

Colorado State University Plant Growth Facilities
FY 2022 Use Policy
Effective January 1, 2022

Introduction

The intent of this document is to establish policies, procedures and guidelines for use of the Plant Growth Facilities. The document is subject to annual review and approval by the Greenhouse Steering Committee and Business Financial Services prior to release.

Plant Growth Facility (PGF)

Website: <https://agsci.colostate.edu/plantgrowthfacilities/>

Main PGF Email: cas_greenhouse@mail.colostate.edu

Hours of Operation: 8:00-4:30 M-F

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Overview

The PGF is an Institutional Core Facility, which supports the strategic goals of the Colorado State University (CSU) research mission. The facility offers short and long-term greenhouse space, growth chambers, cold storage rooms, laboratories, and short-term warehouse storage to facilitate research for faculty, staff and students from colleges including the College of Agricultural Science, Warner College of Natural Resources and the College of Natural Sciences. In addition to providing research facilities, PGF supports several Horticulture, Biology and Natural Resource classes and clubs. PGF provides research and teaching facilities to approximately 45 research labs and over 300 users each semester.

The PGF main facility has approximately 42,000 ft² of space, including 7 research bays, 14 growth chambers, laboratories and a public Conservatory. Our south facility (aka 'south houses') contains over 18,000 ft² of biocontainment greenhouses, a growth chamber hotel, a laboratory and an autoclave area.

The PGF is open 8:00am-4:30pm M-F during the school year and 8:30-4:00 during the summer. The staff consists of Tammy Brenner, manager & building proctor (Tammy.Brenner@colostate.edu); Paul Freebury, greenhouse foreman (Paul.Freebury@colostate.edu); Brian Hadley, plant health specialist (Brian.Hadley@colostate.edu); and up to 3 part-time students. Staff is available during regular business hours; but may not always be in the office. If a user has questions, concerns or problems, they can reach out to staff via email or phone. The PGF staff does their best to respond to emails within one business day.

Acknowledgments

Acknowledgement of PGF contributions is encouraged in publications that include any data generated in the PGF. An example of an appropriate acknowledgement is *"The authors wish to thank the Plant Growth Facilities at Colorado State University for facility access, training and assistance with research"*.

Space Requests

All PGF spaces (*greenhouses, growth chambers, labs*) are available to CSU-affiliated researchers via the PGF website, sending an email to PGF staff to receive link or clicking [here](#).

Requests are on a first-come, first serve basis and users are encouraged to request space before the start of the semester. As space permits, greenhouses are available to student clubs and external users. Due to high demand, growth chambers are **not** available to external users.

Space allocation is determined by the greenhouse manager. Prospective users are encouraged to contact the greenhouse manager early on to discuss space needs and complete a space request form. *Verbal discussion or email requests are not considered official reservations.*

The greenhouse manager can assist in determining the correct amount of space needed for project. The minimum amount of bench space to request is 1/4th of a bench (about 53ft²). It is recommended to reserve more space than anticipated. Additional bench space is not a guarantee.

Growth chamber space requests are by individual chamber. Due to limited supply and high demand of growth chambers, "squatting" in chambers is not permitted. Users must be conducting active research in all PGF-owned chambers. If a chamber is found to be empty for 3 consecutive months, the reservation is subject to termination.

Rates and Fees

Facility usage rates and fees are necessary in order to cover our operating, repair and maintenance expenses. The review of usage rates occurs on an annual basis and rates are subject to approval from the Greenhouse Steering Committee (appendix x) and Business Financial Services. **Users can expect a rate increase of 3 - 5% annually to cover the cost of inflation and anticipated repairs.** Greenhouse usage is calculated and billed monthly through Quali. PGF accepts valid CSU accounts or personal checks for payment. Credit cards are not accepted.

Greenhouse rates are a flat rate across all greenhouse bays (main facility and biosecurity 'south houses') and charged by the 1/4th bench unit. Growth chamber rates are flat across all growth chambers, except for chamber #9 (large, walk-in chamber), and are charged per unit. Rates begin on the start date of reservation, regardless of occupancy.

Monthly Rates-FY22

Main and South Greenhouse Rate: \$30 per 1/4th bench

Growth Chamber Rate: \$200/month

EGC Walk-in Rate: \$400/month

Services and Supplies

As part of the user fee, PGF offers services and supplies to facilitate efficient and effective research.

Below are a few of the main services we offer. Please inquire with staff for special requests.

- Annually
 - Deep cleaning of greenhouses
 - Light bulb replacements in greenhouses, growth chambers & UV room
 - Preventative maintenance of autoclave, RO water, growth chambers
- Seasonally
 - Troubleshooting, repairs and maintenance of greenhouse & growth chamber
 - Ordering and stocking of materials and supplies
 - Environmental control adjustments in greenhouses
- Monthly
 - Filter cleaning/replacements
 - Billing & Reservations
 - Worker Protection Standard training, orientation and enforcement
- Weekly
 - General cleaning of greenhouse and warehouse areas including *sweeping, trash and compost and refilling of supplies*
 - Washing and UV sterilization of pots, containers and flats - *users are responsible for delivering dirty pots to dirty pot rack*
 - Refilling and cleaning of south house footbaths
 - Pest Management (monitoring, scouting and all pesticide applications) - *users are responsible for maintaining a clean research area*
 - Autoclaving of main PGF material

Warehouse Supplies

Items are for current, fee-paying PGF facility users. Non-fee paying labs are welcome to purchase supplies for a fee. Non-fee paying users must select "lab use" and provide valid account number when signing out supplies.

