant population growth on native hemlocks, but much debate still exists on whether it is a cause of concern for current hemlock management programs. This project investigates if hemlock stress-induced responses are occurring at an individual branch level on treated trees absent of hemlock woolly adelgid but populated with elongate hemlock scale. To enumerate, objectives of this project are *i.)* determine if elongate hemlock scale infestation causes stress-induced responses of eastern hemlock at an individual branch level by measuring tree physiological properties, *ii.)* observe this interaction with respect to seasonality to determine if stress-induced responses are arising during a certain elongate hemlock scale developmental stage, and *iii.)* prove a workable window exists after branch detachment to validate methodology. Twenty eastern hemlock trees that met strict criteria located in Tuscarora State Forest were selected as the sample population. Using a LiCOR 6400XT portable photosynthesis system, two branches classified as elongate hemlock scale present and absent were selected from each tree and subsequently analyzed to determine if any physiological differences existed. Sampled branches classified as elongate hemlock scale present and absent had no differences in net photosynthesis (P_{net}) or daytime dark respiration (R_{dark}) physiological variables in each sampling campaign. Having no observable difference between elongate hemlock scale present and absent branches may indicate that the densities observed in this study are not high enough to elicit hemlock stress-induced responses.

Title: How “wild” is American wild ginseng? Investigating the role of human cultivation in shaping morphological and genetic diversity of a valuable non-timber forest resource

Presenter: Rachel Palkovitz, Department of Anthropology, Penn State University
Coauthors: Rachel Palkovitz, Penn State University; Eric Burkhart, Penn State University; Sarah Nilson, Penn State Beaver

Abstract: Unconscious selection refers to genetic changes that rapidly accrue over generations when plants are placed in a novel environment and reproduce at a faster rate than in the wild. In this study, we investigate the research topic of unconscious selection from human cultivation in shaping genetic and morphological diversity in American ginseng (*Panax quinquefolius* L.) The main problem we address is that seeds from commercial ginseng farms are planted in Appalachian forests to supplement natural reproduction, but the effect that this has on ginseng genetic and phenotypic diversity is unknown. Has the practice of human cultivation resulted in non-native lineages being introduced to Appalachian forests, and do these lineages show any major differences in morphological traits? Utilizing a combination of genetic and morphometric methods, we are analyzing a comparative sample of commercially cultivated and wild ginseng specimens from 37 populations ranging from the Midwest to eastern Pennsylvania that we collected from 2021- 2023 (N=567) using 14 microsatellite genetic markers paired with 5 morphometric trait measurements. We will also conduct key informant interviews with ginseng growers in artificial shade and forest farm settings, using grounded theory analysis to characterize if and how growers source and select ginseng stock. Major points of discussion include the role of ginseng growers in influencing ginseng diversity through their knowledge of stock origins, selection, and distribution, as well as the possible conservation challenges posed by genetic admixture between cultivated and wild ginseng populations. While data collection is still ongoing, preliminary results indicate that above-ground morphological diversity exceeds what is currently represented in the taxonomic key, and one trait, peduncle to petiole ratio, is not a reliable marker of lineage membership. Pilot interviews with commercial growers indicate that ginseng growers identify above-ground morphological characteristics they associate with specific ginseng lineages (e.g., Canadian, Menominee Native American).

Title: Classifying understory plant communities in the Susquehannock State Forest, PA
Presenter: Nicole Palmer, The Pennsylvania State University
Coauthors: Autumn Sabo, Penn State Beaver; Marc McDill, The Pennsylvania State University
Abstract: We aimed to classify unique understory plant communities in the Susquehannock State Forest, PA. The goal of this analysis was to identify clear differences between species assemblages that can be used by foresters and wildlife managers to support management decisions. We sought to address the following questions:

1. Are there natural assemblages that occur among understory communities in a northern hardwood ecosystem?

2. Which species characterize the understory community types?

We collected 10 years of data from permanent plots located in the Susquehannock State Forest of northcentral Pennsylvania recording the composition and abundance of understory vegetation.

We analyzed the community composition at each site sampled in 2014 and 2015 based on the cover of non-tree vegetation and tree seedling counts. Our communities were constructed based on a cluster analysis of 329 subplots. We found evidence to support the distinction between several different understory community types among a relatively homogenous hardwood overstory. In the resulting clusters, between 1-5 taxa emerged as characteristic of the different assemblages.

Following this initial analysis of community assemblages, we plan to analyze the abiotic environment covariates that contribute to community uniqueness. The differences among understory community types may also lead to different outcomes for seedling regeneration, which will be explored through an additional cluster analysis with our 2021 and 2022 datasets to monitor for changes over time. The understory communities we identified here are compositionally distinguishable from one another, which may lead to benefits for forest management.

