

Pilot Study

Plant Care Facility Management of Research Growth Chambers

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Background of Plant Care Facility:

The College of Agriculture, Consumer, and Environmental Sciences (ACES) at the University of Illinois at Urbana-Champaign created the Plant Care Facility (PCF) under direction of the Ag Experiment Station in the mid-90s. This concept was developed to ensure facilities were maintained at high standards for production of excellent research and classroom plant materials located within the Plant Sciences Laboratory and Turner Hall Greenhouses. The Plant Care Facility Coordinator role was established to be the liaison between researcher and greenhouse staff and to allocate space resources to researchers based on their needs. Lastly, the Plant Care Advisory Committee (PCAC) was born to assist the coordinator and researcher by establishing common operational and administrative policies. This model has proven very successful and has been implemented at numerous universities for field, greenhouse, and/or growth room or chamber operations.

Examples of “Facilities”:

Since its inception, the PCF has remained somewhat synonymous with “greenhouse.” PCF “space” has been used to describe bench-top or floor area within a greenhouse room for housing various plant material.

In addition to greenhouse management, the PCF oversees several other service spaces including: storeroom and receiving, soil mixing laboratory, outdoor courtyards, in-house repair shop, pesticide storage and mixing, cooler/freezer storage, and seed repository facilities. These “facilities” are used to support or serve the needs of plant sciences researchers.

Current Management of Growth Chambers:

Growth chambers are operated and maintained by owners within a given department. Owners are primarily faculty or principal investigators but can include the department or unit itself. Similar to other types of specialized equipment, chambers require preventative maintenance to lessen chances of significant, more costly repairs. Funding maintenance can be burdensome for owners due to grant restrictions on repairs or upgrades to equipment. This creates an environment for reduced functionality through failing equipment. In time, failing equipment is abandoned, which takes up space resources where high-performing equipment could be located. This has been well

documented on campus and is still apparent in the Turner Hall Greenhouse basement and Plant Sciences Laboratory growth chamber room (1309 PSL). A centrally managed approach is preferred by granting agencies; thus, budget lines for these types of services are generally more accepted.

Pilot Study – Plant Care Facility Management of Research Growth Chambers:

This pilot study will examine the efficacy of the PCF unit overseeing management of specific chambers in the Edward R. Madigan Laboratory – Room 074. ACES/Department of Crop Sciences funded the purchase and installation of four Conviron growth chambers with participation by Associate Dean Neal Merchen (ACES/Office of Research). In addition to these chambers, Crop Sciences has furnished two existing Conviron growth chambers for this study. The logistics of this agreement are documented in a corresponding Memorandum of Understanding.

This project is proposed to commence on July 1st, 2017, and be reviewed after one year. If successful, the PCF would continue to expand upon managerial responsibilities of other chambers across ACES campus.

Scope of Work:

The PCAC will provide recommendations to the PCF Coordinator to ensure implementation of the pilot study is meaningful for future applications. Recommendations will be in the form of establishing methods for project priority and implementation of operational and administrative policy. This will follow a similar trajectory as their guidance for greenhouse operations. The PCF Coordinator will implement methods and policies.

The PCF Coordinator will serve as the project lead and will center efforts on facility/equipment maintenance versus rendering plant care services at this time. This will allow coordinator efforts to be focused on the critical components of this program. If this study continues past one year, plant care services will be considered.

Lastly, the methods and billing cycle for invoicing growth chamber researchers will be similar to greenhouse researchers. Bills will be emailed quarterly according to the SFY.

Enrollment in Program:

For researchers interested in renting growth chambers, please follow this link and complete the following web-form starting July 1st, 2017.

<https://pcf.aces.illinois.edu/content/pcf-project-request-form>

Critical components are timeline, crop(s), temp/supplemental lighting, and funding source. Under “Special Project Instructions,” please indicate your interest in growth chamber rental, your access to chambers not part of this study, a justification on required use of chamber vs. greenhouse, and

a statement citing if research conducted in chamber will meet listed goals of your funded project. These components will help the PCAC and PCF Coordinator establish project priority.

In addition to currently funded projects, we will be accepting pre-reservations for proposals you soon plan to submit. This will allow you to be placed in the project queue for a later date, with no commitment if your proposal is not accepted for funding. If you are pre-reserving space, please indicate when you submit your request.

You will be contacted within two weeks after submitting a “PCF Project Request Form” with further information and/or chamber assignment.

Once occupied, a strict timeline will be enforced to ensure other researchers have the ability to use chambers in a timely manner.

Chamber programming will be provided by PCF Staff in accordance with project requirements. Monitoring chamber functions will be the responsibility of the researcher although PCF Staff will be reviewing operational chamber status during the work week. All failed components must be reported to the PCF Coordinator for immediate treatment. Repairs will be billed to program and not researcher unless it is determined that carelessness led to failure.

Irrigation and fertilization will be the responsibility of the researcher. Fertilizer and other supplies can be purchased from the PCF Storeroom (1224 PSL). Soil services are available for this program and can be requested normally. Soil carts will not be positioned in ERML. Unfortunately, there is no preparatory space available to researchers, so one must fill pots in their labs or PCF Storeroom before filling chamber.

Pest control services will be provided as part of this program. Scouting, however, will not. Please email PCF Coordinator if pest control services are required and a prescribed treatment will be rendered within one week. In order to maintain clean facilities, no plant material will be allowed in chambers that has been in field or greenhouse unless deemed clean by PCF Staff.

Disposal of plant material will be the responsibility of the researcher. There will be plant/soil material trash cans in room for your convenience. If your research involves use of regulated organisms, autoclave bags are available in the PCF Storeroom. Please bag your material, leave next to chamber, and contact PCF Coordinator for pick-up. PCF will autoclave waste at no additional cost.

General clean-up once a project is finished will be the responsibility of the PCF. If your project requires the use of additional equipment, dismantling and removal will be the responsibility of the researcher.

Program Cost:

PCF Growth Chamber Space Services*: \$5.00/square foot growing area/month

The model that will be used to establish monthly service rates is based on an expense recovery system. In application, program expenses are to be reviewed annually along with sales of “services” to justify an adjustment to future service rates. Since there are no up-front expenses with this program, a fair market costing approach is being used to establish the initial rates listed above. Generated revenue will be used to maintain units and add necessary low cost planting supplies in room for researchers’ convenience. Expenses will be reviewed in year two of this program to determine if an adjustment to rates is necessary.

Please be advised that you will be charged if you are a no-show for your reservation. Please submit your request with accuracy so that you do not unnecessarily incur charges.

*Includes well maintained and operable growth chamber with pest control services. Other items like carbon dioxide gas/absorbent, etc. will be charged per item.

Review of Program:

“Pilot Study – Plant Care Facility Management of Research Growth Chambers” will be reviewed once complete in early SFY19. The PCF Coordinator will provide PCAC a detailed report on facilities use, equipment condition, financial health of program, and recommendations for continuing/discontinuing management of chambers. This information will be processed and discussed in a meeting that will lead to a mutual agreement on managerial responsibilities of this facility.