Supplies include:

- Promix potting mixes: Promix HP+ high porosity mix with biofungicide and mycorrhiza & Promix BX (basic potting mix with no additives)
- Soil amendments (*perlite, vermiculite, greensgrade*-located in white bins)
- 2", 3.5", 4" square pots, 1 & 2 gallon round pots, 1" & 2" containers
- Humidity Domes (*small & large*)
- 1801 flats and inserts (webbed, with holes and no holes)
- Slow-release fertilizer (Osmocote) & liquid fertilizer (*15-5-15*)
- White plant labels & bamboo stakes
- PPE including nitrile gloves, dust masks & disposable lab coats
- Assorted tools & specialized research equipment (watering cans, scales, tape measures, etc.)

- Dosatron fertigation (per request)
- Carts & wagons (*short term only, must be returned by the end of day*)

When done with supplies, all items must be returned to their appropriate location:

- Pots, flats and domes returned to pot washing area
- Potting mixed returned to their designated white bin (opened) or back to pallet (unopened).
- Bamboo stakes returned to bamboo bins
- Tools returned to designated area

Unless purchased directly by lab, all supplies must be returned to PGF and may not be stored in a researcher's individual assigned storage area.

Amenities

- Mist benches (112a and 104 greenhouses-contact PGF for available location)
- Warehouse Storage (for long-term researchers only)
- Specialized Equipment (see page 6 & 7 for details)

Fee-for-Service & Supplies

Outside of the base rate, PGF offers several fee-for-services include:

- **Plant care & watering services:** \$35/bench/week
- **Complex irrigation set-ups:** \$35/hour plus materials & supplies
- **Equipment modification:** \$35/hour plus materials & supplies
- **Special Orders:** Cost of material and any shipping/handling fees

Other requested services are based on hourly rate:

Student Hourly rate: \$16.50/hour

Professional hourly rate: \$35/hour

Facility Access

Once space has been assigned, all users must attend **Worker Protection Standard (registration available here: <http://www.ehs.colostate.edu/WTrainReg/ClassSignUp.aspx#X327>)** training and attend an **on-site orientation** before access is approved. Once completed, access will be activated within 24-hours. *Users are encouraged to complete training early, day-of training is not provided.*

Users are not permitted in the facility until required training is complete. Do not lend out your key card or allow access to anyone that does not already have access. If users forget their keycard they can come to the main office to check out a keycard for the day. Users found in the facility without proper clearance will be asked to leave and persons responsible for allowing access will be issued a warning. Repeated violations will result in temporary suspension of access.

Work Protection Standard Training

Under Worker Protection Standard (WPS), a federal regulation under the authority of Environmental Protection Agency (EPA), which is enforced by Colorado Department of Agriculture, pesticide safety training is required to protect agricultural workers and pesticide handlers in establishments where pesticides are used.

PGF offers monthly WPS training with an on-site orientation. The training schedule is posted on the PGF website, the dry erase board outside of the main office and announced via email. Users can also log

onto the EHS website and register for a time that works for your schedule
<http://www.ehs.colostate.edu/WTrainReg/ClassSignUp.aspx#X327>

Once registered for a WPS session, the EHS system will send you a registration notification, a reminder for the class and due date reminders when it's time for renewal. It is the responsibility of the user to schedule annual WPS training. If you are unable to attend a session, but need greenhouse access, please contact PGF to discuss options.

Training sessions are transferable to other CSU locations where WPS training is required. However, each location required a site-specific orientation in addition to the WPS training. **For example:** If you attend WPS training and site-specific orientation at ARDEC, you only need to attend a site-specific training at PGF, not the WPS training.

The required WPS notification center is located inside the north entrance to the greenhouse corridor. It contains information on application locations, pesticides applied, and re-entry information for the previous 30 days as required by federal law. Pesticide Safety Data Sheets (SDS) are available at the central notification site.

Integrated Pest Management

The PGF is a diverse and dynamic greenhouse facility with over 40 active research projects going on simultaneously. To ensure successful research for all users, it is essential that pest populations remain low. PGF employs Integrated Pest Management strategies to manage insect and disease populations including:

- **Sanitation-** a critical step in *prevention*
 - PGF will remove weeds from floor, sweep and disinfect benches between uses.
 - Labs are responsible for removing weeds from pots, discarding dead or diseased plant material weekly, transporting dirty pots to pot washing station and maintaining a clean benchtop
- **Identification, scout and monitor**
 - PGF will identify, scout and monitor pest populations weekly
 - Labs are encouraged to notify PGF of pest population concerns
- **Control-**combination of management approaches for greater effectiveness
 - PGF uses a combination of methods to manage the pests, including biological, cultural, mechanical, physical and chemical control.

By applying these IPM strategies, PGF can maintain low pest thresholds with limited use of pesticides. This requires all PGF users to play an active role in pest management by maintaining a clean bench space, removing dead/diseased plant material and notifying PGF of pest outbreaks. Additionally, unless research critical and *specifically* noted during space request, **all plant material is subject to pesticide applications.** All plant material must be inspected, by PGF staff, *before* moving into facility. Contact PGF to arrange inspections. Seeds are exempt from inspection.

Pesticide Applications

When a pesticide application is required, the scheduled applicator will notify PGF users approximately 24-hours in advance via email. The email will state the scheduled day/time and impacted area. The day of application, users in the building will be notified verbally of the pending application.

It is the user's responsibility read emails and to vacate the facility by the designated time. Repeated violations of notifications will result in loss of building access.

In accordance to EPA compliance, if a pesticide is applied to an enclosed space area and the product labeling requires a **REI greater than 4 hours**, workers will be notified of the application by posted **'DANGER KEEP OUT'** signs. If a pesticide is applied to an enclosed space area and the product labeling requires a **REI equal or less than 4 hours**, then workers will be notified of the application by either posted warning signs or an oral warning.

Per EPA regulations, only the applicator has the authority to remove the 'DANGER KEEP OUT' sign. ***It is a violation of regulations for the sign to be removed by someone other than the applicator. Users found in area with sign still posted will be issued a violation notification and repeated violations will result in access suspension.***

Only members of **PGF staff** are permitted to make any pesticide applications in the facility. Unauthorized pesticide applications can damage plant material, interact poorly with PGF treatments and against EPA regulations. Unauthorized pesticide containers will be confiscated, and PI will be notified immediately.

