



**Pratt**  
Fine Arts Center

**STUDIO USER GUIDE**  
**FOR**  
**HOT SHOP**  
**AND**  
**COLD SHOP**

Updated January 2017

# CONTENTS

## **Introduction**

- History
- Mission
- Vision
- Commitment to Racial Equity

## **General Information**

- Conditions for Access
- Waiver Agreement
- Acknowledgement Form
- Code of Conduct
- Access Card
- Emergency Contacts
- Using Other Departments

## **Studio Policies and Procedures**

- Availability
- Scheduling
- Payment/Check-In
- Assistants
- Hot Glass Equipment Guide
- Glass Shop Etiquette
- Clean Up
- Hot Shop Safety
- Cold Shop Equipment Guide
- Staff Roles and Responsibilities
- Maintenance Request Form

## **Resource Guide**

- Supply & Equipment Vendors

**Appendix A:** Waiver Form

**Appendix B:** Code of Conduct

**Appendix C:** Acknowledgement Form

# INTRODUCTION

## **History**

Pratt Fine Arts Center serves as a lasting tribute to Edwin T. Pratt, a man who relentlessly championed open and equal access to educational and housing opportunities for all of Seattle's citizens. Pratt Fine Arts Center honors his memory by continuing to pursue its mission of making art education accessible to everyone, for people of all ages, all skill levels, and all backgrounds.

Pratt Fine Arts Center began as a modest facility with a big vision to build a community of artists and an educational center providing the tools and the training to support the creation of visual art. Today Pratt stands exactly as its founders envisioned: as The Place to Make Art.

## **Mission**

Pratt Fine Arts Center makes art accessible to everyone, offering a place for spirited exchange, self-expression and personal transformation through creativity. Pratt is dedicated to fostering artistic development and engagement locally, nationally and internationally. A unique multidisciplinary visual arts resource, Pratt provides education and instruction, community programs and professionally equipped art making facilities.

## **Vision**

Pratt aspires to extend the visual arts experience to people from all backgrounds, working at all skill levels. Within an extraordinary community of artists, students and patrons, Pratt strives to be a conduit for artistic development, providing pathways to knowledge, support and inspiration and changing the way individuals see themselves and the world around them. Pratt will:

- Be the leading center for hands-on creativity in our region, well-known and celebrated for accessibility, inclusiveness, and excellence in programming
- Be widely recognized as a premier destination for artists to make new work, develop new skills, and become more well-rounded artists
- Foster a synergetic, creative community of people within a unique and dynamic urban campus environment
- Employ a sustainable business model worthy of academic study and serving as a model of idealism for arts organizations nationwide

## **Commitment to Racial Equity**

Pratt Fine Arts Center is committed to racial equity as a core value and ongoing practice. We at Pratt recognize that institutional racism, through conscious and unconscious practices, creates vast disparities in access to publicly funded services, including arts education and support for artists. We commit to allocating resources to the breakdown of systemic barriers and the development of equitable solutions organization-wide.

# GENERAL INFORMATION

## Conditions for Access

To become a Studio Artist and access Pratt studios independently, users must meet the following criteria:

- Successful completion of a Studio Access Test
- Current membership at Journeyman level or higher
- Signed Waiver Agreement form on file
- Signed Acknowledgement Form confirming understanding of all policies and procedures herein

## Waiver Agreement

Before any student, independent user, or user's assistant is permitted to use the facilities, he or she must first sign a liability waiver provided herein as Appendix A. Studio Artists will be required to turn in signed Waiver Agreements along with signed Acknowledgement Forms (see below) prior to their first studios access. Studio Artists are also responsible for seeing that any permitted assistants sign waivers before beginning work. Once signed, the Waiver Agreements will be permanently on file in the main office.

## Acknowledgement Form

Studio Artists are required to read and acknowledge their understanding of all of the policies and procedures outlined in this document. A signed Acknowledgement Form, included here as Appendix B, must be submitted to the front desk, along with a signed Waiver Agreement, prior to beginning access of the studios.

## Code of Conduct

All students, studio users, instructors and staff are expected to conduct themselves in a courteous and professional manner at all times by observing and complying with the following:

- Treat each person with respect
- Value the learning experience
- Keep agreements made with Pratt and others
- Enter fully into the experience of working together

The following actions and activities are not permitted on the Pratt premises:

- Abusive or callous behavior
- Damage to Pratt's property
- Dishonesty
- Non-compliance with safety or security rules and procedures

- Intimidation or disruptive conduct
- Possession, distribution, sale, consumption or being under the influence of alcohol or drugs while working at Pratt
- Possession of weapons
- Discrimination or harassment based on race, color, sex, marital status, sexual orientation, political ideology, age, creed, religion, ancestry, national origin or presence of sensory, mental or physical disability.

Failure to meet these expectations or other misconduct will result in disciplinary action up to and including termination of facility use or loss of membership.

### **Access Cards**

- Studio Artists are granted Access Cards after all of the conditions of access (see above) have been met. Access Cards must be presented at check-in every time and posted in the studio while the Studio Artist is at work.
- As long as a Journeyman or Master Level Pratt Membership remain current and Studio Artists regularly access the studio, the access card will not expire. The access card will expire if 24 months have passed since the last access in a studio; in this instance, Studio Artists will need to complete the Studio Access Test again.

Pratt reserves the right to revoke Access Cards at any time. Grounds for revoking access include but are not limited to:

- Violating Pratt's Code of Conduct
- Abuse of the equipment
- Activities that put other renters in danger
- Failure to pay rental fees or membership fees
- Repeated failure to check in at the front desk
- Violation of policies outlined in this handbook or individual studio handbooks

If an Access Card is revoked, its holder will need to arrange with the Studio Manager to be reinstated according to mutually agreed upon terms. In some circumstances, reinstatement will not be an option.

### **Emergency Contacts**

In the case of injury, disaster, or any other occurrence that presents a threat to the well-being of Pratt's inhabitants, call 9-1-1 immediately.

For all other urgent matters, visit the Front Desk or call 206.328.2200. The receptionist will relay your issue to the most appropriate staff person.

### **Using Other Departments**

Access is authorized on a studio by studio basis. In order to use multiple studios at Pratt, Studios Artists must pass the Access Test and meet the requirements of each studio. Unauthorized access of a studio may result in the revocation of privileges.

# STUDIO POLICIES AND PROCEDURES

## \*Availability

The Pratt web site, [www.pratt.org](http://www.pratt.org), has current scheduling information in the "hot shop calendar" section under the "glass studios" web page. You can link to the blow slot scheduling e-mail and website (preferred) from the calendar on the web or call the Front Desk and find out about access and availability of a slot any time before the slot begins.

## \*Scheduling Hot Shop Blow Slots

In order to access a four-hour blow slot, you must schedule the slot with the Front Desk. The following are guidelines for accessing a slot:

The Pratt web site, [www.pratt.org](http://www.pratt.org), has current scheduling information in the "hot shop calendar" section under the "glass studios" web page. You can link to the blow slot scheduling e-mail and website (preferred) from the calendar on the web or call the Front Desk and find out about access and availability of a slot any time before the slot begins.

**Blow Slot Cancellations** : Any slot that has been scheduled in advance, and is cancelled at least 48 hours before it begins, will be made available for other users. The previously scheduled accessed studio user will not have to pay the access fee. People who cancel their slot fewer than 24 hours prior to the beginning of the slot will be charged a \$35 cancellation fee. If you do not cancel your slot at least one hour before it starts, you'll be charged for the entire cost of the blow slot. This fee must be paid in full before you can access again. Similar rules apply to casting slots, which require a 72- hour cancellation.

## \*Payment/Check-In

You must check in at the Front Desk and pay the same day that you use the studio and at the beginning of your time at Pratt. For the Sandblaster and Cold shop, you pay when you are done. There is a blow slot punch card that discounts the 5<sup>th</sup> blow slot accessed. The user is responsible for this card and it must be checked off by the front desk for each slot accessed. Without the card present and fully used the user is ineligible for the discount.

For pricing, please see **Glass Studio Access Payment and Fees Addendum** (next page).

Pratt accepts payment by check, credit card, cash, Pratt Points, and scholarship.

*Scholarship*: Scholarship recipients will need to become accessed and present their scholarship code before using the studio.

## Glass Studio Access Payment and Fees Addendum

Item		
Hot Glass*# (4 hour blow slots)	All GHs \$165/4hrs	\$650 full shop with any 2 GHs (8hrs)
Hot Glass Casting	\$550/4hrs with 3 day anneal	Limited access
Hot Casting Annealer	Per calendar day	\$40
Hot Shop Extra Annealers	Per calendar day	\$40 (#4) \$30 (#5)
Flameworking**	Per calendar day	\$20 daily
Fusing Studio	Per calendar day	\$25
Fusing Studio Kilns & Annealers***	Per calendar day	\$25 (#1 and 5) \$20 (#2,3,4,6)
Oval Kiln	Per calendar day	\$30
Mold Room	Per calendar day	\$25
Coldworking	\$20 per 1 hour (\$10 minimum)	
Sandblaster	\$30 per 1 hour (\$15 minimum)	

\* Hot Shop Access Card awards a \$50 discount to the 5<sup>th</sup> blow slot purchased.

# \$40/hr. to extend blow slot (if time/space available).

\*\*Flame Shop Access Card awards 1 free session after 5 sessions purchased.

\*\*\*Kiln Access Card awards 1 day free Kiln Access after 5 days purchased.