Title: Effect of Prescribed Burning and Deer Exclusion Fencing on Wild Lupine (*Lupinus perennis* L.)
Presenter: Isabella Petitta, The Pennsylvania State University
Coauthors: Autumn E. Sab, The Pennsylvania State University; Margarita M. López-Uribe, The Pennsylvania State University
Abstract: Wild lupine (*Lupinus perennis* L.) is a perennial plant distributed from Minnesota to the east and along the Atlantic coast in the United States and southern Canada. Habitat loss and the alteration of historic disturbance regimes have contributed to population declines throughout its range. Conservation status rank varies between states and provinces but in Pennsylvania it is ranked as Pennsylvania Rare. To best conserve existing populations, land managers are in need of recommended management regimes. Here we test the hypothesis that prescribed fire and deer exclusion fencing alter wild lupine growth. We tested this hypothesis with a factorial field experiment in which we manipulated low-intensity fire (burned/unburned) and deer browsing (fenced/unfenced). Floral traits were assessed in the spring before and after treatments were applied. Preliminary analysis shows there was no significant effect of any treatment on the number of individuals or flowering stems across 5 wild lupine populations. This suggests that prescribed fire and deer exclusion fencing do not significantly affect wild lupine growth one year after treatments are applied. Treatment effects on habitat and surrounding plant communities are an important consideration for conservation of this species. These effects have been measured but not yet quantified. Management recommendations should consider the use of fire and fencing in wild lupine populations although this should be further investigated.

Title: Are exclosures really doing any good? Exploring native plant abundance in a severely invaded suburban fringe forest plagued by white-tailed deer and non-native plant invaders

Presenter: Gillian Revenis, Chatham University
Coauthors: Ryan Utz, Chatham University; Walter P. Carson, University of Pittsburgh

Abstract: Two pervasive threats facing Eastern Deciduous Forests are overabundance of white-tailed deer (*Odocoileus virginianus*) and the rapid spread of non-native invasive plants. Chronic overbrowsing of native plants has often locally extirpated palatable species and enabled invasives to flourish, leading to a greater regeneration failure. Such dynamics, lead to depauperate and recalcitrant understories of invasive shrubs that render forests vulnerable to disturbances. We evaluated the combined impact that overabundant deer and non-native invasive plants have on native plant communities. In 2018, 2.2 m tall fences were erected and paired with adjacent control plots. We removed all invasive plant species from a randomly selected half of each exclosure and control in May 2019. We tested the hypotheses that 1) species richness and diversity will be higher within portions of the exclosures in which invasives were removed, 2) native species abundance will be highest amongst fence and removal areas, and 3) invasive removals will have no impact on species diversity, richness, or abundance of nonnative plants. We found that species richness and diversity were higher within fenced and removal areas in comparison to plots that were unfenced and had no removals. Additionally, native abundance was higher in fenced areas with removals, however, removals of invasive plants had little to no impact on richness, diversity, and abundance. We found *Fraxinus* spp. to be the most found tree sampling inside fences, indicating a potential regeneration debt in this forest, since these saplings are unlikely to become mature trees due to the emerald ash borer. Extensive single-occasion invasive removals are unlikely to prove enough to limit impact on native plants, suggesting that in the absence of herbivores, invasive plant regeneration increases.

Title: Historical climate change shifts flower shape and production of a common annual plant, Orange Jewelweed (*Impatiens capensis*)

Presenter: Amber Stanley, University of Pittsburgh
Coauthors: Tia-Lynn Ashman, University of Pittsburgh

Abstract: Climate change is a major-human mediated stressor that alters temperature and precipitation patterns across the globe. In the Eastern United States, projections show that annual temperatures will increase 3-5 degrees Celsius and precipitation will increase 20% by 2100. Such changes in the environment have the potential to disrupt key species interactions. For example, nearly 90% of all flowering plants rely on insect pollinators to transfer pollen between individuals. Higher temperatures cause many plant species to flower up to 3-4 weeks earlier in the year, but pollinator activity has not shifted with the same magnitude, meaning that flowers are produced when fewer pollinators are active. Flower size can be limited by increasing temperatures, which makes it harder for larger pollinators to transfer pollen. Some plant species can produce self-pollinating flowers to mitigate disruptions in pollination, however this can decrease genetic diversity. Here, I ask How have temperature and precipitation increases due to climate change influenced floral traits of a common focal species? To investigate this question, I used a focal plant species, Orange Jewelweed (*Impatiens capensis*). This well-characterized annual plant is common in wetlands and floodplain forests of the Eastern United States. It primarily relies on bumblebees to transfer pollen between individuals, but can also produce selfing flowers. Using digitized herbarium collections, I measured the timing of flowering, flower size and production on herbarium specimens of 650+ collected in Pennsylvania between 1900-2020. I used CRU-TS climate projections to extract temperature and precipitation for each specimen. I hypothesize increasing temperatures are highly correlated with H1) earlier flowering time and H2) increased production of flowers, and increasing precipitation is correlated with H3) increasing flower size. Such changes in floral traits due to increasing temperatures may alter the pollination interaction and could increase extinction risk.