Specialized Equipment (see appendix 4 for map locations)

PGF offers specialized equipment to assist with your research. All equipment is available on a first-come, first-serve basis and areas must be kept clean and tidy.

Autoclave (room 128)

An autoclave is a piece of specialized equipment that uses steam under pressure to kill harmful bacteria, viruses, fungi and spores on items that are placed inside. PGF uses autoclaves to sterilize potting media, pots, and tools when required by permit or preferred by research.

DO NOT OPERATE the autoclave unless you have received training from the PGF staff. Labs whose permits require autoclaving of waste are responsible for autoclaving material. Labs who prefer (*but are not required*) to autoclave must use red biohazard bags and place bags into red biohazard bins for disposal by PGF staff. ***Please label material with your name, date, content.***

While using the autoclave:

- Fill bags only halfway, overfilled bags will rip
- Place filled bags in secondary container (red biohazard bin) to catch any spills
- Place indicator tape on each biohazard bag before autoclaving
- Log all autoclave cycles

Plant Imaging Room (room 111)

The plant imaging room is a lab that allows plant phenotyping to assess complex plant traits, such as growth development and environmental tolerance. This room is primarily occupied by the Agricultural Biology Department. For information on usage, please contact: John.Mckay@colostate.edu

Drying Oven (room N102)

The drying oven is in the PGF hall and is set to a ambient temperature. A sign-up sheet is available to reserve a shelf. All items must be labeled with name, date, contents. *Items left over 6 months with no activity will be discarded.*

UV Room (room 106)

The UV room is used to disinfect research material including pots, bamboo stakes and other items. Due to the nature of UV, all users are required to complete operational training prior to use. Please contact PGF to schedule a training session.

Cold Rooms (room 103b/c)

The cold rooms are located on the east wing of PGF and are for temporary storage only. The temperatures are set at 2.4°C and 4°C. All items must be labeled with name, date and content. *Items left over 6 months with no activity will be discarded.*

Plant and Soil Grinding Rooms (room 102a/b)

The plant and soil grinding rooms are located on the east wing of PGF. Interested users may sign the key out at the front office. Rooms can be dusty, and dust masks are encouraged. Please report any malfunction, damage or other to PGF staff.

Equipment Room (room 106/warehouse)

The equipment room, located in the warehouse, contains assorted power tools (table saw, chop saw, circular saw, etc.) and is available by permission to trained users only. All users must wear Personnel Protective Equipment (PPE) while operating equipment (safety goggles, ear protection). See PGF for details and training.

Root Washing Station (room 108A)

The root washing station is located in the main greenhouse corridor and designed to wash roots of various sizes. It contains 3 sinks with handheld faucets, assorted sieves and a sediment trap. PGF will ensure sediment trap is emptied regularly.

Safety

To protect our staff, all users and valuable research, the following policies are in place.

General Safety

- Closed-toes shoes are required, and no food or drink allowed while working in greenhouse
- Sharing of ID cards prohibited
- No relocating, watering or disruption of other research material
- Keycard codes or lock box codes are not to be distributed
- Application of experimental chemicals require *advanced approval* from management

Inclement Weather Emergency Procedure

In the event of inclement weather such as a snowstorm, the building proctor (Tammy Brenner) or sub will access the facility and assess for safety concerns. Researchers can request emergency watering services via email (cas_greenhouse@colostate.edu). If building proctor is unable to access building, CSU facilities dispatch (491-0077) will be contacted.

Biosafety & Biosecurity

PGF supports a wide variety of research, some of which include transgenic plants, select agents, plant pathogens, invasive material and Hemp. Use of such material is permitted pending proper permits from the appropriate regulatory agencies, approval from the biosafety officer and discussion with the PGF manager.

The Primary Investigator (PI) is responsible for adhering to all permit regulations, protocols and procedures *specific* to their permit, along with training of staff. PI is also responsible for ensuring all personnel are following all safety practices and containment procedures provided in the NIH Guidelines (<https://osp.od.nih.gov/biotechnology/nih-guidelines/>). Labs with permits must provide copy of permit to PGF manager.

PI's or lab managers will inform PGF management in advance (minimum of 1week) of any significant experiment that involves BSL2 or BSL3 organisms. This information will be shared with other users based on need and additional training and communication bulletins will be provided as necessary.

Hemp

PGF has a Research and Development permit with the Colorado Department of Agriculture (CDA) to conduct research with Industrial Hemp. Researchers interested in working with hemp should contact PGF manager early to discuss requirements. If approved, researchers are responsible for submitting all required CDA pre-planting, planting and harvest forms to the CDA, as well as submitting a copy to PGF within the timeline of CDA regulations. Contact PGF for information about this process or visit: <https://www.colorado.gov/pacific/agplants/industrial-hemp> for more information.

Communication

Communication is essential to keep PGF running efficiently. PGF does our best to communicate with all users and we expect clear communication from users in return.

A few important communication notes:

- PGF sends out occasional newsletter to share announcements, improvements, events, scheduled trainings, and schedules maintenance outages. If you have content you wish to share, please contact PGF.
- Notify PGF management, in advance of tours (large or small), extra lab sections or classes conservatory needs.
- If there are repair or maintenance issues, contact PGF immediately via email or cell. PGF will assess the situation and determine the best course of action. Unless there is an emergency, **do not contact facilities first.**

Greenhouse Protocols & User Responsibilities

PGF makes every effort to accommodate the needs of all users. Ultimately, the success of your research depends on the individual researcher. This section covers the responsibilities of PGF users including CSU Faculty, Research Associates, students and non-affiliated users.