*No replacement provided for lost, stolen, or damaged Access Cards.*

### Fees Chart

Late Payment Fee	\$30
Late Check Out Fee	\$30 Cold Shop \$50 Sandblaster
Clean Up Fee	\$50
Blow Slot Cancellation Fee*	\$35
Replacement ID Card Fee	\$10

\*If you cancel fewer than 24 hours before scheduled blow slot, you'll be charged a \$35 cancellation fee. If you do not cancel your blow slot at least one hour before it starts, you'll be charged for the entire cost of the blow slot.

# Hot Glass Equipment Guide

## \*Annealers

- Pratt's hot glass shop has six annealing ovens. The stacked top and bottom and double front-loading annealers at the south end of the shop are for use by people accessing blow slots. The other two annealers can be reserved by users who need a special annealing cycle, more annealer space, or as a pickup oven. The following is a guide to using any one of the annealers except for the casting annealer.
- *Designated Annealers:* Morning – Bottom #1, front loader, Afternoon - #2, left front loader, Evening - #3, right front loader.
- *Loading:* Load the annealer by using insulated Kevlar gloves to place the piece inside. Be careful not to lean work against other work or against the electrical elements of the annealer. Caution should be taken when breaking work off, directly into the annealer to avoid electrical shock and/or damaging others' work. Proper loading is back to front, left to right.
- *Unloading the Annealer:* Be sure that you don't open an annealer **before the temperature is at or below 200°**. Opening a hot annealer will destroy the work inside. **Annealer #3 must be unlatched before #2 is turned on. If #3 is not cracked open first it will heat up past a safe unloading temperature.** If you unload paperweights or pieces thicker than 1/2", they should be wrapped in newspaper before they go onto the shelf. Pieces too hot to touch and handle comfortably also need to be wrapped in newspaper. After all glass pieces have been removed, remove all bricks and kiln furniture and place them in the designated storage location.
- Fiber Products (i.e. fiber frax) By permission only.



## \*GB5 CONTROLLERS FOR HOT SHOP ANNEALERS

### 1. UNIT

- This number tells you which of the five ovens has been selected. There is a list on the wall in the hot shop, as well as in this manual, which tells you which ovens are controlled by which controller, orange or white, and their corresponding unit numbers
- Select the oven you wish by pressing the “**A**” key, then the **unit (oven) number**.
- To start a program you must select the proper oven number first. Otherwise, the controller will ignore your keystrokes. This prevents you from accidentally starting an oven you didn't want to start.
- The ovens corresponding to the unit numbers on both the orange and the white controllers are on a list on this wall.

### 2. TEMPERATURE

- This number tells you the current temperature (Fahrenheit) in the oven.

### 3. HOURS & MINUTES

- This number tells you how much time remains during each step. (For example, if the program calls for the oven to take 3 hours to reach a temperature of 1000 degrees, this number will start out at 2 hours and 59 minutes and count down to 0, then begin the next step.)
- If you see “**HHH HH**” in the display, this means that the computer is on “manual hold”, and will not start the next step until you tell it to.
- If you see “- - - -” in the display, this means that no program is currently selected. These dashes will disappear when a program is selected.

### 4. INDICATOR LIGHTS

- These lights tell you the run status of the program running on the oven you selected. Because each controller manages up to five ovens, these lights will change, depending on which oven you have selected, and which step the program has reached. More than one of these lights may be on at the same time.

#### IDLE

- This red light is on when no program is active for the oven you selected.

#### RUN

- This green light is on when a program is running for the oven you selected.

#### HOLD

- This yellow light is on when the controller is on a **manual hold** for the oven you selected, waiting for you to tell it to continue.

#### AUTOMATIC PROGRAM HOLD

- This yellow light will come on if the controller determines that the oven you selected is not making the calculated temperature (either hotter or cooler) in the right amount of time. The controller will put the program on hold at that time, and start the program again when the oven has reached the appropriate temperature.

#### 5. MONITOR MODE

- This green light tells you that the controller is able to run a program. **You must be in Monitor Mode to start a program.**

#### 6. PROGRAM MODE

- This red light tells you that the controller is able to **enter** a program, not **run** one. The numbers and letters on the keypad do different things in program mode than in monitor mode, **so be sure you are in monitor mode before you attempt to run a program.**

#### 7. STEP

- This number will tell you which step in the program is currently running. (In program mode, it will tell you which step you are entering in the program.)

#### 8. KEYPAD

The letters and numbers on the keypad tell the controller what you want it to do, and how much of it you want. They have quite different functions depending upon whether the controller is in monitor or program mode. Here, we will only be discussing **monitor mode**, the mode that allows you to run programs. Entering programs will be done by us, so if you have a special program or concern, please contact us.

#### LETTERS

- A** This letter, plus the oven number, selects a given oven. Press "**A**", then the number of the unit you wish to select. **Always press "A" + the unit (oven) number before you attempt to do anything with the controller.** This will automatically put you in monitor mode, and prevent you from selecting the wrong oven, or from changing a program.
- B** This letter shifts between **monitor** and **program** modes. You should only use this letter in the unlikely event that you need to enter or change a program. The programs for these ovens will be entered by your friendly management. *Please consult us if you have special programs you want to run.*
- C** This letter will clear any error messages in monitor mode. If you see such a message (such as "bad 1") please let us know right away **before** clearing the message by pressing "**C**".
- D** This letter introduces a **manual hold** (meaning one that will stop the program until you tell the controller to continue). When a program is running, pressing "**D**" will stop the program at that

point, and hold the current parameters until you release the hold.

- E** This letter, plus the oven number, will begin a program. **Always press “A” plus the unit number before using this command.** This letter, plus the unit number, may also be used to release a hold (see above) and to skip steps in the program.
- F** This letter, plus the oven number, **cancel a running program**, and returns the controller to idle for that oven (it will not affect the running of the other ovens on the controller). This is different from stopping a program at a given point—that is, a hold (see above). In monitor (running) mode, canceling the program will not affect its place in the controller’s memory. You could start the program again immediately if you wish. **However, if you are in program mode, pressing this key, plus the unit number, will erase the entire program; so, be sure you are in monitor mode (press the “A” key plus the unit number) if you want to cancel a program and return to idle.**

#### **NUMBERS**

- 1-5** These numbers represent the five ovens being managed by each controller. The ovens are clearly labeled by color (corresponding to the orange and white controllers) and by numbers, and a list is posted on the wall, so that you can be sure to select the proper oven.
- 6-9** These numbers (as well as the first five) are used to enter values in program mode.

#### **GENERAL PROCEDURE FOR RUNNING ANNEALING OVENS**

1. Press **“A”**, then the **unit (oven) number** (see the list on the wall, or the color and number on the oven). This will select the proper oven.
2. Press **“E”**, then the **unit (oven) number**. This will start the program. The program will hold the oven at the proper temperature. You will see **“HHH HH”** in the hours and minutes windows.
3. When you are ready to send the oven down at the end of a blow slot, press **“A”** then the **unit (oven) number** to be sure you have the correct oven, then **“E”** followed by the **unit (oven) number** to continue the program, which will then follow an annealing cycle.

**IN SUMMARY:**

UP

1. "A", UNIT (OVEN) NUMBER
2. "E", UNIT (OVEN) NUMBER

DOWN

1. "A", UNIT (OVEN) NUMBER
2. "E", UNIT (OVEN) NUMBER

Step #1 is Heat Up and Hold  
Step #2 starts annealing cycle

**For #1 Upper and #1 Lower  
Watlow Controllers**

\*EZ 1 = UP

(EZ 1 sends annealer up to hold at 915)

\*EZ 2 = DOWN

(EZ 2 sends annealer on normal 12 hour annealing cycle)

## DIRECTORY OF OVENS

- |          |       |                                     |
|----------|-------|-------------------------------------|
| <b>1</b> |       | Casting Oven                        |
| <b>2</b> |       | Color Box                           |
| <b>3</b> |       | Pick-up Oven                        |
| <b>4</b> |       | To Be Announced                     |
| <b>5</b> |       | To Be Announced                     |
| <b>1</b> | UPPER | Overflow, long cycle, rental        |
| <b>1</b> | LOWER | Morning Annealer                    |
| <b>2</b> |       | Afternoon Annealer                  |
| <b>3</b> |       | Evening Annealer                    |
| <b>4</b> |       | Large Oven Front Loader (Extra Fee) |
| <b>5</b> |       | Small Oven Top Loader (Extra Fee)   |

## **\*Furnace**

The glass furnace should require little or no attention from the average user. The main item to be aware of is the furnace door. Never slam the door on the furnace. If you feel that the door is in trouble, please record the appropriate information on a "Work Request Form" and turn it in to the Glass Technician. If the furnace door is stuck with dripped glass, try to find the Coordinator or Technician to free it. If no one is available, get a crowbar from Glass Tool Room (formally the Batch Room). GENTLY and very slowly pry the door up from the bottom, pressing against the sill plate and at the same time having your assistant pull the door gently and slowly to the left. Leave the door open for a moment to let the glass cool. Gently but firmly knock the glass off so the door does not stick again.

## **\*Glory Holes**

### **Glory Hole Light Up & Shut Down**

#### **Hot Equipment Controller (to view temperatures)**

Furnace - ZONE 1

Corner Glory Hole - ZONE 2

Middle Glory Hole - ZONE 3

Window Glory Hole - ZONE 4

(orange display lower left of the controller display)

#### **Light Up**

1. At the glory hole: Turn the switch to "ON", and press the blower button.
2. At the glory hole: insert a lit MAPP gas torch into the lighting port.
3. At the glory hole: turn on the gas for the glory hole.  
At this point you should hear the blower running and the burners should light.
4. Remove the MAPP gas torch.

