



# Module 1

# Radiation Safety at LSU

# LSU Radiation Safety Program

The LSU radiation safety program will be conducted in such a manner so that exposure to faculty, staff, students, the public, and the





# Topics Covered In This Module:

- #Radiation Safety Office (RSO) Personnel,
- #Becoming a Radiation User,
- #Ordering and Receiving of Radioactive Materials,
- #Laboratory Audits,
- #Laboratory Surveys,
- #Annual Radiation User Fees.



# Radiation Safety Personnel



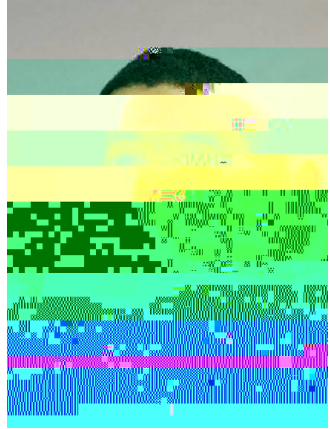
# Campus Radiation Safety Committee:

- ‡VINCENT L. WILSON, Chair vEnvironmental Sciences; 578-1753; vwilson@lsu.edu,
- ‡JEFFREY C. BLACKMON vPhysics and Astronomy; 578-7283; blackmon@lsu.edu,
- ‡PATRICK J. DIMARIO vBiological Sciences; 578-1512; pdimari@lsu.edu,
- ‡GINESSE A. LISTI vGeography and Anthropology; 578-4775; glisti1@lsu.edu,
- ‡MICHAEL HOOKS (Ex-Officio) vOffice of Environmental Health and Safety; 578-5640;  
dhooks@lsu.edu,
- ‡YONG-HA KIM vEnvironmental Sciences; 578-4295; yonghakim1@lsu.edu,
- ‡JOHN H. PARDUE vCivil and Environmental Engineering; 383-0044; jpardue@lsu.edu,
- ‡JENNIFER C. ROOD vPennington Biomedical Research Center; 763-2524; roodjc@pbrc.edu,
- ‡ERIN OBERHAUS vAnimal Sciences; 578-5307; eoberhaus@agcenter.lsu.edu,
- ‡WEI-HSUNG WANG vRadiation Safety Office; 578-2743; weihsung@lsu.edu,
- ‡MASAMI YOSHIMURA vComparative Biomedical Sciences; 578-9759; fukugawa@lsu.edu.

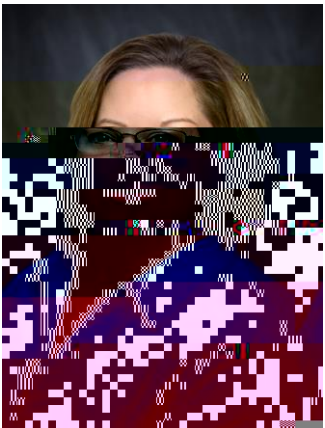




## Radiation Safety Office



Radiation Safety Coordinator  
Nicholas Desselles, M.S., CLSO

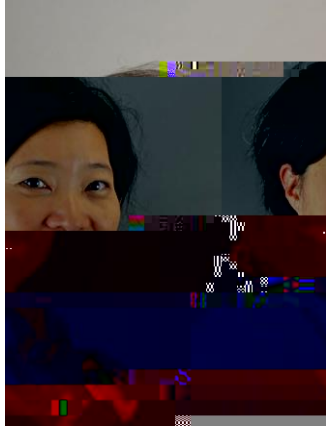


Administrative Coordinator  
Melissa Esnault





## Radiation Safety Office



CAMD Radiation Safety Officer  
Ji Young Wiley, M.S.



# Becoming a Radiation User



## Steps to Take to Become Radiation Users:

- #Review the online training modules found at [Training | Radiation Safety Office \(lsu.edu\)](https://www.lsu.edu/radiation-safety-office/training),
- #Take Radiation Safety Exam at the Radiation Safety Office (by appointment only),
- #Fill out the Radiation Worker Application and submit it to the RSO.



# Training is Required for All Users of:

- ‡Open Isotope,
- ‡Radiation Producing Equipment,
- ‡Sealed Sources,
- ‡Animal Experimentation.



# For All Radiation Users

‡Core Material † Required for ALL Radiation Users

‡Module 1. Radiation Safety at LSU,

‡Module 2. Fundamentals of Basic Radiation,

‡Module 3. Biological Effects of Ionizing Radiation,

‡Module 4. Regulations and Standards,

‡Module 5. Exposure Control and Personnel Monitoring.



