

Plant Growth Facilities: Greenhouse Policies and Procedures

Revised November 2021

This document establishes the policies and procedures for the use and care of the Plant Growth Facilities (PGF) at the Riverbend and S. Milledge complexes on the Athens campus. The goal of this policy is to enhance communication between greenhouse users and the PGF personnel by outlining the request process, requirements to begin projects in assigned spaces and other vital information necessary to effectively and responsibly use these CAES facilities.

The PGF unit is responsible for allocating, administering, and maintaining greenhouse spaces for faculty and student projects. The PGF personnel worked with our Faculty Advisory Committee (FAC) in developing these policies to provide congruity between our PGF unit and research/teaching goals. That FAC consists of faculty representatives from CAGT and the departments of Crop and Soil Sciences, Entomology, Horticulture, and Plant Pathology. All PGF users are encouraged to communicate with their departmental representative.

Faculty Members:

- Dr. Nicholas Basinger, Crop and Soil Sciences
- Dr. Zenglu Li, Center for Applied Genetic Technology
- Dr. Cecilia McGregor, Horticulture
- Dr. Melissa Mitchum, Plant Pathology
- Dr. Bill Snyder, Entomology

Ex Officio Members:

- Mr. J. Dorsey, Director of Facilities Planning and Real Property,
- Dr. Wayne Parrott, Center for Applied Genetic Technology
- Dr. Bob Stougaard, Assistant Dean for Research

A Statement on Project Risks:

General Liability:

While we do not expect any project to fail for any foreseeable and/or preventable reason, initiating agricultural research within artificial environments is to assume and accept all risks inherent to such research. PGF professionals* diligently work to mitigate all risk factors. As such, no individual professional nor the PGF unit can be held accountable for any material or financial damage that might arise should any risk scenario occur. For more guidance and verification of the above statement, please contact the professionals at [UGA - Insurance & Claims Management](#).

Appropriate Integrated Pest Management:

PGF Professionals maintain pesticide applicator licenses according to State of Georgia and Federal regulations, and approach risk associated with any plant pest or pathogen with various IPM, best-practice strategies. This includes, but is not limited to, up-to-date equipment, current products, frequently changed MoA active ingredients, applying as-labeled rates, application timing, beneficially parasitic organisms, solarization, compartment rotation**, sufficient fertility, etc.

* PGF Professionals create priorities and identify tasks in accordance with their [JOB DESCRIPTION](#). This document serves as the rubric and benchmark for their performance.

** PGF Professionals reserve the right to identify and select compartments which need cleared for IPM purposes which include pest and disease resistance management, disinfection, and sanitation. This may involve moving a project to another location, requiring projects with the same crop to rotate to another compartment briefly, or keeping an area free of plants for several weeks.

Space Request and Shared or Exclusive Uses:

The Request Timelines:

Prior to any space request or assignment, it is recommended that the user(s) visit the site in person to determine the suitability of any space for research projects or coursework and visit our site overview page (In Development).

- Research: Requests can be submitted via either an email or the Greenhouse Request Form below. For projects requiring less than 100 sq-ft in bench space, the form must be submitted 2 weeks prior to the project start date. For larger projects, the form must be submitted 1-month prior to the project start date.
- Teaching: Requests to hold courses in the S. Milledge headhouse should be sent to the PGF superintendent in writing (email) 2 months prior to the first day of classes. Greenhouse space requests for course projects and/or to assist with developing plant materials used for the course work must also be submitted 2 months in advance via either an email or the Greenhouse Request Form below.