#### **Shut Down**

1. At the glory hole: turn off the gas valve.
2. At the glory hole: turn the switch to "off".

#### **Temperature Adjustment**

1. At the controller: press the infinity key,  $\infty$ , until the controller shows the appropriate ZONE.
2. Use the up and down arrows to change the glory holes set point.

## **\*Color Bar Oven**

The color bar oven is used to heat color bar prior to its being reheated in a glory hole.

- You are allotted 1/3 of the space in the oven.
- If you need more room you should make arrangements with other blowers at the beginning of the slot.
- In the morning there will probably be color in the oven from the previous day. You should remove the color and put it in a box on the glass shelf. Color in the color oven always belongs to somebody. **Please do not take color that is not yours.** Suggestion: in order to make identification easy, some people engrave their names on their color bars.
- Turn the color oven on at the beginning of your slot if it is not already on. The temperature should be set at 1000° and you should not need to change it.
- Load color onto the angle irons, remembering that the oven is hotter at the bottom than the top. Cold color can be loaded when the box is hot by placing color on a cooled tray at the top of the box and by dipping it in water before exposing it to the heat.

## **\*Hand Tools**

- Hand tools are available for each bench with no extra cost to the user. Hand tools are kept in the wood and glass cabinet as you enter the hot shop.
- Do not get wax on tweezers and shears. If you do, clean them off by pinching, cutting and/or wiping the tool through a fresh gather of glass.
- Do not use shears as hammers.
- Report all damaged tools to the Glass Technician by filling out and turning in a "Work Request Form."
- Blocks and paddles must be immersed in clean water at all times.

## **\*Pipe Cooler**

- If the pipe cooler does not function when you step on the pedal, push the reset button on the GFI plug.

## **\*Pipe Warmer**

- To light the pipe warmer, ignite the Mapp Gas torch and place the head of the torch under to the ribbon burner just above the

pipe warmer and then slowly open the gas. The burner should ignite immediately.

- Do not place pipes or punties with large amounts of cold glass still on them into the pipe warmer.

Avoid letting pipes get red hot inside the pipe warmer. Pipes and punties should never be placed directly into the flame. Rather, place them just in front of the flame for optimal heating. Refer to "Pipe and Maintenance Guide," from Spiral Arts.

### **\*Garage**

First, turn on the garage blower switch. Use the small hand held propane torch to light the garage by putting the flame through the hole next to the burner on the outside of the garage and then turn on the gas. The garage should be preset at 1000 degrees at all times and should not need any adjustments. If for any reason the garage is not reaching temperature (or exceeding it), notify a technician and fill out a "Work request Form."

### **\*Propane Torches**

Pratt's hot shop has a hard plumbed propane system. Set up a torch stand at your bench and make sure the pilot on the torch head is off. Plug into the quick connect behind your bench, it's red and comes down from the ceiling; use the one without the regulator on it for the bench torch. Turn on the valve by the quick connect you have used. Then go and turn on the MAIN valve, located on the post near the corner station. You are ready to light your torch now. When you are done using it, turn off the valve at the quick connect, turn off the pilot on the torch after the line is bled, unplug the quick connect, and return the torch to its proper place in the cabinet. If no one else in the shop is using any torches, turn off the main valve.

### **\*Oxy/Propane Torch**

To begin setting up your torch, you must retrieve a gas saver, oxygen regulator, and hose from the tool storage room where they are stored. Set up a stand with the gas saver attached. Bring in a small oxygen cylinder from the sculpture yard. The key to the sculpture yard is hanging on a hook to the right of the door leading out into the back parking lot. Please make sure the oxygen cylinder is properly fastened to an appropriate green cart with a chain. Attach the regulator to the cylinder. Crescent wrenches are located near the safety glasses in the tool storage cabinet. The green hose plugs into the quick connect on the oxygen tank and the red hose propane plugs into the propane quick connect with the regulator on it located behind your bench. *Make sure to use the quick connect with the regulator on it.* The gauge for the oxygen should be set to 10 PSI and the propane should be set



to 5 PSI. Connect the other hose set and torch to the gas saver. **Make sure the torch is off before turning on the propane at the quick connect and on the post.** Light, adjust, and use the torch as usual. (POOP, propane then oxygen to turn on and oxygen then propane to turn off.) When you are finished make sure to take the setup apart, return all items to their appropriate location, and make sure that the propane has been shut off at the valve by the quick connect behind your bench. If no one is using the torches in the shop, make sure that the main propane valve is turned off at the post by the corner hole.

If you have any questions or problems, please ask!!!!

## GLASS SHOP ETIQUETTE

### \*Rules and Procedures When Using Blow Slots

- All blow slots include glass, annealer space, use of bench and MAPP gas torches and a limited assortment of hand-tools. Access to specialized equipment (hot plate, hot torch, leaf vacuum, etc.) is on an “as available” basis. The amount of glass you are allowed to draw from the furnace may be monitored by the Glass Technician. You should be aware of the amount of glass in the furnace before you begin and be considerate of the people who will be following you. If you plan to draw a large amount of glass out of the furnace, you must notify the Glass Technician at least one week before your slot.
- Gaffer: The gaffer is the person signed up for the blow slot. A blow slot can be split between two people, but one person is responsible for the slot. His or her name is entered on the slot schedule. While it is okay to split a slot (sharing the same bench and glory hole), it is unacceptable to have multiple gaffers working at the same time.
- Preparation Time: Plan to arrive up to an hour ahead of your scheduled slot to light your glory hole, add color to the Kugler oven, light the garage or warming plate, and obtain the hand tools you may require. It is up to you to make sure the shop is ready for **your own** blow slot. The hand tools for each bench are in a designated cabinet the hot shop. The torches are in the glass storage room on the wall and in a grey cabinet to the right as you enter.
- Hand Tools: Pratt provides an assortment of hand tools including: straight shears, duck bill shears, diamond shears, jacks, tweezers, as well as wooden blocks and paddles, blow pipes, and punty rods. All Pratt tools have 'Pratt' engraved or marked on them. In addition, Pratt provides gloves, glasses, wax, and some specialty tools.
- Specialty Tools and Materials: If you are interested in bringing in tools or equipment (other than hand tools or harmless tools), which

could cause a problem for other users or pose potential safety risks, you must contact the Glass Technician a minimum of 3 days before you plan to bring in such tools.

- Other people's tools: If you need a tool that Pratt doesn't have, consider it unacceptable to borrow someone else's equipment.
- Annealer space: You are allowed one third of the annealer space. Please pack your work so you won't take up more than your allotted space. If you are putting special props or glass for pick-up or overlay in the annealer, you should unload them the next day. For special situations, that may affect other users, please make them aware of oven contents and process (i.e. graal pick-up with enamels). The morning annealer is unloaded at approximately 9:00 a.m., the afternoon annealer is unloaded between 1:30 and 2:00 p.m., and the evening annealer is unloaded by 5:00 p.m.

### **\*Consideration of Others**

- Gathering: When you gather from the furnace, you should always turn to your right as you are leaving. When you are approaching the furnace you should stand behind and to the left of the person taking a gather.
- Blowing Area: Please stay behind the yellow line, outside the blowing area, when visiting the studio or watching other blowers.
- Team Size: The hot shop can comfortably accommodate teams of one gaffer and two assistants. More than three people per bench will create a strain on the space as well as others working in the hot shop. To avoid conflicts, teams of more than three people should rent an additional slot during the same period. The person with his or her name on the slot is responsible for payment of the slot and insuring that his or her team does not impede others working in the hot shop.
- Don't talk to the blowers unnecessarily. Glassblowing requires concentration. Be respectful when watching someone at work. Don't assist unless you are specifically asked. Wait to ask any questions until after the piece is finished and put in the annealer.
- Music: Music selection and volume must be acceptable to other Pratt users. Music volume should be at a level that allows users to communicate with their assistants.
- Talk to the other blowers working next to you. Make sure you know what the other workers are making and how you will need to load the annealer. Let them know when you intend to cross behind them or in front of their bench.

- Keep your area clean. Keep your pipes in the pipe warmer and not cluttered in the buckets. Make sure you pick up any unsafe (i.e. broken or unannealed) glass from the floor before it explodes. Do not leave furnace drippings on the floor.
- Disagreements with your assistant: If you are having problems with an assistant, work them out somewhere else. Remember that Pratt is a shared workspace and your tensions will be extremely disruptive and affect other users. Violent outbursts, which cause other users to complain, will result in the loss of your access card.
- Clean up. **You must begin clean-up 15 minutes before the beginning of the next slot.** You must thoroughly clean up and must never expect someone else to clean up for you. Failure to clean up and/or run over into the next slot has an effect on everyone.

This will be addressed in the following ways:

- 1st incident: The glass tech. and coordinator will have a discussion with the user and, together, assess the situation.
- 2nd incident: The glass tech. and coordinator will have a discussion with the user and, together, assess the situation. In addition the tech may ask the user to volunteer 4 hours of their time before their next blow slot.
- 3rd incident: The glass tech. and coordinator will have a discussion with the user and, together, assess the situation. In addition the tech may ask the user to give up a week of studio use.
- 4th incident: The glass tech. and coordinator will have a discussion with the user and, together, assess the situation. In addition the tech may ask the user to return their access card and the status will be reviewed by technicians, coordinator and/or at the glass users at the next glass users meeting.

