

# Environmental Health & Safety

## SafetyMatters

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### ENVIRONMENTAL HEALTH & SAFETY

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## Meet Your Safety Advisor Team

by Marcus Johnson, Associate Manager, Research Safety Operations



Environmental Health and Safety's Research Safety Operations team is Columbia University's go-to resource for regularly scheduled services such as chemical fume hood certifications, laboratory safety trainings, as well as on-demand services e.g., equipment clearances and indoor air quality investigations. The research community will see the Safety Advisors on the Operations Team in laboratories assisting with Radioactive Material audits, Biosafety Cabinet inspections, or escorting FDNY and other governmental agency inspectors. Please feel free to reach out to the Operations Team if you have any questions regarding fire safety, chemical segregation, or completing your Laboratory Assessment Tool and Chemical Hygiene Plan (LATCH).

Researchers can contact any Safety Advisor by emailing [labsafety@columbia.edu](mailto:labsafety@columbia.edu).



When working in the laboratory: eating, drinking or applying cosmetics is prohibited.

Proper work attire (e.g., long pants, closed toe shoes) and PPE (e.g., laboratory coat, gloves and eye protection) must be worn when working in the laboratory.

Remember to periodically flush your laboratory cup sinks and floor drains with water to prevent odors from migrating into your laboratory.

Have you seen our new and improved website?  
<https://research.columbia.edu/content/environmental-health-safety>

For Lab Fire Safety Prevention tips, check out FDN(wh)Y Me  
<https://research.columbia.edu/content/fdnwhy-me>

## New (No) Dosimeter Packaging

by Eva Neumannova, Dosimetry Associate

Effective October 2018, Landauer, Columbia University’s radiation dosimetry vendor has changed the packaging of their radiation monitoring badges. The dosimetry badge will no longer come individually wrapped. Instead, badges are provided to laboratories or departments in bags (up to 10 badges per bag) with participant names printed on the outside for identification (see Picture on the right). In some cases, depending on department, the badges may have already been removed from the bags for distribution.



There is also a slight change to the badge itself. There is a small disposable plastic tab on one side of the badge, which must be removed before the badge can be clipped into the holder. See picture below. Landauer will consider dosimeters with the tab removed as “used.” Conversely, any dosimeters with an intact tab will be considered “unused”; previously this distinction was made based on whether the dosimeter was removed from its individual wrapping.

Procedures for wearing and returning dosimeters are unchanged. All dosimetry badges must be returned within 22 calendar days of the end of the wear period. Once new badges are received and distributed by a lab manager, old badges should be returned to the dosimetry coordinator in person or through inter-office mail as soon as possible. The wear dates are printed on the front of the badge, under the user’s name. Once the wear period ends, please

### Remove the Luxel®+ dosimeter tab completely

Make sure the tab at the top of the dosimeter<sup>(®)</sup> is completely removed by wiggling it back and forth to break off the plastic seal. Discard the tab.

Entirely removing the tab<sup>(®)</sup> signals that the dosimeter has been worn and is ready for analysis. Tabs that are only partially removed can create confusion and add processing time.



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remove the badge, keep the grey holder, and return the badge to Radiation Safety. It is important to wear dosimeter badges in the correct month to appropriately monitor the radiation dose. Doing so ensures that the University can accurately monitor all users, in compliance with relevant regulations.

For any questions or concerns, contact [badges@columbia.edu](mailto:badges@columbia.edu) or 212-305-0303.

## Summer is Here: Be Cool with Proper Laboratory Attire



Yes  
Long pants  
Closed toe shoes  
+  
Lab Coat  
Gloves



No  
Shorts  
Sandals/Flip  
Flops

<https://research.columbia.edu/sites/default/files/content/EHS/Policies/PPEPolicy.pdf>

## Children and Minors in University Laboratories

by Research Safety

As summer approaches, EH&S would like to remind the Columbia University research community about the University's policy regarding the presence of children and minors in laboratories.