Title: You've Been Warned: Tall goldenrod (*Solidago altissima* L.) changes its gene expression after detecting the nearby emission of a gall-inducing herbivore

Presenter: Robert Witkowski, The Pennsylvania State University
Coauthors: Lily Sudol, The Pennsylvania State University; Eric Yip, The Pennsylvania State University; John Tooker, The Pennsylvania State University; Tanya Renner, The Pennsylvania State University

Abstract: Plant-insect interactions are heavily influenced by chemical cues in the environment. When plants perceive a chemical associated with a specific herbivore, they induce chemical defenses in preparation for a possible challenge from that herbivore. This phenomenon, called "priming", enables a rapid defense response to later herbivory. Priming mediates interactions of tall goldenrod (*Solidago altissima* L., Asteraceae) and the goldenrod gall fly (*Eurosta solidaginis* Fitch, Diptera: Tephritidae), a classic, multi-trophic model ecology system that is commonly observable across Pennsylvania. While perching on goldenrod, male gall flies emit a volatile pheromone to attract mates. This airborne pheromone primes nearby *S*. *altissima* plants. Although costly in resources, priming in *S*. *altissima* appears to confer resistance to galling and feeding by some co-occurring specialist herbivore species. However, it is not known how *S*. *altissima* alters its gene expression in the primed state, if at all. Our experiment, the first to use transcriptomic tools in this system, addressed two questions: does *S*. *altissima* priming against *E*. *solidaginis* confer any resistance to unrelated generalist herbivores, and how do defensive gene expression patterns differ between primed plants and plants that are naive to the priming cue? We exposed *S*. *altissima* plants to *E*. *solidaginis* pheromone and added a generalist caterpillar to feed for 48 hours. We harvested damaged plant tissue at five time points during that period for Illumina RNAseq and performed differential gene expression (DGE) analysis using the Trinity pipeline. Our DGE results indicate that primed plants induce a suite of gene pathways like wounding response and jasmonic acid induction earlier than naive plants. Additionally, the timing and relative expression of defense-related genes appears to change in the primed state, indicating that priming entails wide-scale transcriptomic changes. This study identifies molecular signatures of priming and characterizes strategies plants use to defend themselves in their environment.

Title: Ecoculture Market Analysis and Business Best Practices

Presenter: Andrew Wraith, University of Pennsylvania
Coauthors: Sally Willig, University of Pennsylvania

Abstract: Ecoculture is the ancient practice of cultivating food, medicine, and other useful products in the context of natural ecosystems (Thayer, 2017). At its heart ecoculture is the process of restoring and cultivating healthy robust ecosystems in which humans are integral to the ecology. Despite this being an ancient practice across the globe, few examples persist in our modern economy. These include maple syrup forests and blueberry barrens. There has been little research published on the topic of running a successful ecoculture business. A literature review and interviews will be conducted to consolidate available information on current and past ecoculture practices. A market analysis will be conducted to gather primary data regarding the financial feasibility of running an ecoculture practice. Finally, a book on running a successful ecoculture business will be created with the potential to provide a powerful tool for ecoculture practitioners to start their own business. Given the blending of goals and outcomes in an ecoculture framework, a mixed non-profit and for-profit business model may be the best fit. If ecoculture entered the mainstream as a method for food production, nature preservation, and engaging our human communities in a reciprocal relationship with nature, this could have positive impacts on the resilience in our global food supplies, biodiversity, food sovereignty, and public health.

Title: Mushroom Hunting in the Mid Atlantic

Presenter: Amy Wrobleski, Penn State University
Coauthors: Eric Burkhart, Penn State University

Abstract: Mushroom hunting has long been an important part of identity for Pennsylvanians. It is the centerpiece of clubs, forays, and festivals around the state. However, very little is actually known about who mushroom hunts in Pennsylvania and, more broadly, the Mid Atlantic. To better understand who hunts for mushrooms in this region and why, we developed a survey instrument that was distributed through a convenience sampling method to self-identified mushroom hunters in the Mid Atlantic. The survey was distributed at mushroom club forays and festivals, through workshops and classes, and through social media. A total of 904 people from the Mid Atlantic completed the survey. The results indicate that mushroom hunting has grown substantially as a pastime in recent years, with the greatest growth in 2020. Additionally, while a majority of mushroom hunters forage mushrooms to eat, many of them also forage mushrooms for other purposes such as: medicinal use, community science projects, art, and photography. Despite these varied uses, the mushrooms of greatest interest are either edible or medicinal (or both). Understanding who hunts for mushrooms in this region and why will allow for conservation efforts, public policy, and educational materials to better align with the interests and needs of the mushroom hunters. Many community members are already participating in community science projects through mushroom clubs, mycological associations, and platforms such as iNaturalist. Allowing for greater understanding and collaboration between the mushroom hunters, land managers, and scientists will allow for a richer understanding of the ecology and mycology of Pennsylvania and the Mid Atlantic region.