PGF monitors the facility regularly to ensure all policies are being upheld. In the event of a policy violation, the following will occur:

- A warning will be issued to users (via email) is sent, with a deadline to correct the violation
- If violation is not remedied within timeframe or repeated, a cleaning fee will be assessed and user's PI or Department head (if violator is the PI) will be contacted and appropriate cleaning fee will be assessed.
- Cleaning fees examples:
 - Unauthorized equipment installation: **\$140**
 - Material and supplies stored under benches or uncontained on top of bench: **\$140**
 - Research/teaching material dead, diseased, weed infested or abandoned: **\$210**
- In the event the situation is not remedied within the given time period, the user will be asked to leave facility and will lose all access and privileges associated with PGF.

Equipment & Amenities

PGF does our best to maintain and repair critical equipment to prevent failure or malfunctions and loss of research. However, the aging infrastructure and limited resources prevents us from guaranteeing against equipment failure. Although PGF is not responsible for research time and materials lost due to equipment failure or malfunction, we will do everything we can to assist with research recovery and insurance claim information. If you notice a repair or maintenance need, please notify PGF immediately, so we can address the concern quickly.

Permission and consultation from PGF management is required prior to installation of any equipment that may interfere with greenhouse controls or functions. Examples include irrigation systems, shade cloth, lights of any sort, humidification systems, shade & black out curtains, tanks or insect cages. A **\$140 fee** will be added to your account if not resolved within timeframe provided in notification.

Potting benches, root washing station and pot washing stations are available for use on a first-come, first serve basis. Areas must be cleaned up after each use. Items left in areas are subject to immediate disposal.

Pot washing station is routinely used by PGF staff for washing pots. If you need to use this area for a long period of time, contact PGF to make arrangements.

Drying oven and cold rooms are available for use on a first come, first serve basis. All material must be clearly labeled with LAB, NAME, DATE and CONTENT. Unlabeled material is subject to immediate disposal. Items unlabeled or improperly labeled are subject to immediate disposal. Items left on shelving over 6 -months will be inspected, labs will be contacted to remove items. Any items remaining will be discarded. *Cold rooms are not for long-term storage.*

Automatic irrigation systems are designed to *assist* with watering. Daily inspection of plants and irrigation system is expected. Failure to inspect daily may result in failed research.

Housekeeping of Assigned space

A clean and organized facility aids in consistent research, prevents pest outbreaks and utilizes resources more efficiently. PGF requires all areas to be kept clean, organized and tidy. Brooms and dustpans are located throughout the facility. Brown compost bins and yellow trash bins are also found throughout the corridors for plant material and general trash, a potting station is in the warehouse and carts/wagons are available for use. At the end of use, please return items where you found them.

Discarding of Material

When discarding plant material or cleaning up a bench, the following protocols apply:

1. Plant material no longer using:
 - a. small amounts (< 10 pots): place in brown compost bin and close lid
 - b. large amounts (>10 pots): cart directly to outside compost bin
2. Plant material infested with pests (powdery mildew, aphids, etc.):
 - a. place in trash bag and empty directly to the outside compost bin. Do not cart uncontained pests through greenhouses.
3. Pots filled with greensgrade, sand or field soil:
 - a. Empty directly into outside compost bin - **DO NOT PLACE IN BROWN COMPOST BIN**
 - b. **\$140 fee** will be charged to your account if material is not properly discarded

Bench Space

PGF greenhouse and growth chamber space is for **research and teaching material only**. No personal or “pet” plants or seed starting of personal gardens are permitted in assigned areas. Only essential and vital equipment & supplies are permissible on greenhouse benches. These items must be stored in a small, plastic bin with lid (*supplied by lab*) and properly labeled with lab name.

Rules & Responsibilities

- All plant material (excluding seeds) must be inspected, by PGF staff, *before* moving into facility.
- All planting/ transplanting must be completed in corridor potting benches or in the potting area located in the warehouse. **Do not use greenhouse benches to transplant.**
- Temporary usage of mist bench is permitted, check with PGF staff to ensure availability and plant material must be labeled with LAB, NAME, DATE.
- When research permits, proper spacing (~6” apart) is required allow proper airflow, optimize growth space and reduce pest problems.
- Items stored under bench or outside of assigned area, including bags of soil, is not permitted. If found, users will be notified with deadline to remedy or a **\$140 cleaning fee** will be added to account.
- Weekly cleaning of plant material and bench is **required**, including: removal of dead, diseased plant material, oxalis, moss and other weeds, tidying of bench top, and proper disposal. Users will be notified with deadline to remedy or a **\$140 cleaning fee** will be added to account
- Teaching greenhouse plant material must be discarded by the end of each semester or subject to disposal and a **\$210 cleaning fee will be charged.**

Growth Chamber Space

Growth chamber space is for **active research and teaching only**. Due to limited supply, “squatting” of a growth chamber is not permitted. Reservations will be terminated if a growth chamber is found empty for 3 consecutive months. Only essential and vital equipment & supplies are permissible in growth chamber area. These items must be stored in a small, plastic bin with lid (*supplied by lab*) and properly labeled with lab name and stored on provided shelving.

Assigned Warehouse Storage

PGF has a limited amount of storage for current labs to store frequently used research material. The storage is limited to current PGF labs and cannot accommodate long term storage of “stuff”. PGF reserves the right to downsize lab storage if additional space is needed and/or the lab is not active in PGF. Labs with storage areas that are found un-tidy or have material overflowing will be contacted and provided a cleaning deadline. If not addressed within the deadline, PGF will clean the area and a **\$210 cleaning fee will be charged**.

