

NETWORKS, CENTERS, OBSERVATORIES, AND FIELD STATIONS

A New Field Station, Footsteps from Philadelphia

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The Temple Ambler Field Station, located just 40 minutes outside of Philadelphia, Pennsylvania, offers new opportunities for environmental field research and education (Fig. 1). Temple University's Ambler Campus was officially designated as a field station by Temple's Office of the Vice President for Research in 2020, making us one of the newest field stations in the country. Our 187-acre campus and arboretum offer a diversity of natural habitats, including old growth and secondary forests, meadows, ephemeral streams, and beautiful designed gardens (Fig. 2). The Field Station provides access to research and educational support facilities, including laboratories, an outdoor research array, greenhouse, research garden, and animal research facility accredited by the American Association for Laboratory Animal Care (AALAC). Amenities also include offices for visiting scholars, smart classrooms, instructional computer laboratories, meetings spaces, a library with full access to the Temple University Library System, and a fully equipped technology center with 65 workstations in our 72,000 square-foot Learning Center (Fig. 3). Our campus also offers dormitory accommodations for up to 50 people, a 300-seat auditorium, an on-site convenience store, and a suite of recreational activities, including a pool, weight gym, indoor and outdoor basketball, tennis, and volleyball. A trail system also helps researchers, students, and visitors access and enjoy our forest ecosystems (Fig. 4).

The Temple Ambler Field Station serves both as an ecological observatory and as a platform for research across disciplines. Our research initiatives will document fundamental changes in our natural environments and provide these data as a publicly available resource to our community of researchers and educators. We are currently collaborating with the Smithsonian Institution's Forest Global Earth Observatory (ForestGEO) to establish the Temple Forest Observatory (Fig. 5), using standardized



Fig. 1. Temple Ambler Field Station provides facilities for research and education, along with meetings and workshops (pictured: Ambler Campus Visitors Center). Photo credit: James F. Duffy, Temple University.

ForestGEO protocols that will allow our publicly available data to be directly compared to ForestGEO site data from around the world. The Temple Forest Observatory will include two 4-ha research plots in an older growth forest and a secondary forest, providing an opportunity to study the long-term dynamics of forest recovery (Fig. 6). Together, these plots will serve as a platform for integrated research and education, supporting faculty research, student internships, undergraduate course modules, and publicly available educational materials. The Field Station also supports a cross-disciplinary array of research projects and centers, with investigations spanning environmental science to engineering, including disease ecology, seismography, stormwater management, invasive species, and sustainable energy and food systems.

The Temple Ambler Field Station is also a platform for experiential education and outreach, where students of all ages and backgrounds can get hands-on field-based experiences (Fig. 7). We leverage the enthusiasm and expertise of our citizen scientists to help gather information about our natural environments, including the over 800 taxa that have been documented on our campus to date through the extensive Ambler Arboretum plant collection (Fig. 8) and our research and citizen science activities. We partner with the Ambler Arboretum to promote citizen science programming in support of initiatives such as the Great Backyard Bird Count and Project FeederWatch, and online nature databases, including



Fig. 2. Two ephemeral streams trace through the upland forests that surround the 187-acre campus. Photo credit: Joseph V. Labolito, Temple University.

iNaturalist, iMapInvasives, eBird, and Budburst, allowing visitors to the Field Station to engage in science that directly informs our understanding of our campus and region. In partnership with Temple Ambler's EarthFest Presents, we hold an annual Bioblitz, engaging up to 15 scientists and 200 community members each year, ranging in age from 4 to 80 years old. In an effort to diversify participation in the sciences, a priority of the Field Station is to provide access and opportunities to students from populations under-represented in science. Many populations of students, particularly those in urban centers, lack proximity to field stations and natural environments that can serve as a platform for education, thereby limiting their access to advanced field-based training. By leveraging the strengths of the Temple Ambler Field Station's location and assets, we are actively establishing undergraduate research and K-12 educational opportunities that promote diversity in environmental fields. Our partnerships with the Ambler Arboretum and EarthFest Presents allow our educational programming to reach over 5,000 people each year and nearly 100 schools, including many urban schools in the region.

For more information about the Temple Ambler Field Station visit:
<https://ambler.temple.edu/research/temple-ambler-field-station>
or find us on social media @tufieldstation.



Fig. 3. The Ambler Learning Center provides smart classrooms, instructional computer laboratories, a fully equipped technology center, an auditorium, and an on-site convenience store. Photo credit: Joseph V. Labolito, Temple University.



Fig. 4. Researchers, students, and visitors can access the secondary forests using our trails. Photo credit: James F. Duffy, Temple University.



Fig. 5. Temple Ambler Field Station offers access to 75 acres of older growth and secondary forests, which include the Temple Forest Observatory. Photo credit: Joseph V. Labolito, Temple University.



Fig. 6. The Temple Forest Observatory is a platform for research and education, and represents a collaboration between the Temple Ambler Field Station and the Smithsonian Forest Global Earth Observatory (ForestGEO). Pictured: Mary Cortese (left) and Mariana Bonfim (right), Field Station Graduate Research Assistants, conduct field work in the Temple Forest Observatory. Photo credit: Joseph V. Labolito, Temple University.



Fig. 7. The Field Station is a site of learning and exploration for students of all ages and backgrounds. Pictured: Dr. Amy Freestone (right), Director, works with Chloe Gehret (left), Field Station undergraduate researcher and Temple Science Scholar, in the Temple Forest Observatory. Photo credit: Joseph V. Labolito, Temple University.



Fig. 8. Temple Ambler Field Station and Ambler Arboretum partner to engage a broad community of citizen scientists to document the biodiversity present on campus (pictured: Louise Bush-Brown Formal Perennial Garden). Photo credit: James F. Duffy, Temple University.