*No one under the age of 14 is allowed into a Columbia University Laboratory at any time, unless present on an organized tour or field trip for strictly observational purposes. (Even if a child is under the supervision of a parent or guardian, their presence is strictly prohibited.) In addition, no one under the age of 18 is allowed to handle human blood, human cell lines or "other potentially infectious materials," research animals, or be left unattended in a lab.*

Please note, children are also prohibited from offices that are located within a laboratory. Safety in University research operations is a top priority and is the driver for this policy. EH&S thanks you in advance for your understanding and continued cooperation in promoting and maintaining a safe and healthy workplace.

For more information, please refer to page five of the Guidelines for Short-term Visitors in Research-related and Clinical Activities located @

[https://research.columbia.edu/sites/default/files/content/EVPR/Policies/Guidelines\\_for\\_Short-term\\_Visitors.pdf](https://research.columbia.edu/sites/default/files/content/EVPR/Policies/Guidelines_for_Short-term_Visitors.pdf)

## Good Housekeeping

by Christopher Pitoscia, Manager, Research Safety Programs

*According to the National Academies' comprehensive reference on laboratory safety practices, "Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards" ("Prudent Practices"), good housekeeping in the laboratory can reduce chemical hazards, control laboratory risks, improve laboratory security, and even benefit research integrity. While it can be subjective what exactly constitutes "good housekeeping", the benefits are universally agreeable. Proper housekeeping practices should be part of all laboratories' daily routines at Columbia University as maintenance of a clean and orderly laboratory is easier - and safer - than periodic intensive cleaning efforts.*

Simply put, a clean and orderly lab is self-evident. As a guide, Prudent Practices lists 18 rules of good laboratory housekeeping, and many overlap with associated compliance concerns and potential violations from regulatory authorities, such as the Fire Department of the City of New York (FDNY). For example, common FDNY findings related to chemical storage and labeling can largely be avoided by properly labeling and storing chemical containers, secondary containers, and transfer vessels in a neat and orderly fashion. When chemicals are stored to be viewable and locatable, the benefits of good housekeeping are obvious: safety information is readily available and supply stocks can be easily evaluated. More generally, keeping work areas, including floors, clean and uncluttered reduces the risk of spills, slips, trips, and falls, as well as prevents potential exposure to respiratory hazards and even injury from sharp objects that might be obscured from view. Return chemicals and equipment to their designated storage location at the conclusion of experimental work or at the end of the day. This reduces the opportunity for misplacement and breakage, and in the case of chemical fume hoods, ensures proper operation by minimizing turbulence and airflow blockage.

Common areas warrant special consideration. All too often, these spaces are neglected due to an attitude that someone else will address housekeeping and safety issues. Users of common spaces and facilities such as darkrooms, tissue culture rooms, or refrigerator/freezer/equipment storage areas should all do their part to leave spaces in good condition for the next user or occupant.

Finally, EH&S is always available to help. If excess chemicals are at risk of accumulating in the lab due to student or staff departures or general decline in use, arrange for disposal to free up space. If general clutter is a problem, contact a Safety Advisor for assistance with facilitating removal of obsolete laboratory equipment and materials. Additionally, arrangements can be made with Facilities for disposal of municipal waste, recyclables, and other general items.

Remember, a "definite correlation exists between orderliness and the level of safety in the laboratory," according to Prudent Practices. A clean lab is a safe, productive and compliant lab. Please reach out to EH&S with any questions or concerns about laboratory housekeeping at [labsafety@columbia.edu](mailto:labsafety@columbia.edu).

## New Rascal Appendix System is Here!

by Remi Dosunmu, Associate Manager, Biological Safety Programs

Have you heard the good news? Rascal, in partnership with EH&S, launched the new Hazardous Materials Appendix Module in May 2019. A huge thanks goes to the many researchers who provided valuable input to make improvements to the system.

The attachment of an Appendix to an IACUC or IRB protocol or for direct submission to EH&S is required for research involving *in vivo* (or in some cases *in vitro*) use of hazardous chemicals, biological agents, controlled substances, lasers, and/or radiation. One important note is that new Appendices must be created to reflect hazardous materials work for new submissions, renewals, or modifications. Previous Appendices will not be lost, but will be available as a “snapshot” PDF for reference in My Rascal.