Labs with storage units must:

- Have active research in PGF greenhouses or growth chambers
- Vacate storage area within 6 months of the last space usage - this is NOT long-term storage
- Stay within assigned storage unit – no materials in the aisle
- Maintain a clean, tidy and organized space
- Not store PGF purchased material (pots, flats, etc.) in storage area. These items must be returned to the pot washing area where they will be cleaned and put back into rotation

Vacating of space

When terminating a project, assigned area must be completely empty before checking out. This includes:

- Disposing of plant material in BROWN compost bin or to the outside compost bin
- All potting mix, greensgrade, sand or field soil should be discarded directly to outside compost bin – **NOT SMALL BROWN COMPOST BIN**
- Disposing of trash (*plant tags, twist ties, plastic bags, etc.*) in the YELLOW trash bin
- Moving pots, flats and bamboo stakes to pot washing area
- Removal of all lab-owned or lab-built material

Labs must notify (via email) PGF manager when area has been fully vacated. PGF will inspect space to ensure it's cleared of materials, equipment and plant material. Any remaining items will be subject to disposal and a cleaning fee of **\$35/hour** will be assessed.

Appendix 1: Directory

Website: <https://agsci.colostate.edu/plantgrowthfacilities/>

Main PGF Email: cas_greenhouse@mail.colostate.edu

Hours of Operation: 8:00-5 M-F

Personnel

Tammy Brenner-PGF Manager

Office locations: PGF/rm 115b

Phone: 491-7140

Cell: 970-986-9427

Email: Tammy.Brenner@colostate.edu

Paul Freebury- Greenhouse Foreman

Office location: PGF/rm 115a

Phone: 491-7340

Cell: 989-506-4761

Email: Paul.Freebury@colostate.edu

Brian Hadley-Pest Management Specialist

Office location: PGF/ rm 115

Phone: 491-7340

Phone: 719-482-5857

Email: Brian.Hadley@colostate.edu

Facilities Dispatch:

Phone: 491-0077

Email: fac_dispatch@mail.colostate.edu

<https://www.fm.colostate.edu/>

Growth Chamber Maintenance Contractor:

Landon Mechanical

Email: Landonmechanical@gmail.com

Cell: 970-214-7866

Website: <https://www.landonmechanicalnoco.com/>

Greenhouse Steering Committee:

Gene Kelly, Deputy Director/Agricultural Experiment Station (AES)

Email: Eugene.Kelly@colostate.edu

Troy Bauder, Assistant Deputy Director / AES

Email: Troy.Bauder@colostate.edu

Jan Leach, Research Associate Dean/ College of Agricultural Science (CAS)

Email: Jan.Leach@colostate.edu

Amy Charkowski, Department Head-Agricultural Biology/CAS

Email: Amy.Charkowski@colostate.edu

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Linda Nagel, Department Head, Forest and Rangeland Stewardship/WCNR

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Deborah Garrity, Department Head, Biology/College of Natural Sciences

Email: Deborah.Garrity@colostate.edu

Appendix 2: Teaching Greenhouse (112B)

The teaching greenhouse, bay 112B, is the designated bay for plant material used by teaching labs and clubs. However, the mist benches are available to all users. All rules and responsibilities apply to this bay and fees will be assessed if violations occur.

General Rules

- Once a study or lab section has ended, plant material, potting media and pots must be promptly disposed. *If material remains 2 weeks after semester has ended, PGF will remove plant material and charge a **\$210 cleaning fee**.*
- Hanging baskets are not permitted to hang on sides of bench
- Clean up corridor potting area after each lab session

Corridor Potting Area

The corridor potting area (not greenhouse) is designated for potting, transplanting and lab projects. This area is a multi-use area and users are expected to maintain this area in a neat and orderly fashion, this includes:

- Clean pots, trays and other lab materials stored in provided cabinet (not on benchtop)
- Potting media stored in provided bins
- Dirty pots and trays moved to pot washing station to be washed by PGF staff

PI/Faculty responsibilities

In addition to all rules and responsibilities stated in main policy, the following apply to teaching greenhouses:

- Email list of TA's and work study students to PGF manager
- Provide lab schedule to PGF
- Provide instruction to TA's and work study on *access requirements, WPS training and orientation*
- Train and enforce all PGF rules and responsibilities including:
 - Inspection of newly arrived plant material
 - Weekly cleaning and tidying up of space
 - Trash and compost removal - trash and compost bins located in the corridor
- Completing a space request for each semester - **reservations do not automatically roll over**
- Requesting permission to alter mist bench timers, lighting or other equipment-all requests must be via email. **Verbal requests are not accepted**
- Requesting permission to take cuttings, complete air layering or other Conservatory-related projects

TA responsibilities include:

- Notifying PGF (*via email*) of afterhours study groups, workshops and other special events
- Lab area cleaned up after each session
- Reminding students to keep all doors closed
- Reminding students that the conservatory is for enjoyment and plants are not to be taken.

Greenhouse and corridor will be cleaned at the end of each semester, items not stored in cabinet or designated areas will be discarded.

Appendix 3: Classroom (Rm. 113)

The teaching classroom, located east of the main office, was renovated in 2017 and hosts several Horticulture lab sections, summer workshops and monthly WPS training and Orientation sessions.

The classroom has a capacity of 36 students is maintained through the Plant Growth Facility. All Horticulture lab sections are scheduled through the Horticulture main office. For scheduling of Horticulture labs, contact Karen Allison: karen.allison@colostate.edu /491-8416

The classroom contains 4 large dry erase boards, 2 Creston projector screens and lecture capture capability via Echo 360. Echo360 provides the ability to record audio, computer screen content and (optional) video of the instructor and make it available to students online. Live Stream allows students to watch remotely and is enabled for all scheduled classroom recordings.

Information on Echo 360 can be found here:

<https://www.acns.colostate.edu/classroom-support-services/>

Classroom also contains lockable storage cabinets, a laminar flow hood, chemical fume hood and two sinks. Doors are unlocked M-F 7:30-5:30 and locked after hours. For keycard access or after hours access, see PGF manager.

