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ATAMI FACILITY GUIDELINES

The Advanced Technology and Manufacturing Institute (ATAMI) is an Oregon State University research, development and commercialization institute. ATAMI drives and facilitates the commercialization of promising OSU technology among the cross-cutting sectors of advanced materials, processes and manufacturing. Sam Angelos directs the Institute.

The mission of ATAMI staff is to administer a safe and secure facility that provides state-of-the-art processes and skills to academic and industry users. ATAMI staff members serve to help you succeed and to create a supportive and encouraging community.

Besides staff, ATAMI residents are OSU faculty and students, private sector subtenants and private sector day users. While located on the HP Inc. campus, OSU has full oversight of facility operations. These guidelines are in place to ensure your safety and facility compliance with OSU and HP Inc. campus policies and procedures.

Parking and Building Access—ATAMI's front parking lot is designated by HP Inc. as guest parking for this facility and for our neighbor to the NW, 1100 Circle. Facility users, subtenants and employees may park in the lot across the lane west of the building and in the lot northeast of the building.

Phones—ATAMI desk phones are on OSU's telecommunication network. Press 9 to get an outside line. In the shared user areas, telephones are located in the lobby. If you call 911 for emergency response using an OSU phone, immediately let the dispatcher know your location—HP Inc. Campus Building 11—as the call will appear to originate at the OSU main campus.

Emergencies

- **Evacuation Routes; Fire Extinguisher and Pull Alarm Locations**—Familiarize yourself with the ATAMI Evacuation Routes Map and with the locations of fire extinguishers and pull alarms shown on the reverse side of the same handout. The Evacuation Routes Map is posted next to the elevator doors on first and second floors, and the extinguisher and pull alarm locations are posted throughout the facility.
- **Responding to Emergencies; Evacuation**—If the emergency alarm sounds, establish communication with others in your immediate area, take a headcount to make sure that all evacuees can be accounted for, leave the building through your nearest exit and meet at the assembly area closest to where you exit. Do not leave the assembly area until the all-clear alarm sounds.
- **Specific Fire Emergency Response**—If you are the first to observe a fire emergency, follow OSU's 1-2-3 sequence: 1. Pull fire alarm; 2. Call 911 or 9 + 911 when using an ATAMI desk phone; and 3. Use fire extinguisher (as explained in OSU's Fire Extinguisher Use training video, OSU does not require you to use a fire extinguisher to extinguish any fire. If you feel safe and comfortable using a fire extinguisher and you choose to use one to extinguish a fire, adhere strictly to all Fire Extinguisher Training guidance). Follow the evacuation procedures described above.

Respecting and Protecting Intellectual Property—It is inappropriate to seek out, use or obtain others' work without their explicit consent. This includes reviewing folders on the ATAMI computer network and recipe folders on the tool. Access to the facility is contingent on adherence to this confidentiality protocol.

Secure Building—Our objective is to be a welcoming and secure building. By having a badge you share in the communal responsibility to respect the security needs and expectations of ATAMI residents and sub-tenants. Violators of this policy will be reminded once before access is discontinued. All access points into the facility are under 24-hours video surveillance.

- YES! Courier deliveries: Let the delivery driver in, have him/her drop off the item on or near the table to the north of the front entry; most deliveries do not require signature.
- NO! Unbadged people who are not delivery drivers and whom you do not know: While it may feel friendly to let unbadged visitors into the building, it undermines the premise of a secure building.

Environmental Health and Safety—The OSU Environmental Health and Safety (EH&S) website at (<http://oregonstate.edu/ehs/>) sets out OSU policies and protocols that govern ATAMI lab safety, hazardous waste handling and spill response as well as offering training materials and a broad set of information relating to chemical safety. In addition to ATAMI's chemical safety related pre-badging requirements, we strongly recommend review of this material. The chemical safety points noted below emphasize the protocols that are specifically relevant to ATAMI as an OSU facility sited on the HP campus and are not exhaustive of EH&S requirements.

Chemical Spill Response— If a spill creates an immediate threat to life or property, call 911.

In the event of a spill outside the building:

1. Close the loading dock drains (if on the east side of the building)
2. Call HP Security: 541-715-4040
3. Notify the ATAMI Response Team

Note outside spills include vehicle leakage such as from oil, gas, diesel, etc. in the parking lots.

For non-emergency spills inside the building, determine the size and condition of the spill and respond as prescribed below:

1. Small, low hazard spills:
 - a. Restrict access to the area and notify others in the area.
 - b. Use appropriate personal protective equipment and suitable spill clean-up equipment and products that are designed for the type of spilled chemical.
 - c. Contact ATAMI Response Team if you need clean-up equipment or materials.
 - d. Package, label and dispose of the waste in an appropriate manner.
 - e. Complete an Incident Report and notify ATAMI Safety Officer.
2. For larger spills that require clean-up contractor services:
 - a. Restrict access to the area, notify others in the area and move out of the area.
 - b. Call OSU EH&S: 541-737-2273
 - c. Notify ATAMI Response Team

Note if a subtenant or external user is responsible for a spill that requires outside clean-up services, the cost for those services will be passed on to the subtenant or external user.