### **\*Assistants**

All assistants must sign a liability waiver, which can be obtained at the front desk. Assistants do not need a full access card; however, the persons they are assisting must have this card. It is the responsibility of the person hiring an assistant to make sure that assistant has signed a liability waiver and understands the policies and procedures of the Glass Studios at Pratt. Your assistant should be able to make a punty, open and close the furnace and glory hole doors, understand gases and torches, and know the glass studio etiquette. If you continue to work with the same assistant, he or she is encouraged to become accessed for the studio.

### **\*Morning Slot Responsibilities – Start Up Slot**

- Slot time: 9:30 a.m.-1:30 p.m.
- Do not run over time.
- Check the temperature of the annealer before opening it.
- Check inside the #1 Lower annealer and put any work you find there on the glass pickup shelves.
- Turn on annealer #1 Lower, front loader.
- Turn on the color bar oven (if needed).
- Turn on your glory hole.
- Turn on the pipe warmer when you turn on the glory hole.
- Take out glass trash in glass buckets at bottom of ramp.
- Dump glass in strip off buckets into the dumpster, keeping clear cullet separate and in galvanized buckets for remelting.
- Dry strip off bucket should be empty.
- Check the temperature of annealer #2 before opening it.
- Crack open annealer #2.
- Turn down morning annealer by 1:30 p.m.
- Do a general cleanup of all spaces you have used. Clean up starts 15 minutes before the beginning of the next slot.

### **\*Afternoon Slot Responsibilities – Annealer Slot**

- Slot time: 1:45-5:45 p.m.
- Do not run over time.
- Turn on annealer #2.
- Check morning annealer to be sure it was turned down. If not, turn it down.
- Unlock and crack the door on annealer #3 when the temperature is below 200 degrees, then unload and place the glass on the designated shelves.
- Turn off unused glory holes.
- When your slot is over, do a general cleanup of all spaces you have used.
- Turn down annealer #2 after the slot.
- If there are no evening blowers clean up as if you are the evening blowers.

### **\*Evening Slot Responsibilities – Clean Up Slot**

- Slot time: 6:00-10:00 p.m.
- Do not run over time.
- Use annealer #3, front loader, for the evening slot.
- Unload and turn on annealer #3.
- Turn off unused glory holes, color (Kugler) oven, pipe warmer and powder box

- Sweep and hose down the entire hot shop. Move **ALL** equipment out of the way to clean properly. Sweep in and around annealers and the equipment under the hood. Hose down the front half of the shop making sure to get in all the cracks. Use the squeegees to push the water towards the drain in the middle of the shop.
- Return all the equipment to its proper location.
- Put away all tools.
- Turn down Annealer #3.
- Make sure all annealers have been turned down.

### **\*Clean Up Procedures for All Blow Slots**

- Note condition of shop before you begin. If the previous user has not cleaned up, please ask them to. If they have already left and you are unable to contact them, report this on a Work Request Form immediately and a member of the staff will contact the previous user.
- You should only have to clean up in your space, but **the entire shop must be clean at the end of your slot.** Put away the color chopper under White #2 and sweep up any glass shards left over.
- At the end of your slot you must sweep the floor, which includes the area around the benches, around and beneath the glory holes, beneath the annealer, and beneath the furnace door. Floor cleanup is done with a broom. **Do not use the brooms on the benches!** Move all equipment forward and sweep to the front. Next move all the equipment (yolks, tracks, marvers, benches, shields, buckets) back to the annealers and finish sweeping.
- Clean up the powder box, removing all glass powder in and around the powder box. Use a wet paper towel and wipe out the inside thoroughly. Store all bowls and sheets on the bottom and in the drawer.
- The evening slot should hose down the floor to clean up remaining dirt. Do not allow water to go under the annealers. Use the squeegee and brooms to push water toward the floor drain.
- Shut off your glory hole unless you are sure there is a slot scheduled after you.
- If you are the last person using the glass shop after your slot, turn off all glory holes and pipe warmer.

- Turn off hot plate, coil up rubber gas hose, and return to batch room.
- Clean up around and beneath all annealers you have been using.
- Replace all tools to their proper location.
- Newspaper in trash.
- All bricks and kiln shelves belong under the marver.
- Morning, afternoon, and evening slots must make sure the annealer they were using is turned down.
- To keep the annealer on schedule, only use the one designated for your slot (Morning #1, Afternoon #2 and Evening #3) and turn it down after the slot.

### **\*Correct Location of Various Tools**

- All tools must be returned to their proper location.
- Blow pipes and punties belong in the pipe rack located in the hot shop storage area.
- All wood tools belong in the proper location on the tool rack. Blocks **must** be kept underwater past their neck joint. Paddles go in the dry paddle box.
- All Pratt hand tools should be returned to the shelf at the end of the slot.
- Specialized equipment, such as the foil box, air hoses, color chopper, and optic molds belong in the equipment shelves located in the glass storage room.
- Do not leave Pratt blowpipes soaking in the wet drip off bucket.

### **\*Glass Pickup Shelves**

All pieces taken from the annealer should be moved to the pickup shelves. Every two to three days the pieces on the pickup shelf will be dated with a permanent marker pen. **Work that has a date more than 14 days old will be thrown away.** You should make an effort to remove your work the day after you blow, especially if you have large pieces. Please bring your own packing material to transport pieces home, especially if you have a lot of work or if the work is large.

# Hot Shop Safety

## **\*Power Outage Procedure**

**Follow all of these steps in the event of a power outage.**

### **When the Power Goes Out**

1. Turn off all gas equipment, glory holes, pipe warmer, and garage.
2. If the power does not return within 10 minutes, contact the Glass Technician, either in house or by phone (206) 227-6669.
3. Stay on site until the power returns or you are relieved by the Glass Technician.

### **When the Power Returns**

1. The furnace should automatically relight. Once the furnace is running again the blue light on the control panel will be lit and you will be able to hear the furnace burner. If the furnace does not relight on its own, contact the Glass technician immediately.
2. Relight the glory holes per the instructions.
3. Relight pipe warmer and garage as needed.
4. Check the temperatures on the annealing ovens before returning to work.

## **\*Gas Leaks**

If you smell a gas leak, first shut off all auxiliary that has gas running to it. It is not necessary to shut off the furnace or the gloryholes if they are still firing normally because the active flame will consume any stray vapors. Most times the leak is coming from the torches. If you cannot find or stop the leak, contact the Glass Technician immediately.

## **\*First Aid**

First Aid Kits are located between the cold shop door and the eye wash station. Report all accidents, large or small, by filling out an Incident Report Form located inside of the first aid box door. The first aid box is located on the wall across from the stereo units. Notify a staff person of your injury IMMEDIATELY. This is very important. In the event of a minor burn, immediately run cold water on the affected area for a full 20 minutes, then use a burn cream or aloe and bandage. If you have a more serious burn or other injury, you should either call an ambulance or be driven directly to an emergency room. The nearest hospital is Providence, located between 18th and 16th on Jefferson, six blocks north of Pratt. The

best route is to turn left out of the parking lot, go east on Main to 20th and turn left, go north on 20th to Jefferson, turn left and go to 18th.

### **\*Equipment Failure**

- *If glory holes shut down along with furnace:* There has probably been a very short power outage. Follow power outage procedures outlined above and on the side of the furnace control box.
- *If furnace goes down and glory holes remain on:* Stop blowing immediately and keep the furnace door closed. Call the Technician's cell phone (206-227-6669) and wait for a call back.
- *If furnace goes to high fire during a blow slot:* Check to see if someone has done something to the furnace controller. Make sure the controller reads "Zone 1". If there is a red ramp sign on the right, it is on high fire. Press the red "EZ" button so the red ramp sign goes away.
- *Glory holes:* If glory hole shuts off during your slot you have probably experienced a power failure. If a piece of a glory hole door comes loose during your slot, please save the pieces. Using a glove put the pieces on top of the glory hole. If the glory hole burner begins to make a loud popping noise, it is experiencing pre-ignition, or "back burning"; the combustion is happening in the pipe, before the burner. Immediately shut the gas valve off and wait for the burner pipe to cool. Try to relight. If it still makes a loud noise, shut it off and call the Glass Technician.
- *Annealers:* Please check annealer before loading for loose/dangling elements. If two elements are touching they will burn out and the annealer, instead of coming up to temperature, will remain at a low temperature for many hours.
- *If the readout on the GB5 does not make sense or shows an error:* If the error persists, call the Glass Technician.
- *If the annealer takes too long to come up to temp:* If the annealer is not coming up to the desired temperature quickly enough there is nothing that can be done to hurry it up. You may look inside to see if all elements are bright orange, and note any that are not to report to the Glass Technician. You should either be prepared to wait for a few hours, or abandon your firing and call the Glass Technician. Never attempt to insert a propane torch into an electric annealer to speed it up.