Requests for Research Spaces:

Requests, including both space within any current compartment that a program resides and space(s) within any other compartment, are made via an email sent to the PGF Professional assigned to any specific space and the Superintendent to begin the conversation or by completing the Greenhouse Request Form. See Appendix A thru C to determine a greenhouse's primary PGF Professional. Essential information for the body of the email:

- Subject Line:
 - "PGF Research Space Request {Date}"

- Email Body:
 - The Greenhouse and its specific compartment(s) of interest [If known],
 - The relevant timeline [Required: Project Start Date and Projected Ending Date],
 - The estimated bench area in square feet needed for the project [Required],
 - (See Appendix E: Surface Area)
 - Crop-type and management considerations [Required],
 - Desired climate parameters [Required minimum and maximum temperature],
 - Other considerations [e.g., Extra PGF aid, crop or pesticide incompatibilities, supplemental lighting needs, soil mixing and sterilization, if the material is recombinant IP, project supplies assistance, etc.],
 - The intended point of contact for quarterly invoicing.
 - (See Appendix D: PGF greenhouse price schedule)
 - (See Appendix G: PGF invoice template)

Requests for Teaching Spaces:

Requests for teaching spaces within PGF greenhouses follow the same format as the research requests above with some modifications. All request emails need sent to the PGF Professional assigned to any specific space, if such space is known at the time of the request, with the PGF Superintendent and the PI's/Professor's associated Department Head copied. Alternatively, the request can be made with the Greenhouse Request Form.

- Subject Line:
 - "PGF Teaching & Demonstration Space Request {Date}"
- Email Body:
 - Class Title and Class Number,
 - The Greenhouse and its specific compartment(s) of interest [If known],
 - The intended classroom location and assigned schedule,
 - The relevant timeline [Required: Class Start Date, Expected Potting Date, Greenhouse Project Ending Date, and Class End Date],
 - Estimated bench area in square feet needed for the project [Required],
 - (See Appendix E: Surface Area)
 - Crop-type and management considerations [Required],
 - Desired climate parameters [Minimum and maximum temperature if known],
 - Plant material preparation assistance prior to course start date [If applicable],
 - Other considerations [e.g., Extra PGF aid, crop or pesticide incompatibilities, supplemental lighting needs, soil mixing and sterilization, if the material is recombinant IP, class supplies assistance, etc.].

Qualtrics: PGF Greenhouse Request Form:

The alternative option to composing the email as outlined above is to begin a greenhouse space request conversation with our Qualtrics-based form. To access the form, the user will be required to use UGA's SSO authentication. Following either the Research or Teaching selection, the user will encounter questions tailored to their selection. Some questions might not have an answer yet. That is ok, but please estimate an answer. We will use this information and subsequent conversations to begin planning for your greenhouse project.

[Qualtrics: CAES-PGF Greenhouse Request Form](#)

Long-Term Space Assignment:

Defined as any program requesting specific spaces for greater than 1 year. Although the intended holding duration will be indicated to PGF within the initial space request notification, each program with a long-term space assignment must submit a request for their assigned spaces each July to ensure the program's expectations listed in 'Requests for Spaces' are current and understood by both the program and PGF.

Other special considerations for long-term reservations follow.

- Long-term reservation consideration for any compartment is encouraged but not guaranteed.
- These projects receive an equitable share of PGF's attention in comparison to temporary projects and small sq-ft users.
- We understand that additional needs for storage are typical of this arrangement. We will do our best to accommodate, but extra storage space is not guaranteed.

Shared Use:

Defined as within the same compartment and/or on the same bench row. Due to past improvements or established uses, there are specific areas that are either unavailable for shared use or have special considerations for sharing. This information will be provided by the PGF personnel to the program following the request notification and before an assignment of space. Unless otherwise communicated by the project coordinator at the time of annual resubmission(s) or new request(s), all reservable compartments and benches are assumed shareable in most circumstances. The PGF is solely responsible for shared use sub-assignment, and current space users are not allowed to reassign their allotted space(s) to other users.

Exclusive Use for Biosafety Compliance:

Any project which is required by any federal or state agency's regulations to be contained in any PGF greenhouse compartment in isolation from other projects. This isolation can mean on its own bench row or within its own compartment. Given the current demand on PGF greenhouse spaces and supply of available greenhouse spaces, it is unlikely that the exclusive use of an entire compartment for low sq-ft (< 100 sq-ft) project will be granted. If such conditions must be met, the program should inquire about PGF growth chamber facilities.

Please review [A Practical Guide to Plant Containment](#) and [UGA's Institutional Biosafety Manual](#) before submitting such requests.