Chemical Handling—Neill Thornton is ATAMI's Chemical Safety Officer and provides oversight of ATAMI's overall compliance with OSU EH&S protocols. Each lab also has an assigned Lab Supervisor charged with specific lab compliance. Identify and consult your Lab Supervisor on ordering, receiving, handling, labeling, storage, and disposal. Your Lab Supervisor will manage the chemical inventory for your lab, including procurement and waste handling.

For transport of hazardous materials, chemicals must be properly packaged, ideally in their original packaging (layered and leak-proof) and should not be transported together with incompatible chemicals. Transport in a university vehicle is preferred, but if using a personal vehicle, it is recommended that you confirm that your auto insurance policy covers accidents that include chemical exposure or spillage and maintain a spill remediation kit in your vehicle.

General Fab Occupation—In order to work on the fabrication floor, there must be at least two badged personnel in the building who are cognizant of each other's presence and periodically monitor each other's well-being. Safety glasses are required to be worn at all times in the Fab, Wet Chem Lab, NMR Facility/ATAMI Metrology Lab (Room 1012) and Machine Shop. Glasses are available in baskets at the south entrance to the Fab; please return glasses to the baskets after use. Video surveillance of the fab allows us to monitor tool usage for attention to facility protocols and policies. No foods or beverages are permitted in the fab.

Exhaust System—Familiarize yourself with the exhaust system gauges. Before using any exhausted tooling or fume hoods, check the magnehelic pressure gauge to ensure the exhaust system is working properly. The proper gauge reading is marked on each magnehelic. If gauge readings are below the markings, do not use the hood or tool, notify others in the area, move out of the area, and notify ATAMI staff. When working in fume hoods, do not lift the sash above the maximum safe height indicated by the EH&S sticker. Additionally, sashes should be at or below the EH&S designated height when idle to maintain exhaust balance within the facility. Under no circumstances should you adjust the exhaust ducting dampers.

Laser Exposure Hazards—Various tools in the facility present laser exposure hazards. Severe eye damage or blindness can result if safety procedures are not followed while operating the tooling. Safety glasses that attenuate the laser light must be worn when operating these tools in configurations where laser exposure is possible. Temporary visual screens are used during maintenance that requires removal of safety enclosures (maintenance to be performed only by ATAMI staff). In these instances, respect the screens and stay safely away from the area.

Ultraviolet Light Exposure Hazards—The photolithography exposure tool produces ultraviolet (UV) light. Much of the UV light is reflected and can result in severe eye and skin damage. When operating the exposure system, wear safety glasses and avoid looking at the substrate being exposed. Leave the room during the exposure. Stay in close proximity, however, to prevent others from entering the room while the hazard is present.

Tool Training—Tool-specific training is required for most equipment in the facility. All facility users must complete training and demonstrate competency to the satisfaction of ATAMI staff. Contact ATAMI staff to set up times for training and certification. See p. 6 for tool training staff contact information.

You are responsible for following proper procedures and protocols when operating ATAMI tooling. Leave tooling in condition for subsequent users. Good housekeeping practices are mandatory. Please report a

need for supplies or maintenance to ATAMI staff. All repairs to tooling must be performed by ATAMI staff only. ATAMI may regulate access to high-use tools to ensure reasonable access for all users.

Design studio usage—The design studio computers are intended for design and modeling work. Some applications are licensed for use by academic users only. Contact ATAMI IT Administrator Keith Price (keith.price@oregonstate.edu) for additional information.

Badges—ATAMI badges serve several purposes: to permit access into the building, facilitate monitoring of the building, and track tool usage and project hours. Please wear your badge so that it is visible, whether on a lanyard or clip. Protect your badge from small electronic devices that can interfere with the RFID technology. Your ATAMI access badge is specifically issued to you only. Do not lend your badge to anyone. If you lose or misplace your badge or when you no longer need access to the facility, please notify ATAMI staff immediately so that the badge can be de-activated.

Usage Reporting—Logging tool use time in the ATAMI Resource Tracking System is mandatory. If there are errors in the project or tooling selections under your user profile, please let ATAMI staff know.

Tool and Conference Rooms Reservations—Using your email address as the credential, tools and conference rooms can be reserved at <https://secure.engr.oregonstate.edu/mbi/resources/day.php?>

Please note that reserving a tool, which is offered as a convenience, and reporting tool usage in the Resource Tracking System are completely distinct actions. Tool reservation is at your discretion; usage reporting is mandatory.

Information-Sharing—You will receive periodic emails from the "ATAMI-News" listserv with updates relating to facility power outages, tools that are off-line and other news of that sort. If you become aware of any unsafe condition in the facility, please alert an ATAMI staff person immediately.