## \*Other Safety Precautions

- Eye Protection: You are required to wear eye protection. The furnace and glory holes emit both infrared and ultra-violet light, which can cause profound eye damage. While short exposure to the unshielded eye will not cause permanent damage, prolonged exposure will. Dark sunglasses will reduce exposure to ultra-violet light to some extent; however to maximize your protection you should obtain a pair of #2.5 welding glasses or safety glasses that are rated for 99.9% UV protection. Didymium lenses provide protection against infrared emissions (thus reducing "sodium flare") but offer no protection against UV light. When gloryholes are extremely bright, didymium lenses are not enough—you need additional UV protection. It is advisable to wear glasses that have side shields that protect against reflected light and exploding un-annealed shards.
- Footwear: Pratt requires all users have closed-toes shoes. Sandals or flip-flops are not allowed.
- Clothing: Pratt recommends all users in the hot shop wear cotton clothing. Long pants and long sleeve shirts are encouraged. Lighter colors absorb less heat than dark colors. Synthetic, polyester, and fleece fabrics are far more flammable than cotton.
- Clean Air: Due to the toxicity of various chemicals used in the hot shop, certain procedures should be followed:
  - Wear a dust mask or respirator when sweeping the room.
  - All powders must be used in the powder box and never on the marver or a rolling table.
  - Fuming is not allowed under any circumstance.
  - No smoking in the building.
- Heat: Remember, you probably can't see heat. Marvers can become intensely hot and they make extremely bad chairs. All metal surfaces should be assumed to be hot. Most metal objects in the hot shop either are, or may become, hot. Socks and various other clothing materials may protect you from heat. Use cotton and not a synthetic material for light clothing. Many synthetic materials melt upon contact with heat. Pratt provides a limited number of heat resistant Kevlar gloves and personal protection equipment commonly used for loading the annealers and various other hot tasks.
- Blowpipes and Water: Please read and continue to refer to "Pipe and Punt Maintenance," from Spiral Arts. Always put your thumb over the mouthpiece of the pipe when you dip it into water, then blow quickly through the mouthpiece after you

remove it from the water. If you fail to plug the mouthpiece with your thumb, when the water comes into contact with the hot metal, it will create rapidly expanding steam which can force extremely hot water up the blow pipe making the pipe hot enough to burn you instantly. If this happens, wear gloves to remove the pipe from the water, and do not blow into the pipe; use a compressed air hose to clean the water out of the pipe. Put the pipe aside and allow it to cool down.

- Sharp Glass: Do not leave broken work on glass pickup shelves where other people can cut themselves.
- Fire Extinguishers: A fire extinguisher is located on the structural column as you enter the blowing area, and another one is located in the lounge area on the west wall. In case of fire, use the extinguisher, but be sure to inform the Glass Technician so that it can be serviced for future use.

# **\*Maintenance Request Form**

(In case of equipment problems fill out this form, found on the hot shop office door, and leave it there)

## **PRATT FINE ARTS CENTER**

### **Work Request / Suggestion Form --- Glass**

Circle one: **HOT SHOP**    **COLD SHOP**    **KILN SHOP**    **FLAME SHOP**

**Specific Request** (please be as detailed as possible)

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**Name:**

**Date:**

**Phone:**

**Would you like to be notified when this is resolved?**    **YES**

**NO**

**PLEASE DO NOT WRITE BELOW THIS LINE**

**Staff follow up comments:**

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# Cold Shop Equipment Guide

## \*Availability and Access

The cold shop is available 9:00 a.m. to 10:00 p.m. daily. All cold shop users must have cold working checked on their access cards to use the cold shop. You must check in with the front desk before using and post your Pratt access card and receipt for payment in the card slot by the cold shop door while you are working. The key to the cold shop and the key to the sandblaster are kept behind the front desk. The current access rate for the cold shop is \$20 per hour with a \$10 access minimum. The sandblaster is \$30 per hour with a \$15/ half-hour minimum. All payments go through the front desk. Failure to follow this procedure will result in the loss of your access and a penalty fee. Cold Shop and sandblaster availability is on a first-come-first-served basis, unless you have made arrangements to reserve time in advance. Reservations can be in the reservation book located at the front desk. Reservations for the Cold Shop should be made a week in advance, with a 24 hour notice in the event of canceling a reservation.

## \*Cold Working Equipment Guide

Access to all equipment in the cold working studio is included in the access rate.

Grinding and Polishing Media: Included in your access fee is a supply of silicon carbide grits, pumice, and cerium. All of these materials are very expensive and should be used economically. If you don't find these materials when you enter the cold shop, ask the Technician to replenish the supply.

## \*Safety Precautions

Loose Clothing and Hair: One of the biggest hazards in the cold working shop is the chance of getting your clothes or hair caught in a piece of equipment. Both the punty grinder and the cork/felt wheel are known for grabbing hair and resulting in injury. If you have long hair, you must never run rotating equipment without first tying back your hair.

Precautions for the Grinding Media: The second biggest hazard in the cold working shop is free silica and grit that can be inhaled and cause irreversible silicosis. (Grit is made from Silicon Carbide.) The best method of controlling this is to wipe or mop the floor with water. Silica that stays on the floor and dries will soon be in the air to breathe. Moist particulate matter that is airborne from cutting or

grinding is also harmful to breathe as well, and actually is easier to inhale and travel through the respiratory system.

Eye Protection: Wear safety glasses at all times in the cold shop.

While Pratt provides safety some glasses, we recommend that users obtain their own eye protection.

Hearing Protection: Use hearing protection to avoid injury from noise. Pratt provides hearing protection, but we recommend that users obtain their own hearing protection.

### **\*Belt Sander**

- The belt sander is to be used on glass only. The belts for the machine are located behind it on the wall. You will find an assortment of grits including 80, 180, 220, 400, and cork.
- To operate the belt sander:
- Mount belts on wheels and pull taut by handle on top wheel and pull down. You must then tighten the belt by swinging the side arm of the handle around. Look on the back of the belts for directional arrows.
- Adjust tracking with the hand crank just behind the tightening handles. To track the belt to the right, turn the wheel AWAY from you. To track the belt to the left, turn the wheel TOWARD you.
- You should notice a flow of water as soon as the belt sander is turned on. Do not attempt to sand work if belts are dry.
- Remove belts when finished.
- Re-hang rubber aprons
- Clean up floor and wipe down the machine.

### **\*Diamond Wheels**

Pratt has diamond pads. These diamond pads are very expensive. Please handle with extreme care. Replacing just one pad can cost about \$800.

Use - The diamond pads are magnetic. They are placed centered on the metal lap wheel. The diamond pads are to be used with glass only. The wheel surface and the diamond pad, top and bottom, must be free of all debris. Even small particles can cause significant problems such as scratching the glass surface or damage to the pad. It is possible for material to work its way through the pad causing it to become damaged and possible harmful if used. Dry off the bottom magnetic surface of the diamond pad with either a towel or the air hose. Make sure that both wheels are dry before grinding. Spin-dry the metal wheel if necessary.

**Always** run water when using the diamond pads. While the diamond pads can withstand high temperatures, your glass will not. Water flushes away ground glass particles and acts as a lubricant and coolant. Use a steady flow for coarse grits, a dribble for medium grit and fine grit. Too much water causes hydroplaning and you could lose your grip on your piece. If you start hydroplaning, stop, turn down water, and continue. We will have a number of different grit pads available including a pre-polish pad and a synthetic felt polishing pad. Remember to use water with the pre-polish pad.

- Pre-Polish Pad – Use the Pre-polish pad with running water at all times. Dry the back before starting and before putting the wheel away.
- Felt-Polishing Pad – Use the felt-polishing pad much like the existing cerium oxide wheel. Mix a slurry of one-third cerium oxide with two-thirds water. Apply the cerium oxide to the felt pad. Wet the wheel to keep the felt pad wet to prevent dust.
- Pad Storage – Clean the surface with clean clear water. Dry the diamond pads with paper towels. Dry the back magnetic surface. Return the diamond pads when done. **Do not drop** and do not lean the diamond pads against the wall to avoid damage.

### **\*Lap Wheels**

- Lap wheels are for grinding, faceting, and general shaping of glass only. You must never attempt to grind stone or metal on the lap wheels.

#### **Lap wheel operation**

- If the trough is empty you can add 3/4 old grit, located around the wheel, with 1/4 new grit, located under the counter.
- Turn on water valve until a slow constant drip is flowing onto grit in trough.
- Wait for water to mix with grit and flow onto the lapping wheel.
- Turn on the machine. The switch is located on the front of the machine.
- Move your piece evenly back and forth across the wheel, spending about twice as much time on the inside and outside areas of the wheel as moving through the center. This will prevent grinding a dip or groove in the lapping wheel. Have a good grip on your piece. The wheel can drop the grit in lumps that will catch on the bottom of your piece and pull it from your hands.

When you are finished grinding, run fresh water on wheel to clean it making sure to get ALL the grit off the wheel, and leave it running until it is completely dry. Do not leave the grit tray or waterspout over the wheel.

Thoroughly clean yourself (hands, arms, apron) and your piece before moving from the 80 grit machine to any other equipment as to avoid contamination. Use the dunk bucket located to the side of the machine to rinse your piece and your arms. **DO NOT RINSE GRIT IN THE SINK.**

#### **Lap wheel clean up**

- When working with of silicon carbide grit it is very important to be in a clean environment with clean tools. If you expect good results from the lap wheel you must follow these procedures.
- Check to make sure the equipment is clean before you begin.
- Your skin, clothing, and the piece you are working on should be absolutely free of the 80 grit before continuing.
- When you have finished using the lap wheel, make sure floor around the wheel as well as the walls around it are clean.

### **\*Spatzier Lathe (Punty Grinder)**

The lathe (punty grinder) is for the removal of the punty mark on the bottom of vessels. This tool is equipped with a set of very expensive, diamond abrasive wheels. Diamond wheels are different from carbide type wheels. When using a diamond wheel, it is crucial that you attempt to make full direct contact between the piece and the front surface of the wheel. Be careful not to do your grinding on the edge of the wheel, but be sure to use the whole surface.

#### **Lathe operation**

- Insert spindle into lathe shaft, making sure to line them up correctly.
- Mount wheel to spindle with a washer on each side. Each wheel is directional; look at the side of the wheel for the arrows that indicate what direction the wheel should be spinning when in use or what side always faces out. Hand tighten only. There is a wrench in the wheel cabinet for removal of the nut if it becomes tightened during use.
- Position water feed so that the sponge is in direct contact with the wheel surface.
- Turn power switch to on.
- Make sure that water feeds are operating, adjust if necessary. You only need a gentle spray coming off of the wheel, but please make sure that the entire wheel is moistened when working.
- There is only one speed for the lathe. Please do not try to adjust it.