Audit compliance support and requested facility modifications can be attended to by PGF personnel but neither is guaranteed nor the definite fiscal responsibility of PGF and its Professionals. Early planning and early involvement with the PGF Professional and the Superintendent for such projects will improve our ability to meet these requests and for your request to be successful.

Legacy Space Assignments Prior to 2021:

With respect to greenhouse compartment assignments made prior to the formation of the PGF unit, our unit will take no action to alter such arrangements so long as those facilities have not been mistreated. This includes those programs who have historically used the same bench(es), compartment(s) or whole greenhouse. As new space becomes available and new space requests are made, the PGF unit will do our best to meet the needs of all research and teaching requests at that time and any expected requests with appropriate greenhouse space locations.

Greenhouse Use Fees:

Priorities for Fee Revenues:

A comprehensive itemization on PGF's application of user fees is available in sections "Responsibilities of the PGF Personnel to the Program", Appendix F and H, and broadly fall under these prioritized strategy areas:

1. Addressing immediate human health and safety risks,
2. Specific facility repairs, maintenance, and improvements,
3. Providing pest management and specific plant care,
4. Shared facility and equipment expansion.

Greenhouse Conditions and Facilities:

UGA-CAES greenhouse structures have a wide range in construction age. This has created differences across all component types available within the greenhouse bays / rooms / sections / compartments ('Compartments'). Regardless, all greenhouses:

- Provide benchtop or floor space for research projects,
 - Due to greenhouse age differences, the usable bench sq-ft over the entire PGF has range = 32 to 60 sq-ft / bench and a mode = 32 sq-ft / bench.
- Control the indoor temperature within a defined range using multi-stage air circulation, various cooling systems, HAF fans, and backup heaters,
- Protect research project plants and associated equipment from outdoor weather,
- Have multiple water and electrical utility access points available to users,

- Have restricted access to non-greenhouse space users.

All compartment features are regularly inspected and serviced by PGF personnel and are presented to each program in a safe and working order. Exceptions may apply, and, if so, the program will be notified by PGF personnel prior to use. Regardless, we will attempt to fully utilize available greenhouse spaces.

Fee Rates During Use:

Bench areas are reserved at either \$0.23 or \$0.28 / sq-ft / month depending on the assigned space. The usable square feet and specific fee rate for any greenhouse compartment can be found in Appendix D as well as an explanation of how we developed those figures and comments on shared use and exclusive use assessments.

Spaces reserved for teaching and instruction are not subject to user fees.

Research faculty are advised to include PGF user fees in grant proposals and during the budget planning process for continuing research activities.

Minimum Reservable Space:

The minimum area that any 1 program can reserve is 32 sq-ft. This area represents 1 standard 4' x 8' greenhouse bench. Square footage-based assessments will not be refined below this standard.

Dirty Processing Bench Space:

For many reasons, a program may want to hold space within a greenhouse compartment near to their project to facilitate immediate sample processing. While this is an acceptable use of greenhouse space, permission for subsequent processing space assignment is at the discretion of the PGF Professional. If granted, it is subject to the monthly fee rate for that compartment. These spaces are for processing and not the storage of lab equipment or consumables.

Support and processing spaces used for instructional purposes are not subject to user fees.

Neither PGF nor its employees are responsible for any item's care on these benches.

Fee Rates Assigned to Areas Held for Program Use:

Greenhouse compartment(s) or bench space(s) may be held for any individual program's use. Holding periods are defined as those timeframes where the environmental controls are shut down throughout any transition period between projects. User fee rates during any holding period are \$0.15 / sq-ft / month and are limited to 2 months in duration. Holding periods extending beyond 2 months must be individually addressed with the PGF Superintendent and Professional. Reserved spaces are forfeited if those spaces remain unused after the holding period has expired and if the specific program has not discussed an extension with the PGF Superintendent and Professional.

Long-term Space Assignments and Associated Fees:

In specific instances, programs make use of whole compartments and/or whole greenhouses for a variety of reasons. These large space arrangements will be assessed fees based on the amount of usable bench sq-ft that was designed for the given compartment(s) each month, rather than by measuring the exact bench sq-ft used. This is done to reduce administrative burdens related to tracking use, and to give the program flexibility with how to best utilize their assigned space without restricting PGF operations and movement within these compartments. Such “flexibility” arrangements then do not require a project-by-project request for space so long as greenhouse control, maintenance and daily care do not substantially change.