Kitchen/refrigerators/microwave—Please clean up after yourself, as the custodial service does not wash dishes. A food refrigerator and microwave are downstairs in the kitchen area and another microwave upstairs by the coffee station. The refrigerator is cleaned monthly by the custodial service; a schedule is posted on the refrigerator. Please keep up with the food you put in the refrigerator and don't leave things in there to spoil. There are also two chemical refrigerators downstairs in the Wet Chem. Do not put food in the chemical refrigerators or vice versa.

Recycling and Trash—Locations and Types

West Wall North of Lobby

- Commingled Recycling: Clean paper products, water bottles and food containers, light metal (paper clips, staples). No refundable cans/bottles here, please—please restrict these to bin in kitchen next to soda machine.
- Polystyrene: Clean styrofoam, packing peanuts
- Trash
- Cardboard—please flatten boxes
- Refundable Cans/Bottles

South of Machine Shop

- Metal (If you have questions about what constitutes scrap metal, ask Neill Thornton.)
 - o Copper

- o Aluminum
- o Other waste metal
- Standard cell batteries. Note: We do not offer recycling for device batteries.
- Aerosol cans
- Fluorescent tubes and compact fluorescent bulbs

Kitchen Area

- Refundable Cans/Bottles: A bin for refundable cans and bottles is next to the soda machine. Do not place anything else in this bin, and do not place refundable cans and bottles anywhere else. Refundable cans/bottles are donated to local youth organizations in cooperation with HP Inc.'s donation program
- Organic Waste: For organic waste that is especially attractive to fruit flies, there is a marked receptacle below the kitchen area counter.

Other

- Cubicles and offices have black and blue bins for trash and commingled recycling, respectively. At the 2nd floor copy station, there is a rolling cart for confidential recycling and a cell battery recycling bin.

Other—General Safety—Extension cords pose a fire hazard and are appropriate for very short-term use only. Surge-protected multi-outlet power strips with a fuse or reset button are acceptable substitutes if they are used sensibly; they should never be used for heaters or any appliance or device with high current draw.

Coffee and Tea—Coffee and tea are free for subtenants and meeting attendees. The cost for non-subtenant external users and OSU employees and students is \$0.25 and \$0.10 per cup respectively for coffee and tea. Please put your contribution in the kitty at the coffee station.

Highbay Equipment, Tools, Parts, Supplies—All materials and equipment in the ATAMI facility are property of ATAMI or of individual academic or tenant labs. Do not move, remove or borrow anything without the specific consent of the owner. This area, as all others in the facility, is under 24-hour video surveillance.

Smoking—The only permitted smoking area is the walkway southwest of the building.

ATAMI Staff

- Danielle Clair (danielle.clair@oregonstate.edu), Manager, Facility and Business Operations
- Todd Miller (rtm@oregonstate.edu), Prototyping and Process Development Manager
- Keith Price (keith.price@oregonstate.edu), Departmental Computer Administrator
- Neill Thornton (neill.thornton@oregonstate.edu), R&D Engineering Specialist and Chemical Safety Officer
- Nick Wannemacher (nick@engr.orst.edu), R&D Engineering Specialist
- Joe Bergevin (joe.bergevin@oregonstate.edu), R&D Engineering Specialist
- Randy Greg (randal.greb@oregonstate.edu), R&D Engineering Specialist
- Brandon Mahle (mahleb@oregonstate.edu), Student Operations Assistant
- Caitlin Bethmann (bethmanc@oregonstate.edu), Student Operations Assistant
- Will Putnam (putnamw@oregonstate.edu), Student Machine Shop Assistant

Tool Training

Contact the point trainer below to schedule training on the tools that you will require access to. After your trainer has certified that you have acquired proficiency and can safely operate a given tool alone, you may begin reserving and using that tool. Again, recording tool usage is mandatory.

Please feel free to ask questions at any step along the way. If you need assistance with ATAMI resources that are not listed above, please consult with Neill Thornton or Todd Miller.

Will Putnam, putnamw@oregonstate.edu
Taylor Amarotico, amarotit@oregonstate.edu

- LPKF Protomat

Will Putnam
putnamw@oregonstate.edu

- Machine Tools—Grinder, Lathe,
Haas CNC, Manual mill

Joe Bergevin
joe.bergevin@oregonstate.edu

- Asymtek Dispense
- Avantes UV-Vis
- Carver Press
- CM tube furnace
- DSC/TGA
- Jenoptik Nanoimprinter
- M2000 Ellispometer
- Photolithography Cell
- Sputter Tool

Nick Wannemacher
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- Gas Chromatograph

Randy Greb
randal.greb@oregonstate.edu

- CamCo Brazing Furnace
- Cressington
- Hitachi SEM
- Instron Mechanical Tester
- LPKF Microline Laser
- Metallography Station
- Optical Microscopes
- ZeScope Profilometer

Todd Miller
rtn@oregonstate.edu

- Vacuum Hot Press

Neill Thornton
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- Rofin Laser Welder/Cutter