- Grind.
- When finished, turn off water, and spin wheel dry.
- Turn power switch off.
- Remove diamond wheels and replace them in cabinet.
- Clean up.

### \*Diamond Saw

- Use the diamond saw for the removal of excess glass (more than can be removed with the lap wheels), for cutting castings to size, and for general trimming. **Do not use the diamond saw for cutting any material other than glass.** The key for the diamond saw can be found at the front desk. You must unlock the saw before use.

#### **Diamond saw operation**

- Make sure that the water level in the pan is above the top of the water pump.
- Check that machine is plugged in.
- Adjust the blade for the correct height.
- Check and adjust water feeds so is giving a steady flow of water.
- Wear rubber apron (hanging next to belt sander).
- Wear a respirator and safety glasses. There are also face shields available.
- Remember, it is safe to actually touch the moving blade; the danger is in putting too much pressure or torque on the blade while it is turning, so **go slowly**.
- With this machine there is one movement for the glass and three movements for the blade. (1) The tray moves forward and backward and is where the glass should be placed when cutting. (2) The blade can be moved up and down using the hand crank directly under the water trough. The foot pedal and the handle above the blade SHOULD NOT be used at any time to bring the blade down onto the piece.
- Work can be clamped to sliding table but should, under most conditions, be secured by using both hands. Use extreme caution. Do not torque blade. Free hand cutting is absolutely prohibited. If this kind of cutting is required please contact the Glass Technician for assistance.
- Do not make cuts deeper than 1/2 inch per swipe. Going directly through a piece that is thicker than this can cause the blade to become damaged or damage the glass.
- Turn machine on at the front of the machine and again to turn machine off. After machine starts, wait for water to pump onto blade.



- Do not ever force your work into the blade. Diamond blades will cut perfectly with very little pressure. Diamond blades will not cut any faster with more pressure. A steady light pressure against the blade is all you need. If the blade begins to bind or rub, causing gray slurry to be produced on the glass, it is possible that blade is bent, has overheated, the glass has been torqued, and/or you are cutting too fast. Readjust water feeds and wait for the blade to cool down while the machine is running. Notify the Glass Technician immediately and fill out a "Work Request Form."

***Diamond saw clean up***

Like the lathe (punty grinder), the diamond saw tends to spray a lot of water. You must not leave puddles of water on the floor beneath the diamond saw. When you are finished, clean the sliding table, the area around the diamond saw, remove any glass chunks in the water trough, and refill the water trough to the correct level, so that the pump is submerged.

**\*Pumice and Cerium Wheels**

- Pratt provides cerium in limited quantities. If you are in need of more material, please contact the Glass Technician.

***Pumice and cerium wheel operation***

- Turn motor on.
- The pre-polish resin wheel must be moistened with water at all times during use. Use the spray bottle provided to wet the wheel between each pass you make. Apply pumice slurry directly to the wheel and your piece.
- Cerium can be added using the cerium sponge. The sponge is kept in a Tupperware container just for this wheel.
- **When you are finished with either wheel keep the motor running until both are completely dry.** This is very important!!! If the wheels are left wet the water will soak to one side and make the wheel spin out of balance.

***Cork and Cerium wheel clean up***

It is important to rinse out and wipe down the splash pans as well as the areas surrounding them that have been splattered with cerium. While operating this tool, you should be careful not to allow cerium to get on the cork wheel.

- Wipe down the table, back splash, and the walls.

**\*Hand Lapping**

There are three different grits available for hand lapping; 320, 400 and 600. All are kept above the counter. To hand lap, rinse off the plate, make a small mound of grit

on the center of the plate and add enough water to make a thin syrup type mixture. Begin grinding by moving your piece in a circular motion over the mixture.

## **\*Sand Blasters (White=Glass Only, Blue=Metal and Glass)**

### **\*To Start the White Sandblaster**

- Turn on machine – switch on the right front leg of the machine.
- Press and release the Filter Cleaning Pulse Button on the left leg of the machine, wait twenty seconds, then press and release the button again.
- Open the door and load your glass. Make sure your glass is dry before loading it into the machine.
- Close the door and make sure that it is latched.
- Make sure that the yellow valve handle on the left leg of the machine is vertical (pot depressurized).
- Turn on the air at the valve on the wall to the right of the machine.
- Adjust the air pressure on the regulator on the left leg of the machine. Pull the black knob on the top of the regulator up, dial in the required pressure, push the black knob back down. **(20 PSI minimum – 50 PSI maximum)**
- Push the black ball handle in and hold in place. Press and hold the Hopper Vibration button for ten seconds.
- Pull out on the black ball handle and hold in place.
- While holding the black ball handle out, rotate the yellow valve handle on the left leg of the machine forward to the horizontal position (pot is now pressurized).
- Insert hands into the gloves of the machine.
- Hold your glass with one hand and the blasting nozzle with the other.
- Step on the black foot pedal to start the abrasive flow, release the pedal to stop the abrasive flow **(DO NOT BLAST THE WINDOW)**.

### **\*To Reload Abrasive Pot**

- Release the foot pedal.
- Rotate the yellow valve handle on the left leg of the machine upwards to the vertical position (depressurizes the pot).

- Push the black ball handle in and hold in place. Press and hold the Hopper Vibration button for twenty seconds.
- Pull out on the black ball handle and hold in place.
- While holding the black ball handle out, rotate the yellow valve handle on the left leg of the machine forward to the horizontal position (pot is now pressurized).

#### **\*To Shut Down the White Sandblaster**

- Release the foot pedal.
- Rotate the yellow valve handle on the left leg of the machine upwards to the vertical position (depressurizes the pot).
- Back off the pressure on the regulator until it reads zero. Pull the black knob on the top of the regulator up, release the pressure, push the black knob back down.
- Open the door and remove your glass.
- Turn off the air at the valve on the wall to the right of the machine.
- Turn off the machine at the switch on the right leg of the machine.
- Sweep up any dust, dirt, or debris in the sandblasting room. Leave the sandblaster room cleaner than you found it.
- DO NOT add any grit to this machine.

#### **\*To Start the Blue Sandblaster**

- Open main air valve located behind machine.
- Adjust air pressure using regulator at lower left. Do not exceed 50 p.s.i.
- Do not adjust any other valves.
- Place work inside cabinet.
- Latch door securely.
- Turn on lights and dust collector switch at top of machine.
- Place hands inside gloves, aim nozzle away from window.
- Step on foot pedal to start abrasive flow. A puff of grit will leave the nozzle when you first step on the pedal (this is normal), then the abrasive stream will stabilize and be nearly invisible.
- Never aim toward window glass.

#### **\*To Shut Down the Blue Sandblaster**

- Turn off main air valve behind machine.
- Sweep floor.
- Turn off lights.
- Lock door.
- Return key to front desk and pay for your time.

**If you have any questions please contact the Glass**

**Technician.**

## \*Staff Roles and Responsibilities

The staff at Pratt is committed to creating a better facility for both the student and the professional artist. It is important that you know who the staff members are along with their respective duties.

- Glass Technician – The glass tech maintains equipment, insures quality glass in the furnace, maintains supplies of raw materials, and is responsible for general policies and procedures in the glass departments.
- Glass Studio Manager – The studio manager maintains supplies of materials and equipment for classes, develops and organizes curriculums and oversees the running of the flame, kiln, cold and hot studios.
- Chargers – There are 2-3 chargers who are responsible for maintaining the level of glass in the furnace and securing the building at night.
- Glass Coordinator – The coordinator is responsible for orienting people to the studios, and issuing access cards.
- Front Desk Personnel – The front desk person will schedule the use of the fusing and slumping rental kiln, annealers, cold shop and sand blaster time, blow slots, and casting slots, as well as any other special equipment.

## GLASS GLOSSARY

**Acid Etch** - The process of etching glass using hydrofluoric acid. **Note: hydrofluoric acid is extremely dangerous and is not allowed at Pratt.**

**Air Twist** - A decoration in which two or more air bubbles are twisted inside the glass.

**Alumina** - A highly refractory material that is used in kiln wash and in fiber products. Melting point 3722° F.

**Alumina Oxide** - A an abrasive media used in sandblasting and glass polishing.

**Alumina Hydrate** - A refractory material with a very high melting point (3704°). It is used in kiln wash and in refractory materials to prevent fusing.

**Anneal** - To reduce the stress in a piece of glass by slowly releasing the heat.

**Annealer** - An oven that goes up to about 900° and then slowly drops in temperature over 8 or more hours.

**Ariel** - Similar to a graal except it is cut more deeply and gathered over to trap air in the cuts.

**Batch** - A mixture of raw chemicals used to make molten glass.

**Bench Blow** - When a glass blower's assistant blows into the blowpipe while the glassblower is shaping the glass.

**Bit** - A small blob of glass usually being added to a piece as decoration.

**Blocks** - U-shaped fruit wood blocks with a handle used to center and shape glass.

**Blowpipe** - A 4½ foot long stainless steel pipe used to gather and blow glass.

**Cane (Threads)** - Thin glass rods pulled from a molten blob of glass.

**A Canna** - The technique of picking up larger cane on a collar and forming the object out of that material only. The term is also used to describe objects made with this technique. Also called a fili (with lines).