Scheduled and Emergency Maintenance:

If a user is displaced due to scheduled or emergency maintenance, repair or other hired professional services, the program will be assigned temporary bench space. During that time, the program will not accrue fees for their original space but will accrue fees assigned to the temporary holding compartment/benches.

If such relocation is necessary, the Program will have access to all PGF employees and equipment required to make the transition as fast and efficient as possible.

Invoicing and Payment:

A baseline schedule for invoice distribution has been established to manage PGF and a program’s budget expectations. At a minimum, the schedule indicates a period where the program can expect communication from the PGF Superintendent regarding fee accruals.

- July through September – After October 1st,
- October through December – After New Year Holiday,
- January through March – After April 1st,
- April through June – Prior to Fiscal Year end date.

Given the diversity of budgets from the many programs that use CAES-PGF, 2 payment modifications can be discussed with the Superintendent: pre-payment and deferred payment. In cases where it is reasonable for the program to submit pre-payment, the program may prepay portions of or for the entire upcoming fiscal year. In consideration of the delays caused by grant fund distributions, programs may indicate their intent to defer quarterly assessments. Please do not exceed 6 months passed the invoice date.

Fees will be paid to the chart string indicated in Appendix G. PGF will not record use by day, but by the week number that the program uses the space(s). For example, the fee is the same whether a program starts a project on Monday or on a Wednesday. Week numbers begin with the January 1 week, and 4 recorded weeks equal 1 month.

Responsibilities of the PGF Personnel to the Program:

PGF Standard Operations:

All tasks required to provide consistent growing conditions and a safe environment. Professionals will take every action possible, including text and email, to notify programs that use a particular space when actions are needed or performed. It is understood that the PGF may attend to emergency tasks when appropriate to ensure research integrity with or without prior written notification. Such tasks include:

- Regularly scouting for pests and pathogens in all compartments across all PGF complexes and initiating control strategies when warranted,
- Service and maintain compartments, their supplemental lights, their mechanical and control components, etc.,
- Requesting and managing outsourced service and repair projects when needed,
- Replacing consumables that are provided by PGF to support research projects,
 - (See Appendix F)

Greenhouse Preparations that can be Expected by the User(s):

Cleaning duties which PGF will address among our other duties during downtime and during projects include:

- Debris and objects leftover on the floors, wall truss beams and bench surfaces from previous projects are cleared from the bay where required,
- Debris hanging from trusses, purlins and struts that are left over from past projects are cleared to prevent natural light blockage where required,
- Floors swept, washed, and sterilized from routine use when identified,
- Floor drains are cleared and in working order,
- Trash cans and dumpsters are regularly emptied and when identified as full,
- The Soil Waste Pile is managed and cleared when full.

General maintenance includes:

- Benches ready and safe for use,
- Regularly treating/cleaning/repairing the evaporative cooling systems, circulation, and exhaust fans, HAF system and backup heating systems,
- Ensure water hoses and wands are functional, Light bulbs, fuses and many other consumables are replaced/repared when required
 - (See Appendix F),
- Doors and electronic locks are in working order,
- Other duties as identified.

On-Going Research Support includes:

- On-demand facility repair and maintenance, required or requested, with communication to the program users,
- Soil sterilization prior to potting if requested,
- Environmental controls setup and monitoring,
- Pest and pathogen scouting before and after pesticide application,
- Drip irrigation installation and programming assistance,
- Regular fertilizations following discussion between the professional and the program,
- Post-project soil media and plant material sterilization (See Appendix H),

Responsibilities of the Space Requester to the PGF:

The fundamental goal of the PGF unit is to always provide and maintain research facilities in working order and in a presentable condition. Facility users are required to help accomplish these goals with the guidance that follows.