Instructor/TA responsibilities:

- Events planned outside of normally scheduled class time (*exam preparation, review session, tours, clubs, etc.*) must be approved by PGF in advance- PGF utilized this classroom for other purposes. Do not assume the classroom is available.
- All storage of materials and supplies must be stored in assigned cabinets only. Material is not to be stored on counters or floors. *If you need more space discuss with PGF.*
- If classroom key is required, requests shall be completed through PGF main office. PGF will process request and key requester's responsibility to pick up key at key desk when ready.
- If main greenhouse access is required (*warehouse, growth chambers and research greenhouses*), Worker Protection Standard training (WPS) **and** on-site orientation is required.
- Lab sections must clean up after the end of each section
- Soil, plant material is NOT to be washed down sinks or placed in trash. A compost bin is provided for organic matter
- NO storage of chemicals, pesticides or hazardous waste.
- Lab sections are responsible for supplying staplers, dry erase markers and other office supplies.

Classroom will be cleaned at the end of each semester and items stored outside of cabinets will be discarded.

PGF office is available for minor trouble shooting or technical difficulties. If we are unavailable, immediately report any technical or AV problems to ACNS: Dial 0 from classroom phone or (970) 491-5920 | help@colostate.edu

Appendix 4: Biocontainment Greenhouses

The biocontainment greenhouses (south houses) are located south of the main PGF greenhouses. These greenhouses are designated for research projects that require additional containment measures. If project has special permits, pathogens or biocontainment needs, you must select “yes” on question #22 when making a space request.

Prior to space request approval, PI’s and/or lab managers must:

- Submit a copy all USDA/APHIS paperwork associated with research, including documented SOP’s
- Provide names of lab members authorized to work in designated greenhouse

All lab members must attend south house SOP orientation, including

- Autoclave training
- Sanitation protocols
- Security protocols

Autoclave

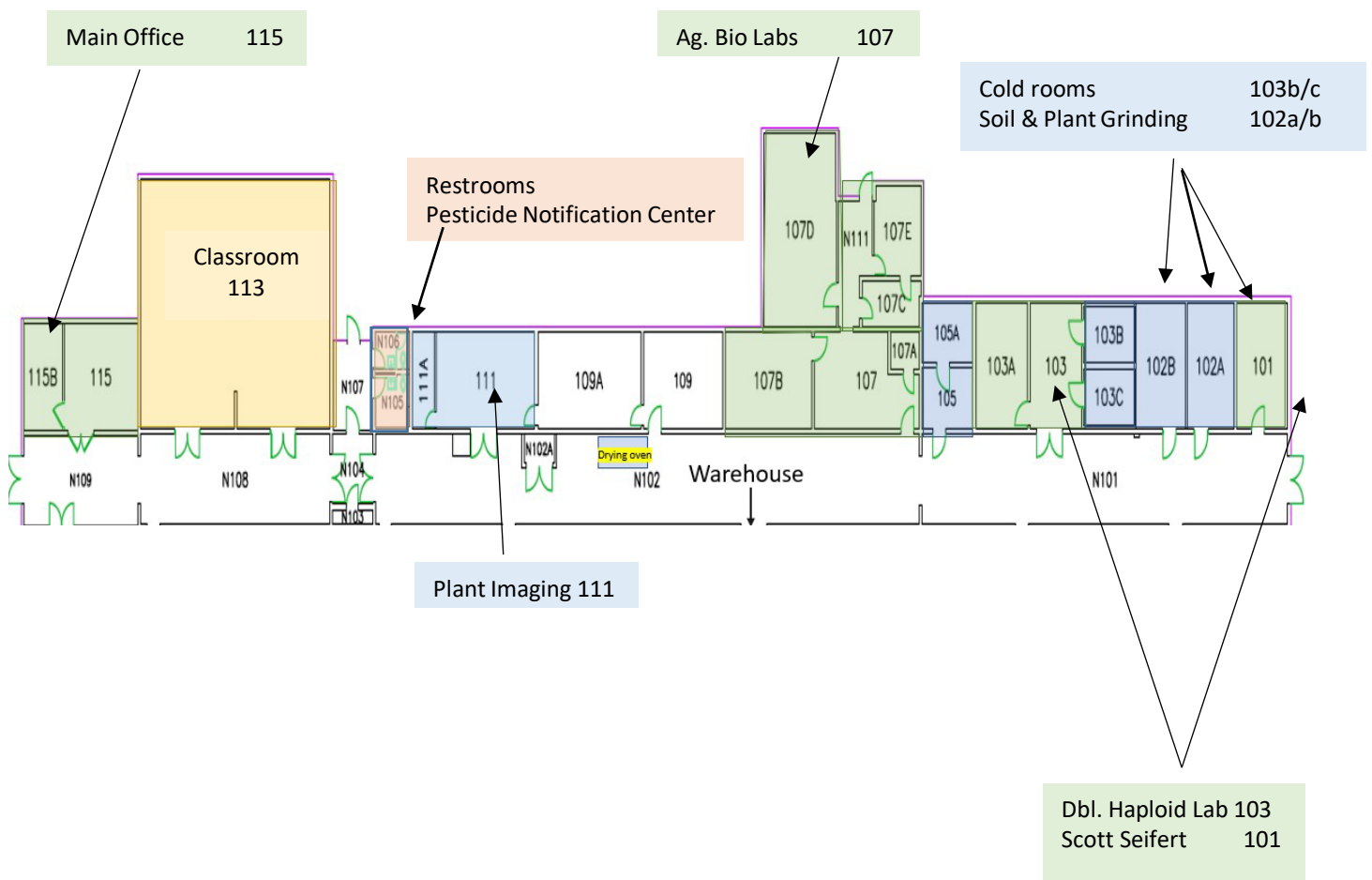
DO not operate autoclave until you have received instruction from PGF staff.

All material to be autoclaved must be placed in red biohazard bag and indicator tape added to bag. DO NOT overfill the bags.