**Capping** - Placing your hand over the end of a pipe to trap air which will expand due to heat and blow out the bubble.

**Cerium Oxide** - A powdered rare earth metal used on the felt wheel to achieve a high polish on glass.

**Charge** - To put batch or cullet into the furnace.

**Cheater (Button)** - A small button of glass that is applied to the end of a piece to protect the piece from being damaged by the punty.

**Chords** - Bands of denser glass which are usually drawn up from the floor of the furnace.

**Collar** - A gather of glass on a pipe, blown through and made into a disk used to pick up cane for a canna technique. Also used with murrini and graal blanks.

**Continuous Melt Furnace** - A furnace with separate melting and gathering chambers, which can be worked 24 hours per day.

**Crown** - The roof of a furnace.

**Cullet** - Broken glass put into the furnace to make molten glass.

**Day Tank** - A furnace whose floor is a liner that hold the glass.

**Devitrification** - A crystalline growth on the surface of glass caused from the glass molecules beginning to align.

**Diamond Shears** - Shear like tool used to make round cuts in glass as opposed to straight cuts.

**Dog House** - The opening through which you charge a continuous melt furnace.

**Duckbill Shears** - Shears with a curved-up end used for trimming lips and other cutting.

**Expansion Coefficient** - A measure of the amount of physical expansion that takes place during temperature changes. Two different types of glass with the same expansion coefficient are usually compatible.

**Fango** - Sea mud used to coat the plates to prevent the cane from sticking to the plate. Locally the best source is Whidbey Island.

**Ferrini** (also ferretti, ferrigi, etc.) - Small pieces of square steel bar used to prevent the cane from rolling off the plate.

**Fiber Products (Frax)** - A blanket-like refractory material that has a high melting point and can be used as insulation on furnaces and annealers or as a malleable surface upon which to place hot pieces in the annealer. Frax can be rigidized with a solution of water (65%) and sodium silicate (35%). One of the major components of fiber frax is silica, which is extremely toxic to breathe. This material must be handled with caution.

**Fining Out** - The process of reducing the number of seeds or small bubbles in the glass. This is usually done by allowing the glass to soak for a long period of time after charging (see Squeeze).

**Flue** - The chimney on a furnace.

**Fuming** - The process of introducing a metal oxide into the hot air around a piece for the effect of luminescence. **Note: this is often a toxic process and not allowed at Pratt.**

**Fuse** - To heat two or more pieces of glass until they fuse together.

**Gaffer** - Lead or head glass worker. The person who directs the work of their assistants.

**Gather** - Drawing glass from the furnace by dipping and rotating a blowpipe or punty in molten glass.

**Gatoi** - A steel or iron plate **with** grooves used for spacing cane.

**Glass Line** - The highest level the glass should reach in a full furnace.

**Glory Hole** - A small re-heating furnace made of an insulated chamber and a burner.

**Graal** - A piece decorated by cutting through an overlay to create a design and subsequently reheated, blown to its full shape.

**Jack Down** - To put a neck or crease in a piece with jacks.

**Jacks** - A tweezer-like tool with tips made of steel. Used to make creases and necks and for general shaping.

**Kevlar** - A heat resistant material used on insulated gloves.

**Kiln Wash** - a combination of calcium carbonate and alumina hydrate used to prevent glass from fusing with kiln furniture or slumping molds.

**Kugler** - A trade and generic name for densely colored glass rods.

Kugler is one of the main sources of solid color for blown glass. (see also Zimmerman)

**Lapping** - The process of putting a flat surface on a piece.

**LFE Controller** - A brand name PID process controller capable of holding one profile which is up to 12 segments long.

**Marver** - A thick steel table used to shape and cool glass. The word marver originates from 'marble' which is what was originally used.

**Mezza Filigrana** (Half Filigree) - the technique of picking up cane on a bubble and twisting the bubble to form a spiral pattern in the cane.

Also used to describe objects made with this technique. Also called a retortoli (twisted).

**Mild Steel** - The type of steel we are most familiar with. Mild steel rusts and burns at temperatures over 1000°. Used as the structural element in most hot glass equipment.

**Mizzou**- A high strength, high temperature castable refractory often used to cast glory hole and furnace doors.

**Moile (moil)** - The glass left on the blowpipe after you crack off the piece.

**Muller** - A large device used to mix sand for casting.

**Nichrome wire (Kanthal A-1)** - Also known as resistance wire, this wire is used to wind elements for electric kilns and has a melting point around 2500°.

**Olivine** - An infusible neosilicate sand that is often used for glass casting and other procedures where free silica is unacceptable.

**Optic Mold** - An aluminum or bronze mold that glass is blown into to achieve a ribbed look.

**Overlay** - A thin layer of colored glass on the outside of a piece.

**Oxidation (combustion)** - The presence of excess air in a flame or combustion chamber. In an oxidation atmosphere there should be no flame coming out of the furnace or glory hole.

**Paddle** - A tool usually made of cherry wood and used to flatten glass and block heat.

**Pacifis** - (pronounced 'par-chovies') Wooden jacks.

**Partlo MIC-6000** - A process controller capable of storing up to eight 6 segment profiles.

**Pastoral** - A large fork-like tool used to heat cane plates.

**PID Controller** - A controller that controls proportional output using three parameters, gain (proportional band), integral (reset), and derivative (rate). Used in furnaces and usually not in annealers.

**Pi Calipers** - Used to size collars and bubbles for cane and murrini pickup.

**Piera** - Rectangular plates of steel or iron used to arrange and heat cane for pickup.

**Polariscope** - A device employing two polarizing filters, used for examining work for internal fatigue, which appears under the filters as rainbow of color.

**Post** - A gather of glass on a solid rod used to pull the cane gather.

**Pot Furnace** - A furnace that has a crucible to hold the molten glass.

**Profile** - A series of ramp and soak parameters that are entered into a controller to determine a heating or cooling cycle.

**Pumice** - A fine volcanic glass used for polishing. Most common size is ought and a half (0 1/2).

**Punty** - A 4-foot long stainless steel or mild steel rod used to transfer work to after using the blowpipe. A Punty is also a term used for the bottom of a vessel where a mark is left from where the punty rod was attached.

**Quartz Inversion** - The change in the crystalline structure of quartz at various temperatures. During these changes the quartz in glass actually changes in size causing strain.

**Reduction (combustion)** - The presence of excess gas in a flame or combustion chamber. In reduction you will probably see a flame coming out of the glory hole or furnace.

**Refractory** - A material property which indicates a resistance to melting. Common materials that are usually considered refractory are alumina, silica, and zirconium.

**Reticello** (Netting) – The technique of blowing a bubble of a canna twisted in one direction into a bubble of the same number of cane twisted in the opposite direction. The result is a series of air bubbles trapped in between the overlapping gaps in the cane. The term is also used to describe objects made with this technique.

**Sand blasting** - The process of removing, carving, or etching glass with a sandblasting machine.

**Seeds** - Tiny bubbles in the glass (see Fining Out)

**Shards** - Small fragments of colored glass melted into a piece for decoration.

**Silica (Si)** - The major component of glass. Free silica which is liberated during grinding and polishing is extremely toxic and has been linked to various cancers and white lung disease.

**Silicon Carbide** - A grit used for grinding glass. Silicon Carbide is a toxic material. Most common grits are 70 for rapid cutting, 220, 400, and 600 for smoothing.

**Slump** - To heat glass until it softens and bends.

**Soffietta** - A cone shaped device used to inflate pieces on the punty.

**Squeeze** - A period at the end of the soak cycle during which the temperature is dropped to about 1900° very quickly before returning to working temperature. The squeeze takes place at the beginning of the day.

**Stainless Steel** - An alloy of steel, which contains chromium and is particularly resistant to rusting. The most common alloy is 304 and an alloy, which stands up to heat particularly well, is 316.

**Steam Stick** - A wooden cone shaped tool used to inflate a piece on the punty by force of expanding steam.

**Stones** - Small rocks in the glass, which usually comes from the furnace crown or tank.

**Straight Shears** - Shears made of tool steel which are used to make straight cuts and to trim lips.



**Tweezers** - Used for shaping and pulling glass and for cooling a neck or a punty with a drop of water.

**Underlay** - A thin layer of colored glass on the inside of a piece.

**Vermiculite** - A mica based material that is commonly used in gardening. Vermiculite is heat resistant and can be used to place hot glass pieces on in the annealer or while being worked.

**Wisk brush** – Used to brush cane immediately after pickup to remove any debris on or in between the cane.

**Zanfirico** – Complex cane made by picking up cane on a solid gather and then twisting as the cane is pulled.

## Coffee/Food Establishments Near Pratt

Loosely organized by location (immediate vicinity, International District, 23<sup>rd</sup> and S Jackson St)

### **Immediate Vicinity**

#### **Broadcast Coffee**

1918 E Yesler Way (corner of Yesler and 20<sup>th</sup>)  
Coffee, sandwiches, pastries

#### **Moonlight Café**

1919 S Jackson St  
Vegan, vegetarian and other Vietnamese full meals and lighter fare

#### **Seven Star Mini Mart**

1917 S Jackson St  
Convenience store next. door to Moonlight  
Ice cream novelties as well as the usual chips, soda, candy

#### **Franz Bakery Outlet**

2006 S Weller (20<sup>th</sup> and Jackson St)  
Fresh donuts, croissants, and bread

#### **Northwest Tofu Restaurant and Factory**

1911 S Jackson St  
Chinese with vegetarian options

#### **Wonder Coffee and Sports Bar**

1800 S Jackson St, Suite E  
Ethiopian and International food

#### **Dominos**

1800 S Jackson St, Suite D  
Pizza chain; 206-325-3230 for delivery

**Plaza Dome El Obero**

1712 S Jackson St

Coffee, beer, wine; sandwiches (vegan option), Panini, artisan salads

**Cheeky Café**

1700 S Jackson St (corner of Jackson and 17<sup>th</sup>)

Closed Mondays

Asian fusion and comfort food for the masses; breakfast, lunch, dinner; vegetarian options

**G.R.E.A.N. House Coffee and Café**

123 21<sup>st</sup> Ave (Between Fir St and Yesler Way)

Breakfast and lunch; closed Mondays

**23<sup>rd</sup> and S Jackson St****Starbucks**

Corner of 23<sup>rd</sup> and Jackson St

Sandwiches, cookies, coffee

**Red Apple**

Promenade 23 (at 23<sup>rd</sup> and Jackson St)

Grocery store

**Taco Del Mar**

Promenade 23 (at 23<sup>rd</sup> and Jackson St)

Mexican chain serving Baja style Tacos, burritos, quesadillas, taco salad, etc.