Project Consumables Not Provided by PGF:

- Disposable and Reusable Nursery Containers / Flats / Pots / “Cone-tainers”,
- Vertical Plant Supports – Tomato Cages, Bamboo Stakes, Wire Ties, String/Coir, etc.
- Pot Stakes, Labels and Label Makers, Markers, etc.
- Hand Trowels, Shears, Scissors, Loppers, Knives,
- All lab equipment and their consumables,
- Soil and soilless media and amendments.

Watering:

On-going research watering is primarily the user’s responsibility. Users should not assume that weekday, weekend, and holiday watering activities are covered by any member of the PGF staff or student assistants. PGF Professionals and our student assistants can take on watering responsibilities following adequate discussion regarding a program’s needs and expectations.

Alternatives to in-person watering responsibilities include the installation and use of drip irrigation. The small fixed and large variable proportions of a drip irrigation purchase and installation lends to reliable, consistent and an inexpensive method of guaranteeing water applications. Please make drip irrigation requests to your PGF Professional to evaluate feasibility, cost estimation and for installation assistance information.

Soil Media and Potting Supply Storage:

There are defined palletized soil media and bulk ingredient storage locations at Riverbend and S. Milledge. While the program is financially responsible for the purchase of soil media ingredients, the PGF administers the eventual storage locations. As such, the purchase,

receiving and storage of any material related to soil medias, fertilizers and potting supplies are to be coordinated with the PGF Professionals.

Current efforts are underway within the PGF to create new and expand legacy storage locations for soil (bulk and palletized), fertilizers and other amendments, and pots/trays/"cone-tainers" etc. Once each effort is complete you will be notified centrally of any changes to policies and procedures.

Additional Project Tools and Supplies Storage:

In addition to the bench tops assigned to the user, there are limited areas within the greenhouse spaces which the user can hold immediately useful tools and supplies. Those spaces will be made clear by either the PGF Superintendent or PGF Professional and such locations are meant to keep aisles, utilities and component access points clear for the PGF Professionals' activities. Usage of any bench surface for supplies and tool storage is not allowed and will result in a user fee applied to those surfaces.

Project Cleanliness and Waste Disposal Throughout and at Project Conclusion:

During and/or after the user has occupied their assigned spaces, the user has a responsibility to report any maintenance issues that arose to their PGF Professional. Following the conclusion of the experiment, all supplies and tools which are to remain in the program's possession must be removed from the temporarily assigned storage areas assigned within 2 weeks. Any remaining plants or items will be regarded as waste, and the project lead will be surcharged \$500 for PGF personnel to dispose of those items.

Messes incurred by the program during use and spent project consumables that accumulate during setup or use of the greenhouse facility are to be cleaned and/or disposed of by the facility user(s). Dumpsters are available for the disposal of solid waste non-hazardous supplies. The locations of the dumpsters are noted in both Appendix A, B and C. Guidance for the disposal of various Hazardous Materials can be found [HERE](#) and in Appendix H. The bulk soil media and plant matter waste site for the Riverbend complex is denoted in Appendix A. S. Milledge and College Station complexes are to use either the provided non-Hazardous Waste dumpster(s) or may transport their soil and plant materials to the bulk waste site at Riverbend.

You are required to notify your space's PGF Professional that any project is completed. This email chain serves to halt the administration user fees and/or space assignments.

Unacceptable PGF Uses:

- Preliminary and modified setup, or on-demand changes to environmental controls is not a Program responsibility. *Ad hoc* parameter changes must be requested of the trained PGF Professional that oversees any specific compartment. This prevents programming errors and allows the PGF Professional the ability to provide a greenhouse compartment ready for research projects,

- No plants unrelated to any project's success (personal or associated with other UGA projects) are to be housed within any PGF,
- Field supplies and equipment are not to be stored within the assigned compartments or in any PGF support areas and facilities,
- Leaving or propping greenhouse exterior and interior compartment doors open is not acceptable and invites pests to enter the greenhouse,
- Parking in unmarked areas to avoid UGA – Parking Services,
- Parking personal or state vehicles between greenhouses. This can either block our access to exhaust fan housings, side vents and other utilities, and introduce accidental damage to these compartments/components.