There are many bells and whistles in this upgrade, including the Researcher Profile page, Correspondence platform within Rascal, PI attestations upon submission, and validation checks. For step-by-step guidance on how to create Appendices or additional information on new features, please visit EH&S’ website: <https://research.columbia.edu/new-hazardous-materials-appendix-system-rascal>. As illustrated below, there are several “How-To” documents with screenshots and instructions to assist users during this rollout. EH&S welcomes any and all feedback during this transitional period.

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## New Hazardous Materials Appendix System in Rascal

How to Create Appendices:

- How to Create Appendices and attach to IACUC protocol
- How to Create Appendices for in vitro protocol
- How to Create Appendices for NYSPI protocol (non-Columbia IACUC)
- How to Create Appendices and attach to an IRB protocol
- How to create an Appendix M and attach to IRB protocol

The Hazardous Materials Appendices in Rascal have been updated in Spring 2019. This affects research that involves *in vivo* (or in some cases *in vitro*) use of hazardous chemicals, biological agents, controlled substances, lasers, and/or radiation, which requires the attachment of an Appendix to an IACUC or IRB protocol or for direct submission to EH&S Safety Officers.

New Appendices must be created to reflect hazardous materials work for new submissions, renewals or modifications. Old Appendices will not be lost: they will be available as a “snapshot” PDF for researcher’s reference.

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## Spotlight on Safety – The New User-Friendly RAM Module

by Laszlo Virag, Senior Safety Analyst II

The Radioactive Material (RAM) Module in the Laboratory Information Online Network (LION) was created with the central goal of moving the recordkeeping of radioactive materials and all associated administrative requirements into the digital age. The changes are intended to reduce the burden on the laboratory staff and Principal Investigators and streamline EH&S oversight. Not only is the RAM Module meant to be user-friendly, but also sustainable by eliminating the use of paper logs. All information is now under the “same roof”: from radioactive material permits, and RAM inventory and waste management documents to mandatory personnel training records, and radiation safety audit findings and corrective actions. *SafetyMatters* spoke to Dr. Luke Berchowitz and his Laboratory Safety Manager, Sarah Rosa, about their experiences using the RAM Module.

**SafetyMatters:** Would you briefly describe the research project(s) in your laboratory, including the use of radioactive chemicals and the Laboratory’s interface with EH&S?

**Berchowitz Lab:** The primary focus of our lab is to understand the pathways and mechanisms that cells have developed to regulate the formation and clearance of amyloid and amyloid-like assemblies. We are also interested in understanding the physiological functions of these assemblies particularly with regard to their roles in RNA biology. Lastly, we are working to understand how cells post-transcriptionally repress retrotransposon mRNA during germline development. Since all of the projects in our lab involve RNA analysis, we often use Northern blot to assay the size and abundance of specific RNA molecules in our samples. To do this, we need to generate radioactively-labeled oligonucleotide probes using phosphorus-32 ( $^{32}\text{P}$ ). Furthermore, we use  $^{32}\text{P}$  in end-labeling reactions to assay the amount of free 3’ RNA ends in pulldown experiments prior to library preparation for sequencing. Our lab also conducts kinase assays in which we use  $^{32}\text{P}$  to label and quantify kinase-substrate interactions. Our interactions with the Radiation Safety Team mainly consist of quarterly inspections and RAM waste pickup. In either type of interaction, the Radiation Safety Team is always eager and helpful in ensuring lab safety.

**SafetyMatters:** Tell us about your experience implementing the RAM Module.

**Berchowitz Lab:** Although the RAM module of the LION system has not affected our use of RAM within the lab, it has provided numerous advantages in regards to communication and maintenance. The module allows for ease in communication with the Radiation Safety Team for waste pickup requests and addressing results from an inspection. Furthermore, having a centralized electronic database has assisted in maintaining RAM users up-to-date with their educational requirements.

**SafetyMatters:** Is there any feature of the RAM module that proved to be most useful?

**Berchowitz Lab:** The module has provided an electronic repository of our RAM stock and usage with real-time half-life concentrations. The module has not directly affected our day-to-day experimental work, which we consider to be a positive aspect.

*SafetyMatters* would like to thank Dr. Berchowitz and Sarah Rosa for sharing their experiences with the RAM Module. For more information on the RAM Module, and how to use LION to manage records of RAM permits, RAM inventory, and RAM waste visit our website at: <https://research.columbia.edu/laboratory-research-radiation-safety>.

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