**Subway**

Promenade 23 (at 23<sup>rd</sup> and Jackson St)

Hot and cold sub sandwiches; vegetarian options available

**International District****Saigon Deli**

1237 S Jackson St

Very inexpensive high quality Vietnamese take-out; Banh mi (sandwiches) and hot food with vegan and vegetarian options; \$1.50 sandwiches—a Pratt favorite!

**Malay Satay Hut**

212 12<sup>th</sup> Ave S (go west on Jackson St, go right on 12<sup>th</sup>)

Delicious Malaysian fare with vegetarian and vegan options

**Tamarind Tree**

1036 S Jackson St, Suite A

Highly acclaimed Vietnamese restaurant; 206-860-1404 for take-out orders

**Uwajimaya**

600 5<sup>th</sup> Ave S (go west on Jackson St, go left on 6<sup>th</sup>)

Food court and grocery

Too many options (including many vegetarian) to list

**World Pizza**

672 S King St (Chinatown)

Closed Mondays

Artisanal pizza, many varieties served by the slice; many vegetarian options

# RESOURCE GUIDE

## Adhesives

R.S. HUGHES SEATTLE  
7031 South 193rd Street  
Kent, WA 98032  
Tel (206) 767-4463

QCM Adhesives and Coatings  
930 S. Central  
Kent, WA  
859-0933

## Arts Organizations

American Crafts Council  
72 Spring St.  
NY, NY 10013  
(212)274-0630

Allied Arts Foundation  
4111 E. Madison St. #52  
Seattle, WA 98112  
206.624.0432

Artists Trust  
1835 12th Ave  
Seattle, WA 98122  
(866) 218-7878

Glass Art Society  
6512 23rd Ave NW #329,  
Seattle, WA 98117  
(206) 382-1305

4Culture  
101 Prefontaine Pl S  
Seattle, WA 98104  
(206) 296-7580

Seattle Office of Arts and  
Culture  
arts.culture@seattle.gov  
(206) 684-7171

## Color

Olympic Color Rods  
818 John St.  
Seattle, WA 98109  
206-343-7336

Hot Glass Color & Supply  
2227 5th Ave  
Seattle, WA 98121  
(206) 448-1199

Gaffer Glass USA  
19622 70th Ave South, Unit 4  
Kent, WA 98032  
(253) 395 3361

## Hand Tools and Blow Pipes

Artco  
348 N. 15th St.  
San Jose, CA 95112  
(408)288-7978

Blockhead Tools  
1825 Franklin St  
Bellingham, WA 98225  
(206) 979-1058

Jim Moore Glass Tools  
P.O. Box 1151  
Port Townsend, WA 98368  
360.379.2936

Steinert  
1000 Mogadore Rd.  
Kent, OH 44240  
216-678-0028

Spiral Arts, Inc.  
901 NW 49th Street  
Seattle, Washington 98107

206-768-9765

### **Hardware Items**

Johnstone Supply  
18205 Andover Park Way  
Tukwila, WA  
575-0755

Pacific Industrial Supply  
2960 4th Ave. S.  
Seattle, WA  
682-2100

### **Lampworking**

Wale Apparatus Co.  
400 Front St.  
PO Box D  
Hellertown, PA 18055  
(215)838-7047

Frantz Bead  
130 West Corporate Road  
Shelton WA 98584 USA  
800-839-6712

### **Safety Equipment**

Central Welding Supply  
841 NW 49th Street  
Seattle, WA 98107  
206-783-2283

### **Schools W/ Glassblowing**

Haystack Mountain School of  
Crafts  
PO Box 518  
Deer Isle, ME 04627  
(207) 348-2306

Penland School of Crafts  
Penland, NC 28765  
(704)765-2359

Pilchuck Glass School  
107 S. Main St. #324  
Seattle, WA 98104-2580  
206-621-8422

Urban Glass  
647 Fulton St  
Brooklyn, NY 11217  
(718) 625-3685

### **Other Materials**

Abrasives Northwest  
Silicon carbide grits  
1114 Andover Park West  
Tukwila, WA  
575-0735

Seattle Pottery Supply  
35 S. Hanford  
Seattle, WA  
587-0570

Thompson Enamels  
Box 310, 650 Colfax  
Newport, KY 41702  
(606)291-3800

# Appendix A: Waiver Agreement



## WAIVER AGREEMENT

### INSTRUCTORS AND STUDIO COORDINATORS:

#### FOR ALL PRATT FACILITY USERS:

There is an element of risk inherent in participating in artistic processes, handling artistic materials and operating machinery. Pratt Fine Arts Center takes every precaution to ensure the safety of our facility users. Being an equipment-intensive facility, it is important for users to understand that this equipment can be dangerous if used improperly and/or without teacher supervision. The following general waiver must be signed in order to participate in any educational program at Pratt or to use the facilities as an independent study student.

In consideration of my participation in the educational programs and/or use of the facilities as an independent user, I hereby discharge and forever hold harmless Pratt Fine Arts Center, its Board, staff, volunteers, the City of Seattle Department of Parks and Recreation and all agencies whose property and personnel are used as part of Pratt's educational program and any sponsoring, co-sponsoring or funding agency(ies) or individual(s) for responsibility for any injury, illness, death, damage, loss, accident, delay or irregularity which may be occasioned for any reason whatsoever during the course of my participation. I certify that I am physically able to participate in all the activities for which I am enrolled. We assume no responsibility for losses or additional expenses due to influences beyond our control.

I also give my permission for Pratt Fine Arts Center to use without limitation or obligation: photographs, film footage, tape or video recordings which may include my image or voice.

#### FOR STUDIO USERS ONLY:

I have read and agree to the policies and guidelines set forth in the Procedure and Policy Handbook for Users. I understand that failure to abide by the policies and guidelines may result in cancellation of my usage privileges. I further understand that damage to equipment and/or facility due to misuse or negligence will be my financial responsibility.

### PLEASE PRINT

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Course Title: \_\_\_\_\_ Course #: \_\_\_\_\_

Instructor: \_\_\_\_\_

### CONTACT IN CASE OF EMERGENCY

NAME: \_\_\_\_\_

PHONE #: \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

(for youth under 18, parent or guardian name and signature on waiver required)

# Appendix B: Code of Conduct



## Code of Conduct for All Pratt Constituents

**All students, studio users, instructors, and staff are expected to conduct themselves in a courteous and professional manner at all times by observing or complying with the following:**

**Treat each person with respect.  
Value the learning experience.  
Keep agreements made with Pratt and others.  
Enter fully into the experience of working together.**

**The following actions cannot be permitted because of their impact on students, teachers, artists, patrons or coworkers:**

**Abusive or assaultive behavior.  
Causing damage to Pratt's property.  
Dishonesty.  
Failure to comply with safety or security rules and procedures.  
Intimidation or disruptive conduct.  
Possession, distribution, sale, consumption, or being under the influence of alcohol or drugs while working at Pratt.  
Possession of weapons.  
Sexual, racial, or gender harassment.  
Theft and/or non-payment of fees.**

**Failure to meet these expectations or other misconduct may result in disciplinary action up to and including termination of facility use or loss of membership.**

For a copy of the Pratt Fine Arts Center Code of Conduct Policy, please contact Human Resources.

# Appendix C: Acknowledgement Form



## STUDIO ARTIST ACKNOWLEDGEMENT FORM

Congratulations on becoming a Studio at Pratt Fine Arts Center!

The Studio Access program at Pratt Fine Arts Center is designed to help practicing artists by offering affordable access to shared studio space and equipment. The program is distinctly unique and is not offered anywhere else in the region.

All of us at Pratt go to great lengths to maintain the studios and make sure that they are being used properly. As a new Studio Artist at Pratt, you now share in that responsibility and we expect that you will treat the facilities with the highest level of care, adhering to all of the standards set forth in the Studio User Guide.

As a Studio Artist with studio access privileges, you are required to read each section of the user guide and comply with its directions. Should you have any questions or concerns about any of the information provided, please discuss them with the appropriate Studio Access Coordinator. Once you are certain that you understand all of the requirements set forth in the guide, sign the acknowledgement below and turn in the form with your Waiver Agreement prior to your first studio access.

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By signing below, I hereby acknowledge that I have read the Studio User Guide in its entirety. I assert that I understand the policies, practices and procedures described herein and I commit to consistent and complete compliance.

\_\_\_\_\_ (Print)  
Studio Artist Name

\_\_\_\_\_  
Studio Artist Signature

\_\_\_\_\_  
Date