

Campus Facilities and Equipment

The Department of Agronomy has offices and laboratories in three buildings on campus: Lilly Hall of Life Sciences (LILY), Plant and Soils Building (LSPS), and Whistler Hall of Agricultural Research (WSLR). There are also greenhouse facilities in the Life Science Ranges attached to the Plant and Soils Building. USDA-ARS adjunct faculty and staff are located in LILY, LSPS, and a federal building on campus, the USDA National Soil Erosion Research Laboratory (SOIL). Table 1.16 presents allocation of space to Agronomy based upon classification of use.

Lilly Hall of Life Sciences (LILY)

LILY is one of the largest buildings on campus and houses four departments including: Agronomy, Animal Sciences, Biology, and Botany and Plant Pathology. The largest portion of Agronomy's office and laboratory space (39,483 sq. ft.) is in LILY. The department is located on four floors.

Agronomy moved into the building in 1955. Since then Agronomy's space in LILY has been extensively renovated and is in good condition. The laboratories in LILY are well equipped with three autoclaves, twelve small growth chambers, and fifteen ultra-low temperature freezers. The department also has a combination cold room/low temperature laboratory located on the second floor.

Life Science Plant and Soils Laboratory (LSPS)

LSPS has traditionally been composed of dry laboratories where researchers from Agronomy and Botany and Plant Pathology process plant and soil samples. Shared facilities in the building include fifteen large sample dryers, four grinding units with dust arresters, and 1,462 square feet of cold/freezer storage for seed and soil, of which the Agronomy department has been assigned approximately 800 square feet. A 1,163-square-foot walk-in climate controlled room was completed in 2004 for long term-seed storage and is located in the basement. In fall 2008, installation of an additional 790-square-foot climate controlled long-term seed storage unit began. There will also be 1,322 square feet that will be renovated and converted to dry labs and service.

Whistler Hall of Agricultural Research (WSLR)

Six departments occupy office and laboratory space in WSLR. WSLR is intended to coalesce faculty who have primary research focus in genomics in order to enhance collaborative efforts and to consolidate common use facilities such as growth chambers and sequencers. The offices and laboratories of three faculty in Agronomy are located in WSLR and occupy 5,653 square feet on the second and basement floors. In 2007, 433 square feet of additional space was converted from offices to common use dry lab facilities for Agronomy programs.

Table 1.16. Space allocated to the department of Agronomy

Use Classification	LILY*	LSPS**	WSLR***	Total	Assigned to USDA
Classrooms and Study Centers	6,647	-	-	6,647	
Research labs and service	17,816	3,568	4,132	25,516	2,292
Dry labs and service	-	6,484	-	6,484	
Offices and service	13,313	2,095	1,521	16,929	783
Climate controlled seed storage	-	1,163	-	1,163	
Cold rooms	-	1,108	-	1,108	
Plant and seed dryers	-	1,319	-	1,319	
Departmental commons	1,707	-	-	1,707	
Column Totals	39,483	15,737	5,653	60,873	3,075

* LILY = Lilly Hall of Life Sciences

** LSPS = Life Science Plant and Soils Laboratory

*** WSLR = Whistler Hall of Agricultural Research

The Life Science Greenhouse Complex

The Life Science greenhouse complex is composed of 57 individual growing rooms totaling approximately 54,000 square feet. The growing rooms are connected to the greenhouse service building (head house) where soil and miscellaneous supplies are stored. The greenhouse service building also has two rooms that house growth chambers, and the Agronomy Department currently has a total of eleven chambers. The greenhouse complex also includes a pesticide mixing and storage room, commercial soil mixer/sterilizer, and two 15-square-foot autoclaves. This facility is shared by three departments; Agronomy, Botany and Plant Pathology, and Biological Sciences. The Agronomy Department is assigned 54 percent of the available space. Agronomy employs a full-time technician to prepare soil, maintain the entire complex, and apply pesticides to growing rooms as needed.

Off Campus Facilities and Equipment

The Agronomy Department currently has outdoor field facilities and indoor educational facilities at the Agronomy Center for Research and Education (ACRE) and the William H. Daniel Turfgrass Research & Diagnostic Center (Daniel Center). Research is also conducted at several Purdue Agricultural Centers (PACs) around Indiana.

Agronomy Center for Research and Education (ACRE)

The ACRE is an outdoor, hands-on, agronomic laboratory for researchers and educators from several departments. It is strategically located 7 miles northwest of campus on 995 acres of prairie and forest soils. In 2008, an additional 140 acres was purchased and will be developed for pending research needs bringing total acreage to 1,135. Several researchers maintain project buildings at ACRE as their “home-base” for field research equipment and seed storage, sample processing, and as a place to repair or modify field research equipment.

More than 50 researchers from Agronomy, Botany and Plant Pathology, Entomology, Agricultural and Biological Engineering, Forestry and Natural Resources, Earth and Atmospheric Sciences, Biology, and Horticulture and Landscape Architecture conduct an estimated 130 projects at ACRE each year. Although most research is conducted by agronomists, the scope of other projects is far ranging. Interdepartmental cooperation is evident in many areas.

Both the interdepartmental Crop Diagnostic Training and Research Center (started 1986) and Post Harvest Education and Research Center (started 1995) are located at ACRE. The Water Quality Field Station is a unique “in-ground laboratory” constructed (15 acres) at the north end of the ACRE to provide data on the environmental relationships of crop production.