Damages Incurred During Facility Use:

Material damage to PGF facilities and equipment caused by PGF users, unrelated to age or preceding physical condition, is to be corrected immediately and at the expense of the program. Materiality will be assessed based on the cost of associated repairs and whether the individual(s) acted within the scope of their work.

Purposefully defacing or destroying any PGF asset will be dealt with by nonnegotiable fines at the discretion of the PGF Superintendent.

Facility Access:

The relevant E-14 parking pass can be obtained from Parking Service's One Stop Shop located:

*30 Baxter St.
Athens GA, 30602*

State vehicle specific parking spaces at all complexes are available on a first come, first served basis. These spaces are not reservable nor are they assignable to any specific department or program. The overnight truck and trailer combination parking location at the Riverbend complex is as indicated in Appendix A.

Shipping & Receiving Specific to Research Projects at PGF:

For all items not administered by PGF and which are needed to perform research by the program within any PGF, all large packages and palletized freight are to be sent to Central Receiving. Historically, their service has added 1 to 2 days onto the vendor's estimated delivery of any item(s). Central Receiving has both the trained personnel and equipment to maneuver packages and pallets around our greenhouse facilities. Other intermediate suppliers have

damaged our facilities in the past. Please find contact information, address, and policies important to package routing and delivery from Central Receiving [HERE](#).

Appendix

Note on Appendix A-C:

These colored shape overlays indicate key features for PGF complexes and indicate the PGF Professional that oversees day-to-day operations for any specific facility or support structure.

Appendix A: Riverbend PGF

Red - Kevin Turner (kevin.turner@uga.edu) | **Green** – Dean Kemp (dkemp@uga.edu) |

Blue – Pam Lewis (plewis@uga.edu) | **Orange** – Shared Plant Growth Facilities Parking |

Teal – Temporary or Overnight Truck-Trailer Parking for CAES Programs |

“D” - Non-Hazardous Waste Disposal | **“*** - Project Soil Media and Sample Waste Pile



Appendix B: S. Milledge PGF

Blue – Pam Lewis (plewis@uga.edu) | **Gold** – Matthew Seader (seader@uga.edu) |

“D” - Non-Hazardous Waste Disposal | **Orange** – Plant Growth Facilities Parking



Appendix C: College Station Complex

Gold – Matthew Seader (seader@uga.edu) | **“D”** - Non-Hazardous Waste Disposal



Appendix D: PGF Greenhouse x Compartment Information Schedule

Former Name	PGF Building Name East to West	Compartment ID North to South	Usable sq-ft by Compartment	Assigned User Fee \$ / bench sq-ft / mo
Riverbend Complex				
Pathology 9	R1	A B C	594 726 726	\$0.23
Pathology 8	R2	A B C	594 726 726	\$0.23
CAGT	R3	A B C D	545 575 575 545	\$0.28
Crop & Soils 6	R4	A B C	624 640 576	\$0.23
Crop & Soils 5	R5	A B C	504 560 488	\$0.23
Crop & Soils 4	R6	A B C	384 480 384	\$0.23
Hort "GH 11"	R7	A B C	671 748 748	\$0.23
Hort "GH 12"	R8	A B C	680 680 990	\$0.23
Hort "GH 13"	R9	A	1052	\$0.28
Hort Club "GH 14"	R10	A	N/A	NA
Entomology	R11	A B C D E	TBD TBD TBD TBD TBD	\$0.28
Tomato Greenhouse	R12	A	1104	\$0.28
Cool-Season	R13	A B	108 72	\$0.28
S. Milledge Complex				
Hort GH 400/401	M1	A B	640 1344	\$0.28
Hort GH 300/301	M2	A B	1344 640	\$0.28
Hort GH 200/201	M3	A B	640 1344	\$0.28
Pathology GH A	M4	A B C D	490 490 490 490	\$0.28
Pathology GH B	M5	A B C D	410 410 410 410	\$0.28
"CCRC" GH C	M6	A B C	410 410 410	\$0.28

The schedule's compartment values have been derived from architectural designs found in the FMD (Facilities Management Division) AiM database, or, when absent, have been measured by PGF Professionals. If benches within a greenhouse compartment have been removed to facilitate any facility user's project, equipment or other needs, the user will be assessed based on the product of the assigned fee rate by the usable greenhouse bench surface space associated with those removed benches. Square footage values are valid as of 11/1/2021.

