

# Autoclave and Radiation Safety

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# Autoclave Use

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- ❖ Used to sterilize growth media, reagents, and laboratory apparatus
- ❖ Used prior to disposal of microbial cultures for control of biohazards
- ❖ Works with building steam
- ❖ 15-30 psi pressure
- ❖ 120-135 °C

# Guidelines for Autoclave Use

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- ❖ Be careful about high heat and pressure
  - Do not attempt to open the door while the system is pressurized
  - Stand back from the door when it opens at the end of a run
  - Many surfaces in the unit are hot
  - Wear protective gloves and avoid contact
- ❖ Clean the unit after use, especially if there is broken glass or other solid materials which may block the drainpipes
- ❖ Never leave DoGEE/Ames Hall with the autoclave in operation
- ❖ Contact Katie Onesios (Ames 508, x66579; [konesio1@jhu.edu](mailto:konesio1@jhu.edu)) for specific questions and instructions about the autoclave operation

# Radiation Safety

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- ❖ We have a formal and organized program to deal with radioactive materials
- ❖ The university follows Maryland and Federal regulations
- ❖ Our goal is to insure that the exposure of individuals to radiation is kept as low as possible (and certainly within regulations)
- ❖ The ultimate responsibility for radiation safety lies with each one of us!

# Contact Information

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- ❖ JHU Radiation Safety Officers
  - Stan Wadsworth (HSE), 410-955-3710
  - Mina Razavi (Macaulay Hall), x67278
- ❖ Licensee
  - Ed Bouwer (Ames 307/312), x67437;  
*bouwer@jhu.edu*
- ❖ Student Assistants
  - Katie Onesios (Ames 508), x66579;  
*konesios1@jhu.edu*
  - Jin Yang (Ames 505), x65527; *jyang61@jhu.edu*
  - Yaqi You (Ames 317), x67112; *you.yaqi@jhu.edu*

# Responsibilities

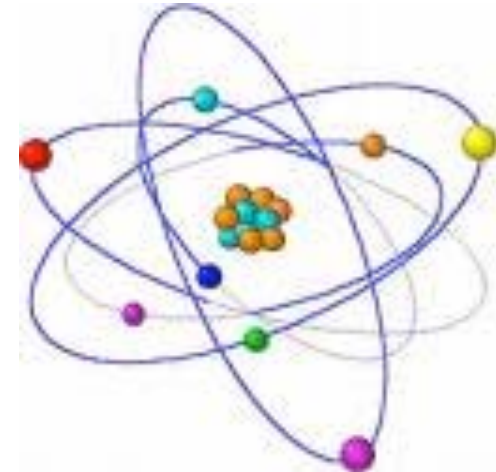
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- ❖ Radiation Safety Officers
  - Enforce the rules, provide training, and accept radioactive waste
- ❖ Licensee
  - Comply with rules 24/7, provide training and supervision to workers, and maintain proper records
- ❖ Individual
  - Safe handling of radioactive materials so that the cumulative annual dose is kept below 100 millirem.
  - Follow good laboratory practice

# General Guidelines

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- ❖ Read the JHU Radiation Safety Manual
  - Contains procedures, suggestions for handling radionuclides, and methods to calculate and limit exposures
- ❖ Attend JHU Radiation Safety Training session
- ❖ Become familiar with the characteristics and hazards of the radionuclide being used
  - Alpha, beta, or gamma emitter
  - Decay half-life
  - Radiation energy
  - Biological half-life
  - Shielding/protection options



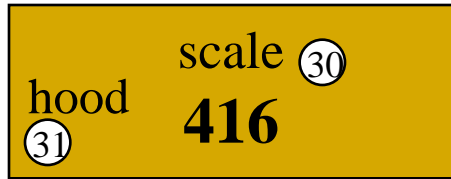
# Good Housekeeping

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- ❖ Weekly the labs are “wipe-tested” to spot check for radioactive sources and spills.
  - See map and printed sheet for locations
- ❖ Use survey meter to check for radioactive contamination (if applicable)
- ❖ Signs and radioactive tape are used to clearly mark where radioactive materials are used
- ❖ All spills of radioactive material must be immediately contained and proper decontamination carried out
- ❖ Report all spills to Radiation Safety
- ❖ Keep accurate records of receipt, transfer, and disposal of radioactive materials
- ❖ Follow the printed document on “Radioactive Waste Disposal Procedures”



# Weekly Radiation Wipe Test

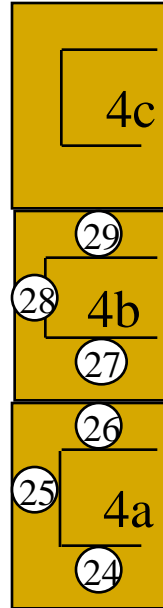
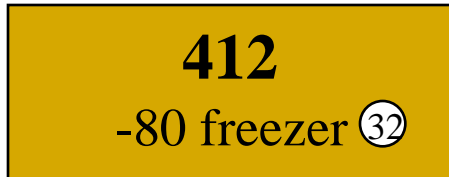


## Ames Hall



**Note:** Ames 409 will be wipe tested weekly. All other locations will be wipe tested weekly only when they are actively being used for radioactive research and immediately thereafter.

① Blank



Environmental Chambers