Since 1975 the Long Term Tillage plots (15 acres) have been available to researchers to study different crop rotations and tillage systems. The Integrated Pest Management plots (40 acres) were established in 1980 by USDA-ARS to study crop disease relationships with crop rotation and tillage variables. These long term research plots provide invaluable and unique ecologies in which to study treatments under near equilibrium conditions.

The ACRE serves as an educational facility to the Purdue community as well as to many groups outside Purdue, including K-12. More than 100 field days, class field trips, educational events, and international tours are held at the farm each year. The addition of the 20,000-square-foot Beck Agricultural Center in 2008 greatly enhanced educational opportunities. The maintenance and educational programming of the Beck Center is administered through the dean’s office.

Operating expenses for ACRE are mostly generated by the sale of crops from the farm. No land fee is charged for field research. The 60-year-old facility is undergoing significant infrastructure and building upgrades with special funds. As part of the 2007 Beck construction, both city water and sewer were extended to the farm.

ACRE staff, including the superintendent and four full time farm personnel, provide seedbed preparation, fertility applications, herbicide applications, and (if time allows) assistance with plot work. The ACRE combines are also provided to help harvest plots for various researchers. GPS yield data is available upon request.

William H. Daniel Turfgrass Research and Diagnostic Center (Daniel Center)

The Daniel Center is conveniently located just north of campus and adjacent to one of two 18-hole campus golf courses. It has an educational facility and turfgrass research plots. Prior to 1996, the turfgrass program utilized approximately five acres at the ACRE to conduct research related to turfgrass maintenance. Today, there are 22 acres at the Daniel Center dedicated to turf research.

The educational facility was opened in 1999 and includes a shop area for equipment and material storage, office space, a conference room, restrooms, and a classroom with capacity for 70 seated at tables. Extension seminars/workshops, industry seminars, and University-related functions and meetings use the class room over 175 days each year.

Researchers who currently use the center include six professors and upper level administrative/professionals, two turf technicians, and several graduate students from Agronomy, Botany and Plant Pathology, and Entomology. The Daniel Center is also used by the Purdue Pesticide Program for pesticide certification training and by Purdue Intercollegiate Athletics for summer golf camps and as headquarters for volunteers during large golf tournaments such as the 2008 Men's NCAA Championship.

Staffing for the Daniel Center includes one hard-funded facility manager, a soft-funded assistant to the manager, and hourly laborers. Most of the equipment is on loan from retail distributors while other equipment has been purchased through research projects. The Midwest Regional Turf Foundation and faculty research projects are the primary funding sources for the Daniel Center.

Expansion plans for the Daniel Center include an additional storage facility and research space to accommodate ornamental horticulture studies. However, current land rental or purchase costs prohibit these plans.

Purdue Agricultural Centers (PACs)

In addition to the ACRE and Daniel Center, the College of Agriculture supports eight regional Purdue Agricultural Centers throughout Indiana to accommodate interdepartmental field research. Each center represents one of the state's major soil and climate regions. Agronomy staff members have projects at all eight regional centers. The PACs increase research area and allow experiments to investigate differences in topography, soil types, and microclimates within the state.

The renovation in LSPS and the addition of the Beck Agricultural Center have corrected some of the needs listed in the last CSREES review such as an increase in laboratory space, better facilities for seed storage and processing, and a classroom at the ACRE

Computer Facilities and Equipment

Agronomy computer hardware and software support for LILY, LSPS, WSLR, the ACRE and the Daniel Center is provided by two A/P staff FTE. There are two other A/P staff FTE for statistical consulting and special project-funded PC programming.

Hardware

Department computing needs are met with a variety of systems including approximately 325 desktop computers and 100 laptop computers. Agronomy has 762 registered IP addresses for these devices. Of that number, 150 are "Dynamic" registrations distributed by a central campus host for convenient access by portable devices wishing to connect in multiple locations. There are wired network connections in all rooms, as well as wireless network access available in most areas. Printing needs are met by locally connected and networked printers in offices and many labs, as well as department-maintained network laser jet printers on the second and third floors of LILY, and second floor LSPS. A large format inkjet printer is available in the Agronomy main office. There are five department servers that provide file storage and sharing via user accounts for all Agronomy staff and graduate students. A variety of campus Reduced Instruction Set Computers and supercomputers are available for the largest jobs.

Nearly all graduate students have a computer on their desk. There is also a department computer laboratory in LILY for graduate student and staff needs. This facility contains ten computers, as well as a flatbed scanner, slide scanner, and film recorder for making presentation slides. A networked printer is available in this room as well.

Computers are regularly used in undergraduate soil and crop courses. The Soils Study Center contains 28 computers and the Crops Study Center contains four computers. The Crops Study Center has also recently purchased a Smartboard and an ELMO document camera to aid with teaching. Undergraduate computing needs are also supported by Information Technology at Purdue (ITaP) Instructional Computing Labs in various locations on campus.

Software

Microsoft Office is used for word processing, presentation graphics and spreadsheet analysis. Desktop publishing software by Adobe and Microsoft is available on select machines and Optical Character Recognition software for converting scanned pages into text documents is available on most secretarial machines. SAS Version 9 is available in our Statistics Laboratory, as well as on many staff computers. Sigmaplot 11 scientific graphics software is available on many computers through a network license. Image analysis facilities for remotely sensed satellite data are available in a dedicated laboratory facility, on staff desktops, and on undergraduate teaching computers. All staff and students have access to Adobe Connect for video and teleconferencing needs.