Once filled, place bag in secondary RED biohazard bin to temporarily store material. Do not leave filled biohazard bags laying on floor-must be double contained. Once autoclaved, biohazard bags may be placed directly into outside trash bin.

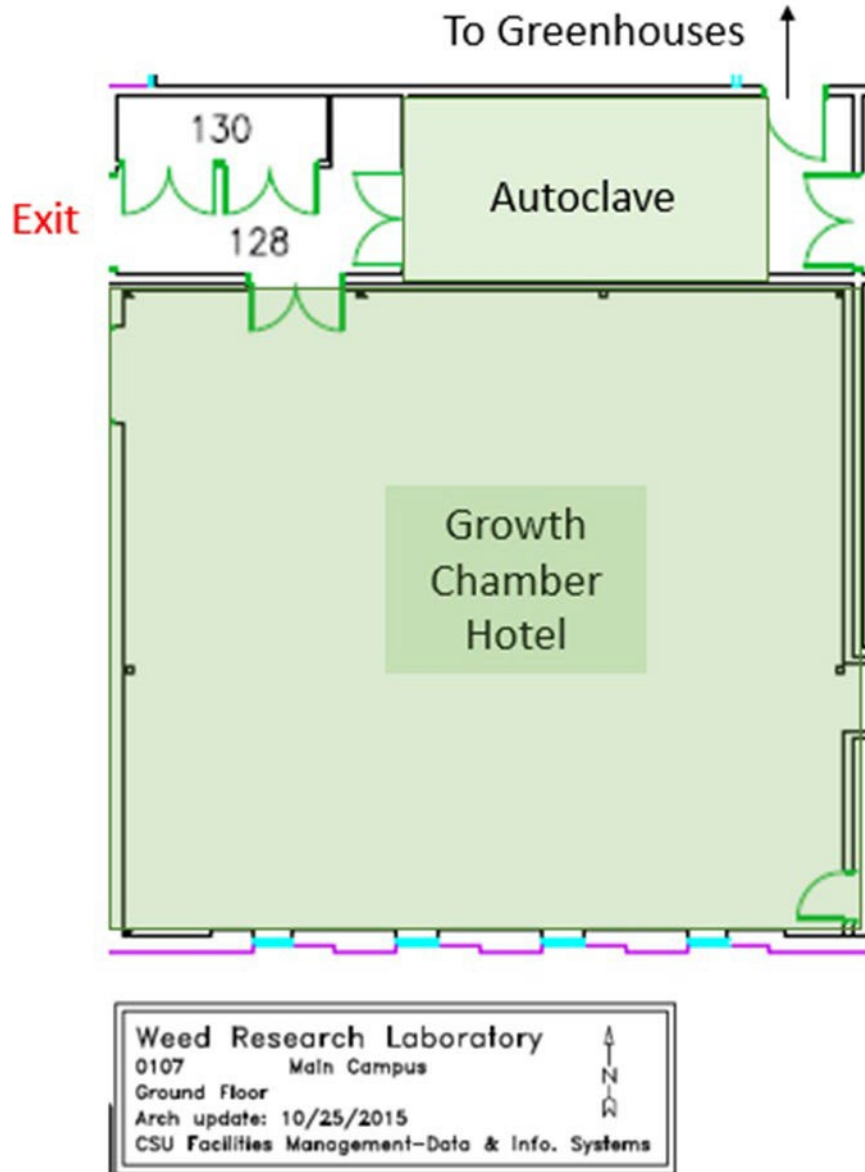
The biocontainment houses are subject to periodic inspections from both USDA/APHIS and the CSU Biosafety Office. Contact Tammy Brenner for more information or the Biosafety office: 491-0270