The respective fee rate for any shared spaces within greenhouse compartments is applied in full regardless of the number of users within that shared space.

Any requests for "exclusive" compartment use both as defined above and granted by the PGF Superintendent will be assessed for the entirety of the usable square footage within that compartment and not on the total bench area used.

Appendix E: Determining Bench Surface Area Needed

The required bench surface area is dependent on 2 main factors: Pot Size or intrinsic Plant Spacing Requirements. Simply asking for such area in a space request notification is acceptable since bench sizing varies widely at PGF. Our professionals can then help you determine the number of benches required.

$$\text{Square Area Required} = \text{Number of Pots} * \text{Plant Spacing}^1$$

¹ Measured in Feet x Feet.

Other considerations for space might include hydroponics, drip irrigation, submersion tables, Dositrans and so forth. Regardless, the metric above will allow us to assist your request.

Appendix F: Compartment Consumables Provided by PGF

- All general maintenance pesticide products and equipment,
- HPS and Metal Halide light bulbs,
- Garden hoses, watering heads and spigots,
- Drip irrigation distribution lines and ¼" drip tubing and other supplies,
- Polycarbonate, Fiberglass, Dynaglass, Glass, Stainless Steel exterior materials,
- Mechanical timeclocks and motors,
- Exhaust fan belts, motors, pulleys, and bearings,
- Evaporative cooling pads, sump pumps, sediment filters, valves, and algal treatments,
- Unit heater control boards, electrical motors, and fans,
- Ground cloth for French drain coverage and landscaping spikes,
- Electrical fuses, breakers, toggle switches, receptacles, covers and cover plates,
- Power relays, contactors, and capacitors,
- And others for consideration.

Appendix G: Example Quarterly Invoice for PGF Use

UGA CAES Plant Growth Facilities

107 Riverbend Rd
Athens, GA 30602

INVOICE

BILL TO

[PI]
[CAES Department]
[Address]
[City, State Zip]
[Email]

INVOICE #

[FY-#]

DATE

10/8/2021

DESCRIPTION	QTY	UNIT PRICE	AMOUNT
	1		-
			-
			-
			-
			-
			-
			-
			-
			-
			-
			-

Transfer funds to:

Fund: 41300; Program: 12200; Class: 41500; Department: 17520001; Operating Unit: RCS

SUBTOTAL	\$0.00
TOTAL	\$0.00

If you have any questions about this invoice, please contact
Tyler Thompson @ tyler.thompson1@uga.edu

Appendix H: Disposal of Regulated and Biosafety-restricted Plant Materials and Soil Medias

For projects that require a BioSafety Level 2 or greater, a Regulated Materials certification from APHIS or any other transgenic work or regulatory compliance that demands post-project sterilization of the used soil media and plant materials, Plant Growth Facilities provides weekly sterilization and disposal of such materials. Our method uses steam to heat the contents of our steam trailers to a minimum 250F; Image 1. After a trailer's contents have been cooled, the materials are then able to be disposed of in our general plant and soil media waste pile.

The steam trailers are located on the east side of the Riverbend Complex by the Bulk Soil Media materials lean-to. A trailer with its sides up, indicates that this trailer is receiving the next load of materials to be sterilized. Trailers with their sides down do not receive such materials; Image 2.

Our only sterilization site is located on Riverbend and cannot be moved to the other complexes. This fact does not preclude such bio-hazardous research from being performed at other

complexes. The transport protocols for such items can be found in the [UGA's Institutional Biosafety Manual](#). If you are concerned about executing the appropriate transport of bio-hazardous materials, please contact your PGF Professional for assistance (See Appendix A-C).



Image 1: Current PGF sterilization equipment ready for operation.



Image 2: Steam Trailers: Side up (Left - Accepting bio-hazardous soil and plant materials) and sides down (Right - Not accepting...).