## For Open Isotope Users:

‡Core Material,

‡Open Isotope:

‡Module 6. Radioactive Waste Handling, Storage and Disposal,

‡Module 7. General Rules of Radioactive Material.



# For Radiation Producing Machines Users

‡Core Material,

‡Radiation Producing Machines (i.e., X-ray equipment):

‡Module 8. General Rules for Radiation Producing Machines.



# For Sealed Sources Users

‡Complete Core Material,

‡Sealed Sources:

‡Module 9. General Uses for Field Use of Sealed Sources.





# For Animal Experimentation

‡ Complete Core Material,

‡ Open Isotope (Modules 6-7),

‡ Animal Experimentation:

‡ Module 10. General Rules † Animal Experimentation.

# Becoming Authorized Users

Individuals who wish to use sources of radiation in research, development, teaching, clinical, or demonstration projects must obtain prior approval from the Radiation Safety Office:

- ‡ Radiation User Application must be submitted for approval,
- ‡ Once approved, an Approval Letter will be issued outlining:
  - ‡ Lists of approved isotopes and/or radiation producing equipment,
  - ‡ Lists of maximum activity of each isotope that can be ordered,
  - ‡ Lists of maximum activity of each Isotope that may be in the Laboratory,
  - ‡ Lists of approved laboratory locations.



# Ordering and Receiving of Radioactive Materials



# Ordering Radioactive Material

† Only persons who are approved users can order radioactive material,

† ☉ } ☉ • u μ • š ] v o μ š Z W / [ • v u v u μ

Radiation Safety Office at:

**Radiation Safety Office**

**112 Nuclear Science Building**

**Louisiana State University**

**Baton Rouge, LA 70803-5820**

† All improperly addressed packages will be rejected and returned to sender.



# Receiving of Radioactive Material

‡Once the package is received at the RSO:

‡The RSO will assign a unique log number to track radioactive material from receipt to disposal (cradle to grave),

‡The RSO will also perform a check for contamination on the package.

‡Once the RSO has checked-in the package:

‡The approved radiation PI is notified,

‡Then the PI or his/her approved personnel can pickup the shipment and sign for it at the Radiation Safety Office:

‡NOTE: Radiation symbols and labels must be completely defaced before disposal of used packaging



# Laboratory Audit

# Laboratory Audits

# In-Laboratory Training (see the Radiation Safety Manual)

Every person who frequents a laboratory where radioactive material is stored or handled must have ANNUAL training covering at least the following:

- ‡No eating and drinking (excludes laboratories only using radiation producing machines),
- ‡Security of sources of radiation,
- ‡



# Common Violations

- ‡ Eating and drinking in open/sealed source laboratories,
- ‡ Leaving radiation producing equipment and/or radioactive material unsecured,
- ‡



# Consequences for Violation

## ‡Initial Violation:

‡Principal Investigator will be placed on probation for one year (or longer) in accordance with PS-99.

## ‡Violations while on Probation:

‡Principal Investigator will lose privileges to use radioactive material and/or sources of radiation.



# Laboratory Survey



# Routine Survey

- # The Radiation Safety Office surveys each laboratory where open-source radioactive material is used or stored every 3 months.
- # A notice is sent when acceptable activity level ( $100 \text{ pCi}/100 \text{ cm}^2$ ) is exceeded.



# In-Laboratory Survey

‡In-laboratory surveys must be conducted every time 0.5 mCi of a radioactive material is handled by a radiation worker in the laboratory,

‡The results of In-laboratory surveys must be kept and documented in the laboratories copy of the Radiation Safety Manual.



# Annual User Fee





## What is provided with the Annual User Fee?

- ‡Contamination and/or other radiological surveys,
- ‡Radiation Badges (up to 5), if applicable,
- ‡Waste pick up and storage of short-lived radioactive waste,
- ‡Assure compliance with Federal, State, and University regulations.





# What is NOT Covered Under the Annual Radiation User Fee?

- #Registration fee charged by the State on X-Ray machines,
- #Disposal of long-lived radioactive waste,
- #Removal and disposal of sealed sources in gas-  $Z \text{ } \text{O} \text{E} \text{ } \}$  u  $\check{s} \text{ } \}$  P  $\text{O} \text{E} \text{ } \%$  Z •
- #Removal of radioactive standards from liquid scintillation counters  
~ > ^ [ • • U
- #Miscellaneous fees which would be discussed at the time of approval of the Radiation Use Application.



## Contact Information:

Radiation Safety Office  
112 Nuclear Science Building  
Louisiana State University  
Baton Rouge, LA 70803  
Office # 225-578-2008  
Email: [ahamid1@lsu.edu](mailto:ahamid1@lsu.edu)