Map-Main Headhouse

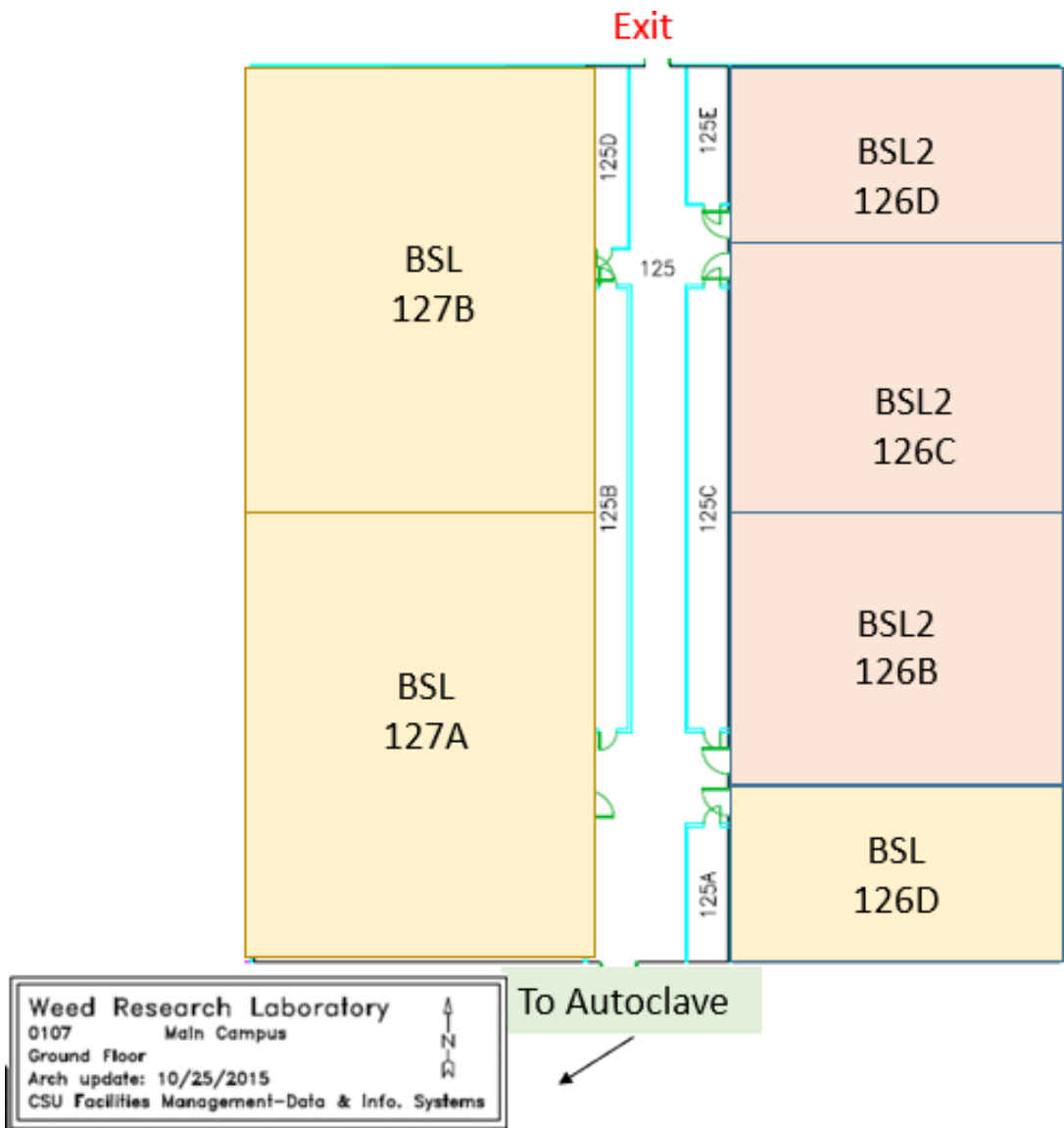


Plant Growth Facilities
 0108 Main Campus
 Ground Floor
 Arch update: 02/16/2018
 CSU Facilities Management—Data & Info. Systems

Map-South/Growth Chambers & Autoclave



Map-South Biocontainment bays



Appendix 6: Teaching Greenhouse Instructor/TA Agreement

I, _____ have read the PGF policy and agree to adhere to the rules and responsibilities as *summarized* below. I understand that if there is a violation to any of the below rules/responsibilities, lab is subject to fees and reservation may be terminated.

Instructors:

- Complete WPS training and on-site orientation
- Notify PGF of staff (TA's & work study) changes at the beginning of each semester
- Renew space request each semester
- Disposal of lab/class plant material within **2 weeks** after end of semester
- Provide lab schedule to PGF
- Provide instruction to TA's and work study on *access requirements, WPS training and orientation*
- Request permission to alter equipment-teaching greenhouse is used by multiple labs
- Request permission to take cuttings, complete air layering or other Conservatory-related projects

Instructors and TA responsibilities include:

- All plant material (excluding seeds) must be inspected by PGF staff before entering area
- Assigned bench must be kept clean of dead, diseased plant material, weeds, empty pots/flats and trash
- PGF will be notified (*via email*) of afterhours study groups, workshops and other special events
- All planting/transplanting must be completed in teaching corridors potting benches-*not in greenhouse*
- Storage of material & supplies must be in assigned warehouse storage, corridor cabinet, or on greenhouse bench in a small, plastic bin with lid (supplied by lab)
- Empty, used pots, flats, trays, etc. must be moved to pot washing station, *not stored in greenhouse or corridor*
- Removal all plant material, pots, bamboo stakes, etc. when project is complete and notify PGF (via email) when checking out
- Trash will be placed in YELLOW trash bin
- Plant material (<10 pots) can be discarded into brown compost cart
- Plant material (>10 pots) must be discarded directly to outside compost bin
- Greensgrade, sand or field soil must be emptied directly into **outside compost bin**
- Reminding students to keep all doors closed

Conservatory:

- Conservatory hours are 8-4:30. The last lab of the day must ensure all students are vacated
- Remind students that conservatory plants are not to be removed
- Seek advanced approval when using Conservatory plant material

I understand that if these rules and responsibilities are not upheld, PGF will issue a violation ticket and repeated offenses may result in termination of space.

Signature:

Date:

Appendix 7: Research Greenhouse/Growth Chamber User Agreement

I, _____ have read the PGF policy and agree to adhere to the rules and responsibilities as *summarized* below. I understand that if there is a violation to any of the below rules/responsibilities, lab is subject to fees and reservation may be terminated.

PI's/Lab Managers

- Complete WPS training and on-site orientation
- Provide instruction to staff on *access requirements, WPS training and rules*
- Notify PGF of staff (TA's & work study) changes at the beginning of each semester
- Notify PGF (*via email*) of afterhours study groups, workshops and other special events
- Warehouse storage shall be cleaned and organized *annually* and must stay within assigned storage area

PI's/All staff

- Complete annual WPS training and on-site orientation
- All plant material (excluding seeds) must be inspected by PGF staff before entering area
- Assigned bench must be kept clean of dead, diseased plant material, weeds, empty pots/flats and trash
- All planting/transplanting must be completed in corridors or warehouse potting benches
- Storage of material & supplies must be in assigned warehouse storage or on greenhouse bench in a small, plastic bin with lid (supplied by lab), not on greenhouse benches
- Empty, used pots, flats, trays, etc. must be moved to pot washing station, not stored in greenhouse or assigned storage areas (unless purchase directly from lab)
- Remove all plant material, pots, bamboo stakes, etc. when project is complete and notify PGF (via email) when checking out
- Trash will be placed in YELLOW trash bin
- Plant material (<10 pots) can be discarded into brown compost cart
- Plant material (>10 pots) must be discarded directly to outside compost bin
- Greensgrade, sand or field soil must be emptied directly into **outside compost bin**
- Reminding students to keep all doors closed

I understand that if these rules and responsibilities are not upheld, PGF will issue a violation ticket and repeated offenses may result in termination of space.

Signature:

Date: