Introduction

Letter from the Director

Welcome to the eleventh annual report of the UNC Department of Environment, Health, and Safety and Risk Management. This report is our mechanism for communicating the activities of the EHS and Risk Management departments and how our work supports a safe campus. We continue to generate a culture that is both performance-oriented and customer-focused. As a service organization, we value communication, collaboration and customer service. These three C’s drive a safety culture and support the mission of the University.

Our equation for Safety Culture, which supports the mission of the University, is:

Mary Beth Koza,
Executive Director,
Environment, Health and Safety and Risk Management
Our programs are designed to provide knowledge, service and accountability. Accountability is a critical component of a proactive safety culture. Our University safety committees are instrumental in this endeavor, and their activities and accomplishments can be seen on the Committees page.

Our commitment to continuous improvement is demonstrated in our Plan-Do-Check-Act (PDCA) management system, which provides a framework of policies, processes and procedures. It helps provide the structure of how the people, the information and the technology are integrated, and it provides our students with a unique learning experience.

This year, we launched the “Flag the Hazard” campaign, since providing a safe work environment is the main driver of our work. Without collaboration and communication with all the members of our campus community, it would not be possible. Throughout this report you will see specific examples that demonstrate the diversity of our operations.

I continue to invite every individual to utilize the process of hazard evaluation in all your activities, whether personal or work-related. Approaching every task with self-awareness, deliberation and caution are elements of accident prevention that can provide all of us with safer and healthier lives.

Please take the time to review this report and learn something new. This report would not be possible without the dedication
to excellence and collaboration the staff strives for daily. As a team, we take great pride in our accomplishments and in contributing to the health and safety of one of the world’s leading academic and research institutions and the oldest public university.

We also recognize and commend our fellow Tar Heels. It is their commitment to health and safety, their collaborative spirit, and their pride in being part of a great University that makes UNC-Chapel Hill a safe and healthy place to teach, learn and serve.

Mary Beth Koza, Executive Director
Environment, Health and Safety and Risk Management

Who We Are
Administration

Mary Beth Koza  
Executive Director, Environment, Health and Safety and Risk Management

Amy Butler  
Dosimetry Technician

Rashad Carlson  
Administrative Assistant

Occupational and Environmental Hygiene

Taylor Moore  
Industrial Hygienist

Kim Haley  
Industrial Hygienist

David Catalano  
Occupational/Environmental Field Hygienist

Biological Safety

Garry Coulson, Ph.D.  
Biological Safety Officer/Manager

Jessica Poole, M.S.  
Associate Biological Safety Officer

Erika England  
Biological Safety Specialist

Chad Pleasants  
Biological Safety Specialist

Eric Lewis, Ph.D.  
Biological Safety Specialist

Radiation Safety

Roger Sit PhD, CHP  
Radiation Safety Officer

Bradford Taylor, M.S.  
Associate Radiation Safety Officer

Jonathan Moore, M.S.  
Associate Radiation Safety Officer

Mark Brueckner  
Associate Radiation Safety Officer

Stephen Guarino  
Cyclotron Health Physicist

Sharn Jeffries  
Lead Health Physics Technologist

Chemical Safety

Catherine Brennan  
Health Physics Technologist
EHS Organization

Each service section within EHS has unique and specific management duties and responsibilities that are determined by any number of compliance requirements, state and federal regulatory agencies, university policies, industry standards, and a commitment to going beyond compliance, when possible, to ensure a safe and healthy campus, community and state.

Biological Safety

Biological Safety provides guidance, assistance, and surveillance over research activities involving biohazardous agents, recombinant DNA, bloodborne pathogens, and biohazardous waste management. Biological Safety monitors and reviews the performance and maintenance of laboratory containment systems and provides technical support to EHS incident responders.

Chemical Safety

The main function of the Chemical Safety section is to manage the process of improving safety through education, compliance, and the constant task of identifying and evaluating potential safety hazards in order to reach the destination of a safe research laboratory environment. Because the breadth and depth of UNC research is always expanding, the process of safety improvement is ongoing and ever-changing, providing daily challenges to support the research process.

Environmental Affairs

The Environmental Affairs section proactively manages the environmental permitting of the campus and ensures compliance with the increasing number of permits required by state and federal agencies. The section has responsibility for oversight of underground/above ground storage tank management, air quality permits (Title V), water quality (NPDES) permits, surface water quality, storm water management, wetland issues, environmental assessments at inactive waste sites, collection of radioactive and hazardous materials/wastes from campus, and operation of the Hazardous Materials Facility (a fully permitted Treatment-Storage-Disposal facility), and the storage-for-decay program for short-lived radioactive wastes.

Fire Safety & Emergency Response

Fire safety management includes six functions: inspections, enforcement, education, engineering, fire investigation, and
response. With 438 buildings on campus and a wide range of potential fire safety risks, EHS personnel are constantly checking fire related equipment, running test alarms, and assessing egress risks. The section provides student and employee fire education so that safety becomes a collaborative effort and a fire safety culture becomes the norm.

**Occupational & Environmental Hygiene (OEH)**

OEH ensures that indoor campus environments are conducive to good health and well being by recognizing evaluating and controlling health and safety hazards, using knowledge and experience in industrial hygiene, asbestos management, air and water quality and safety engineering. OEH assesses potential safety hazards, possible instances of exposure and suitability of protective equipment. Working with facilities engineering and facilities services personnel to keep historical buildings functional, while protecting employee health, and working with planning, construction and startup of new and renovated buildings to anticipate building health issues.

**Radiation Safety**

Radiation Safety integrates education, oversight, compliance, service and consultation to protect students, staff, the general public and the environment from the effects of both ionizing and non-ionizing radiation. Implicit in all aspects of radiation safety is security. Safety and security are accomplished through training, inspection, licensing, registration and controlled access to certain materials.

**University Employee Occupational Health Clinic (UEOHC)**

The University Employee Occupational Health Clinic provides occupational health care services to all part-time, full-time, and temporary employees of the University of North Carolina at Chapel Hill. The UEOHC directs medical care for all workplace injuries/illnesses. The Clinic provides pre-employment screening, annual immunization reviews, and medical surveillance for healthcare and non-healthcare workers.

**Workplace Safety**

Workplace Safety provides services in the areas of ergonomics, respiratory protection, safety training, industrial maintenance and construction safety, clinical safety, medical surveillance, Workers’ Compensation, and the Safety Management
Information System. The diversity of services provided by the Workplace Safety section supports the University's overall mission of teaching and research for both academic and non-academic divisions.

**Risk Management**

Risk Management Services is responsible for overseeing the majority of the University’s insurance programs, from purchasing the appropriate coverage to adjusting insurance claims. Some of these programs are state-administered, requiring us to serve as the liaison between the University and the State of North Carolina.
EHS Management System

How We Do It

With the breadth and depth of UNC research always expanding, the process of EHS compliance management is ongoing and ever changing, requiring a robust and adaptive management system. In 2018, the department continued to utilize an integrated management system for the University's environment, health, and safety compliance programs. This effort was designed to ensure continuous improvements by incorporating a process of ongoing monitoring, reviews, and revisions of procedures and policies through the use of the Plan – Do – Check – Act (PDCA) model. Just as a circle has no end, the Plan – Do – Check – Act cycle is a four-step process model for carrying out change, cycling through each step for continuous improvement.

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<td>Strategic planning process</td>
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The EHS organization continues to develop and implement tools and processes to proactively assist the campus in the areas of regulatory compliance for biological safety, chemical safety, radiation safety, controlled substances, export shipping controls, occupational safety, environmental permitting, fire/life safety, and emergency response. Monthly reporting metrics as well as the University’s safety committee structure support this process. A critical component of the management system is having the staff perform compliance verification and utilize this data for planning. Understanding and expertise in the science is essential to the development of a management compliance system.
Why We Do It

Mission Statement

The University of North Carolina at Chapel Hill department of Environment, Health & Safety supports the University’s core mission of teaching, research, and service by providing comprehensive environmental, health, and safety services to the University community. This includes education through training and consultation, maintaining a safe environment through recognizing and controlling health and safety hazards, ensuring a process of regulatory compliance, and minimizing future potential liabilities.

Mission of the Organization

- Provide a safe work place.
- Ensure a process of compliance.
- Minimize future potential liabilities.

Values of the EHS Organization

- Use time efficiently.
- Be a resource for new ideas.
- Connect to us relationally.
- Stay with us on the journey through all twists and turns.
- Establish state of the art safety and environmental protocols and procedures.
- Enable us to be all we can be.
EHS Mottos

- Be All You Can Be.
- Strive Towards Excellence.

Core Diversity Values of the University

The University of North Carolina at Chapel Hill, as an educational institution, is committed to the following core values with respect to diversity:

The University supports intellectual freedom, promotes personal integrity and justice, and pursues values that foster enlightened leadership devoted to improving the conditions of human life in the state, the nation, and the world.

The University believes that it can achieve its educational, research, and service mission only by creating and sustaining an environment in which students, faculty, and staff represent diversity, for example, of social backgrounds, economic circumstances, personal characteristics, philosophical outlooks, life experiences, perspectives, beliefs, expectations, and aspirations, to mention some salient factors.

The University will achieve and maintain diversity on the campus through the admission of students and employment of faculty and staff who broadly reflect the ways in which we differ.
The University promotes intellectual growth and derives the educational benefits of diversity by creating opportunities for intense dialogue and rigorous analysis and by fostering mutually beneficial interactions among members of the community.

The University provides an environment that values and respects civility and cordiality of discourse in order that all members of a diverse community feel welcomed and feel free to express their ideas without fear of reprisal.
Testimonials

Biological Safety

“Emergency operations within biosafety level 3 (BSL-3) facilities represent low frequency, high risk events. The emergency response procedures we’ve developed, in concert with the Biosafety Office at EHS, will help mitigate much of the risk inherent in such operations. That risk can be further reduced through training simulations. In this case, the Chapel Hill Fire Department was particularly fortunate to be able to train in a temporarily decommissioned BSL-3 facility during a series of drills organized by the Biosafety Office. The ability of our firefighters to rehearse these procedures, in real time, in a fully functional lab space, is vital to our success should a true emergency occur in a BSL-3 facility.”

— Patrick Spencer, Operations Division, Chapel Hill Fire Department

Chemical Safety

“We have on two occasions needed to use EHS for disposal of expired or unused DEA scheduled compounds. Both times, it was a relatively painless procedure. They were very helpful in making sure the paperwork and documentation was correct, and were prepared for our questions. EHS at UNC is always professional and helpful. I look forward to continuing to work with them.”

— Todd O’Buckley, Molecular Neuropharmacology Lab, UNC Bowles Center for Alcohol Studies

Fire Safety and Emergency Response

“In hosting 250 athletic competitions annually, from men’s basketball to fencing, our primary responsibility is to keep our fans, staff and student-athletes safe. Our collaborations with the Department of Environment, Health and Safety, in particular the Fire
Safety Unit, are invaluable to maintaining this trust. From providing guidance and input in our training and planning, to supporting our efforts on Game Day, to providing strong response in crisis and emergency, we are grateful for continued engagement and focusing on these common goals.”

— John Brunner, Assistant Athletic Director for Event Management, UNC Athletics

**Occupational and Environmental Hygiene**

“Our division has worked closely with Occupational and Environmental Hygiene to provide training and medical surveillance to our employees. We have almost 60 employees enrolled in the University’s Hearing Conservation Program. In the past, our employees were required to go offsite to receive annual hearing tests. By arranging for a mobile unit to come to campus, Occupational and Environmental Hygiene has helped our division save both money and time. They have also been instrumental in identifying heat stress areas where our staff are at risk. By providing us with education, training and easy-to-follow instructions, they have helped keep our employees safe.”

— Kenneth Muller, Training Coordinator for the Division of Comparative Medicine

**Radiation Safety**

“This past year our nursing unit began providing care for pediatric patients who received I-MIBG therapy. Over the past couple of years we prepared our staff to care for these patients. The radiation safety team provided us ongoing support during this time. They provided us extensive education, participated in numerous meetings, as well as participated in simulation activities. During the time that we provided care for these patients, they made themselves available to answer any questions and helped to ensure that we were being safe when providing care. We have truly appreciated all that they have done for our staff and for our patients.”

— Patricia L. Yee, RN, MSN Patient Service Manager III
University Employee Occupational Health Clinic

“(The 2018-2019 Alana Yaksich National College & University Flu Vaccination Challenge) was truly a community effort, and we are very grateful for your support and efforts in promoting this challenge. We are hopeful that this campaign has raised awareness of the importance of flu vaccine and better prepared our community for the flu season.”

— Ken Pittman, Executive Director of Campus Health Services

Workplace Safety

“The 2018 EHS Shop Safety Fair provided me with new helpful information. I didn’t know the proper way to use some PPE and safety equipment. I learned a lot from the fair, and I hope this will be an event every year. The fair was fun and beneficial with prizes, food and useful information.”

— Michael Penny, Mason II, UNC Facilities Masonry Shop

Risk Management

“Although planning for disasters is extremely important, it is often low on the list of priorities for many departments. We are fortunate at UNC to have a group of highly skilled professionals focused on proactive planning to avoid and mitigate the risks associated with any disruption of operations. As the chair of the University’s Information Technology Executive Council, I worked closely with the Risk Management Team of Robin Bennington, Janet Hoernke, and Drew Nicholson during the development and implementation of a new tool to help departments create business continuity plans. This tool was named Tar Heel Mission Ready, acknowledging our university’s nickname and the purpose for this planning. This team performed extensive research to find a higher education-focused tool to support this critical work. They consulted with other leading universities as they developed best practices for the implementation. Throughout this process, I observed a genuine concern for the people and operational processes within the University. Through their efforts, UNC departments now have access to a streamlined business continuity tool that helps all departments become more proactive and resilient.”
— Ray Reitz, Executive Director for Information Technology, Finance & Operations and Chair of UNC’s Information Technology Executive Council

“Payroll Services just completed our Mission Ready Continuity Plan through the software program provided by Risk Management. The Risk Management Team were insightful and instrumental in helping us develop a user-friendly and comprehensive resource that will be available for our staff should an emergency situation arise.”

— Stephanie Kidd, Payroll Manager
2018 Goals and Performance

Intrapreneurship

- Expand emergency response capabilities by examining and prioritizing current functions, increasing training levels, providing equipment and embedding responders on campus for more rapid responses. 

- Evaluate the use of social media into lab safety culture communications and explore other marketing avenues in collaboration with the Service Center of Excellence Marketing & Communications staff. Develop an internal EHS standard on social media. 

- The EHS-HMP team will identified, developed and implemented enhancements to the Job Safety Analysis including the development of at least one JSA with each assigned inspection. 

- Review the latest standards for mold pertaining to indoor air quality and work environment. Determine the appropriate approach for the different environments encountered at the University. 

- Undergo a comprehensive review of building systems at the Hazardous Materials Facility to ensure safety, security and business continuity. 

- Review, standardize and streamline the lab closeout procedure to ensure researchers do not leave abandoned labs that require time and materials for remediation. 

- In collaboration with the School of Dentistry, review and develop educational materials for preventing bloodborne pathogens exposures. 

- Review and make improvements to Laboratory Safety Plan (LSP) Schedule F (Biological Safety) to include information on...
laboratory equipment (such as Freezers and autoclaves).  

**Compliance**

- Implement Business Continuity software across campus which will identify critical functions and support the implementation of resiliency plans. Assist compliance with Finance and Operations Policy 101 - Business Continuity Planning.
- Continue to work with NCDENR on development and implementation of remedial action plan (RAP) for the Town of Chapel Hill Old Sanitary Landfill at Carolina North.
- Develop and implement training and procedures for ensuring compliance with regulations and University policies related to radiofrequency (RF) emitting equipment on campus roofs. This entails developing safety awareness training for employees accessing campus roofs, access control for campus roofs and developing a process for shutting down RF equipment during roof work.
- Establish a comprehensive radiation safety program for cyclotron facility now that human-use radiopharmaceuticals are being produced.
- Apply for a Manufacturing and Distribution license for BRIC's cyclotron facility.
- Implement the proposed clinical laboratory inspection program to ensure a safe work environment for employees working in clinical laboratory areas.
- WPS and Risk Management Services will develop and implement educational resources to ensure workers' comp/disability overage for University Departments employing personnel outside the state of North Carolina.
- Review and updated expectations for confined space rescue. Explore options for collaboration with CHFD and other response agencies.
- Renew radioactive materials license for UNC Nutrition Research Institute.
- Review and update the Select Agent program to implement the required regulatory changes.
- Complete the comprehensive revision of the UNC EHS Emergency Response Manual.
- Develop a PCB Management Plan and UNC training for construction sites that integrates both waste management and safety
management of PCBs.

- Develop and implement a compliance plan for the effluent limitations guidelines and standards for the Dental school. 40 CFR parts 403 & 441.

**Growth**

- Continue to support the Mary Ellen Jones renovation project including design review and construction activities.
- Continue to support the Medical Education Building project, including permitting, design review, demolition and construction activities.
- Continue the development and implementation of an on-line Permitting program for Confined Space, and Energized Work (Confined Space) (Energized Work)
- Support the number of new building/infrastructure projects across campus, including permitting, design review, demolition and construction activities.

**Education**

- The EHS mercury project team will developed and implemented an on-line Mercury Awareness training for the Dental School.
- Review and update the Biological Safety risk group 2+ online training programs with modules for HIV/SIV, Non-human primates / herpes B and viral amplification.
- Continue to drive the Culture of Safety across campus. Actively engage and use national awareness events such as “National Biosafety Stewardship Month” and “June is Safety Month” as communication vehicles to enhance the safety culture across campus.
• Review the University’s Bloodborne Pathogens (BBP) program and update as needed.
• Implement the required OSHA Silica training and RCRA HW training across campus.
• Implement the required OSHA Silica training and RCRA HW training across campus.

Key

• Completed
• In Process
• Stopped
2019 Goals

Intrapreneurship

- Create an intra-department web page for Facilities and EHS to share information and create efficient processes.
- Review the current emergency coordinator and Emergency Action Plan (EAP) program in coordination with Emergency Management. Update the process, the emergency coordinator tracking and provide training across campus.
- Develop an ITS solution for capturing, recording and distribution of building fire and life safety inspections.
- Review the latest standards for mold pertaining to indoor air quality and work environment. Determine the appropriate approach for the different environments encountered at the University.
- Review the best practices for Field Work research. Develop a list of ideas and recommendations for UNC-CH implementation.
- Perform comprehensive review of all chemical and lab safety policies and procedures, update as needed and present to Laboratory & Chemical Safety Committee meetings.
- Review and implement a BSL-2 medical surveillance program for BSL-2 agents for which vaccinations are recommended.
- Conduct a systematic review of the HMP program for opportunities and improvements. Incorporate the 5S/6S philosophy into this program to drive the culture of safety.

Compliance

- Renew the University’s Title V permit and update as needed.
- Continue to work with NCDENR on development and implementation of remedial action plan (RAP) for the Town of Chapel Hill
Old Sanitary Landfill at Carolina North

- Develop and implement training and procedures for ensuring compliance with regulations and University policies related to radiofrequency (RF) emitting equipment on campus roofs. This entails developing safety awareness training for employees accessing campus roofs, access control for campus roofs and developing a process for shutting down RF equipment during roof work.
- Apply for a Manufacturing and Distribution license for BRIC’s cyclotron facility.
- Test and Implement the proposed clinical laboratory inspection program to ensure a safe work environment for employees working in clinical laboratory areas.
- Working in collaboration with Facilities Life Safety, review of all fire alarm systems on campus in order to develop a list of priority replacements for the University.
- License new accelerator at Hillsborough hospital.
- Renew the UNC Academic Broad scope Radioactive Materials License, the Medical Accelerator license and the license for the Institute of Marine Sciences in Morehead City.
- Complete the comprehensive revision of the UNC EHS Emergency Response Manual.
- Develop a PCB Management Plan and UNC training for construction sites that integrates both waste management and safety management of PCBs.
- Develop and implement a compliance plan for the effluent limitation guidelines and standards for the Dental school. 40 CFR parts 403 & 441

Growth

- Support the design of the TR8 building project.
- Continue to support the Medical Education Building project, including permitting, design review, demolition and construction activities.
- Continue the development and implementation of an on-line Permitting program for Energized Work.
• Support the number of new building/ infrastructure projects across campus, including permitting, design review, demolition and construction activities.

• Support chemical moves, waste disposal and lab safety plan updates as part of new Mary Ellen Jones Building coming online in 2019.

• Radiation Safety will support Surgical Tower and Proton Accelerator Facility design process.

**Education**

• The EHS mercury project team will develop and implement an on-line Mercury Awareness training for the Dental School.

• Train and develop HMF staff to perform Haz-Waste re-inspections as part of CLIP team process.

• Evaluate the feasibility and demand for EHS Biosafety-led hands-on training for new employees and students focused on fundamental laboratory principles and safe practices.

• Continue to drive the Culture of Safety across campus. Actively engage and use national awareness events such as “National Biosafety Stewardship Month” and “June is Safety Month” as communication vehicles to enhance the safety culture across campus.

• Perform systematic review of self-study training courses associated with biological safety and update into interactive format using Articulate Storyline. Customize consortium provided biological safety trainings to meet UNC requirements and post.

• Perform systematic review of current chemical safety self-study training courses and update if needed into interactive format using Articulate Storyline. Customize consortium provided chemical safety trainings to meet UNC requirements and post.

• Perform systematic review of self-study training courses associated with radiation safety and update into interactive format using Articulate Storyline. Customize consortium provided radiation safety trainings to meet UNC requirements and post.

• Perform systematic review of self-study training courses associated with workplace safety and update into interactive format using Articulate Storyline. Customize consortium provided workplace safety trainings to meet UNC requirements and post.
Biological Safety

The ability of emergency responders to rapidly attend to an injured or incapacitated individual is critical to ensuring that the individual receives essential medical attention as quickly as possible. Any delays in the response could have serious consequences depending on the nature of the medical emergency. Due to the inherent safety and security complexities associated with high containment labs, accessing and retrieving an individual from such a lab has unique challenges, particularly for emergency responders not routinely accustomed to entering such spaces.

To ensure emergency responders reporting to an incident in a high-containment laboratory on the UNC-Chapel Hill campus are able to successfully enter into the lab and rapidly retrieve injured personnel, the Biosafety Office at the Department of Environment, Health and Safety (EHS) organized and hosted a series of multi-agency, multi-jurisdictional training drills with UNC Police, Chapel Hill Fire Department (CHFD) and Orange County Emergency Medical Services (EMS). In total, 18 drills over a two-week period were performed in a clean high-containment lab and simulated an unresponsive individual in the lab. Emergency responders in the drills were required to make decisions and take appropriate actions as if it was a real emergency, testing their personnel, equipment, communications systems and procedures as outlined in their respective emergency plans and protocols. Participants in the drills were expected to experience the same problems and stresses of a real event.

Overall, the assessment of responders’ performance against exercise objectives and direct feedback from the responders indicated
that the drills were a resounding success. Serving to build upon the annual in-class training received by UNC Police and CHFD, the drills helped enhance the comfort, confidence and efficiency of responders in entering high-containment labs, which is critical to ensuring the best possible outcome for an emergency response to a high containment lab.

**Performance Chart**

Performance measurement is a critical part of the EHS management system. Education, customer service and internal processes are the three most essential components of our work. The chart below indicates the performance in these areas over a five-year period with Level Four representing optimum performance. The adjacent tab shows the specific performance activities and the level of that performance for 2018.

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<th>Level</th>
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**Compliance**
Performance Activities

Education

- Trained 9,171 healthcare workers, facilities services employees, researchers and childcare providers in bloodborne pathogens annual requirement through online and in-class sessions.
- Trained 1,080 researchers in basic principles of conducting research at BSL-2, such as proper technique and waste handling, and trained 168 researchers in enhanced BSL-2 procedures.
- Trained 682 researchers and other campus personnel in proper requirements for shipping with dry ice.
- Trained 527 campus researchers, staff and administrators about federal and international shipping and import regulations through online and in-class sessions.
- Trained 331 researchers and other campus personnel on essential awareness and biological safety in BSL-3 laboratories.
- Trained 291 researchers and staff members on proper use of autoclaves through online training.
- Conducted 242 online trainings in DCM Orientation, DCM BSL-2 and Zoonotic/Lab Animal Allergy for DCM employees.
- Trained 230 researchers on policies about Dual Use Research of Concern through online training.
- Trained 151 researchers in identifying and registering projects meeting NIH Guidelines for Research Involving Recombinant DNA Molecules.
- Trained 22 Facilities Services employees on how to respond to potentially infectious sewage spills.

Customer Service

- Investigated 43 incidents of laboratory spills, accidents and procedural problem involving potentially infectious materials with no laboratory-acquired infections resulting from accidents.
- Submitted 26 registration updates to the CDC in reference to laboratory operation changes.
- Certified 481 campus biological safety cabinets ensuring safety of product, personnel and environmental protection.
- Reviewed 23 I-129 visa applications.
• Reviewed and approved 543 Laboratory Safety Plans’ Schedule F (Biological Hazards).
• Reviewed and approved 315 Laboratory Safety Plans’ Schedule G (Recombinant or Synthetic DNA).
• Reviewed and approved 438 Laboratory Safety Plans’ Schedule H (Transgenic Animals/Plants).
• Reviewed and approved 273 Laboratory Safety Plans’ Schedule I (Shipping).
• Reviewed 802 IACUC Protocols.

Internal Processes

• Updated biological hazard registration form (Schedule F) to include BSL-1 agents and identify potential high-risk activities with any biological agents.
• Updated HasMIS database to capture information regarding location and usage of autoclaves across campus.
• Instituted new process for registration and approvals of recombinant DNA research relating to pending IACUC protocols to streamline the approval process.
• Incorporated the use of tamper-proof box seals to minimize laboratory down time associated with annual verifications of select agent freezer inventories.
• Updated Laboratory Safety Plans (LSPs) to clearly identify when recombinant DNA research protocols (Schedule Gs) have expired, including instituting an email notification system alerting PIs to protocols that will be expiring shortly.
Chemical Safety

In 2018, the Department of Environment, Health and Safety (EHS) and the Department of Chemistry won the “Safety Status College and University Health and Safety Award” from the American Chemical Society (ACS), Division of Chemical Health and Safety. The award recognized the joint commitment to chemical safety between the two departments at UNC-Chapel Hill.

The team submitted a comprehensive award package which focused on the collaboration between the Chemistry Undergraduate Teaching Labs and the Chemical Safety section of EHS. Specifically, the submittal package outlined the University’s Chemical Hygiene Plan, Chemical Storage and Chemical Waste Policies, Faculty and Teaching Assistant engagement in chemical safety, Lab Inspection Program components, Incident and Accident Investigation procedures and Laboratory and Chemical Safety Committee structure. In addition to the materials submitted to the award committee, a site visit was required to assess the overall chemical safety program.

After winning the award, the team was invited to present at the ACS National Meeting in Boston. The team was represented by Nita Eskew, Director of Undergraduate Chemistry Labs, and Cathy Brennan, Assistant Director of EHS, and presented on “Fostering a Culture of Safety at UNC-Chapel Hill.” The award is the highlight of many years of collaboration between the Department of Chemistry and the Department of
Environment, Health and Safety and serves as an excellent example of Safety Culture at UNC-Chapel Hill.

**Performance Chart**

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Compliance
Performance Activities

Education

- Trained 1,919 new laboratory employees on Laboratory Environment through online self-study.
- Trained 817 employees on Formaldehyde to comply with OSHA requirements.
- Trained 172 employees on Nanotechnology Safety online.
- Trained 171 employees on Chemical Fume Hoods through online training.
- Trained 138 employees on Compressed Gas Safety through online training.
- Trained 25 employees on DEA Controlled Substances through online training.
- Trained 6,430 employees on Sub-part K Hazardous Waste Management online training.
- Conducted chemical safety training for incoming Chemistry Department Teaching Assistants, Chemistry 550L undergraduate class and Chemistry 701 graduate class.
- Utilized Principal Investigator listserv to distribute updates, alerts, laboratory safety news and Lab and Chemical Safety Committee meeting minutes.
- Helped organize and presented at the second annual EHS lab safety fair in Koury Oral Health Science Building.

Customer Service

- Reviewed 775 new and/or updated Laboratory Safety Plans and reviewed deficiencies with PIs and Safety Supervisors, ensuring compliance with the University’s Chemical Hygiene Plan.
- Uploaded 417 chemical inventories into online system and reviewed 433 annual inventory updates as part of Chemical Hygiene Plan compliance.
- Supported animal care and use in research regulations by participating in satellite facility and semi-annual inspections.
- Assessed potential chemical exposures by monitoring air concentrations in the breathing zones and laboratory work areas of 11 employees and made suggestions for controls to eliminate/minimize chemical health hazards.
• Assessed three lab employee work environments as part of the Conceptus Protection Program.
• Participated in clean-up of chemical spills in campus laboratories as technical experts and members of Emergency Response Core Team.
• Investigated 14 research laboratory accidents/incidents, evaluated root causes, and provided recommendations for modifications of work operations to prevent future incidents.
• Generated and delivered lab entrance signs for 515 laboratory rooms.
• Spoke about the Conceptus Protection Program at the Carolina Women’s Center FMLA program.
• Participated in and supported on-campus flu clinics.
• Performed a review on Principal Investigators moving to the new Mary Ellen Jones building who hold a DEA license and informed them that they needed to update their license.

Internal Processes

• Performed 149 CLIP/Radiation/HazWaste inspections, assessing campus laboratory safety and compliance.
• Reviewed all 317 IACUC applications, including reviewing and approving Chemical Hazard forms, ensuring research compliance for animal care and use.
• Verified 28 lab closeouts to ensure lab spaces had been left clean, decontaminated and free of waste.
• Inspected 1,250 chemical fume hoods and submitted 74 facilities repair requests for fume hoods.
• Calibrated EHS Departmental thermo-anemometers for use in chemical fume hood face velocity checks during inspections.
• Participated in and supported EOC activations for OWASA “Do Not Use” incident, Hurricane Florence, Winter Storm Diego, McCorkle Place rallies, and athletic events. Supported UNC-Wilmington in recovery efforts immediately after Hurricane Florence.
• Launched Subpart K program (reference materials, labels, training, inspections) across campus in response to update EPA Hazardous Waste Generator Rules.
• Awarded the Division of Chemical Health & Safety College and University award in collaboration with the UNC Department of
Chemistry. Presented poster and award presentation at American Chemical Society (ACS) National meeting.
Environmental Affairs

On October 5, 2012, Congress enacted into law a national system for tracking hazardous waste shipments electronically. This system, known as "e-Manifest," was established to modernize the nation's cradle-to-grave hazardous waste tracking process while saving valuable time, resources, and dollars for industry and states.

The Environmental Protection Agency (EPA) launched e-Manifest on June 30, 2018. As of June 30, UNC-Chapel Hill had the choice of continuing to utilize paper manifests for hazardous waste documentation or moving fully into using EPA's online e-manifesting website. This program went hand in hand with UNC Environment, Health and Safety's embrace of the UNC goal of Three Zeros.

UNC opted to fully adopt e-manifesting from the start of the rule taking effect and submitted its first e-manifest via the EPA website on July 2, 2018. As of December 31, 2018, UNC had submitted a total of 204 e-manifests and paid $1,020 in associated manifest fees. By choosing e-manifesting over paper manifesting, EHS saved $2,040 in fees during 2018.

According to data provided by the EPA, 655,320 manifests were provided to EPA during the period between the end of June 2018 and mid-December 2018. Of those manifests, only 1,643 were submitted as fully electronic manifests. UNC was responsible for over 11% of all of the e-manifests submitted to the EPA during that timeframe. UNC has been an early and enthusiastic adopter of the new technology.

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**Performance Activities**

**Education**

- Trained 1,919 employees on Managing Laboratory Generated Hazardous Waste through orientation safety online training.
- Trained 6,430 employees on Laboratory Chemical Waste Management (Subpart K) through online training.
- Trained 159 employees on Universal Waste Handling through online training.
- Trained 35 employees from Parking and Transportation and the Art Department in stormwater awareness through classroom training.
- Trained 51 UNC employees in stormwater awareness through online training.
- Trained 6 Service Station employees, 4 RDU Airport Medical Air Operations employees and 9 EHS employees on stormwater permit requirements and pollution prevention through classroom training.
- Participated in the Earth Day educational fair.
- Presented “Inspected by EPA Region IV and North Carolina DWM on Day 1 of the New Generator Improvements Rule Implementation!” at the CHMM National Conference.
- Conducted TSD Permit Specific Training: Modules 1-5.
- Participated in the State Climate Office Tour with approximately 30 public school students by organizing a stormwater pollution run off, hands-on demonstration.

**Customer Service**

- Conducted 11,355 waste pickups of 61,241 kg of hazardous waste and 101,236 kg of non-hazardous solid waste from University generators.
- Conducted 649 pickups of radioactive waste and shipped 41.6516m Ci of radioactive waste offsite for treatment and disposal.
- Completed 63 HW manifests for transport of hazardous waste and solid waste to an offsite vendor TSDF for treatment and disposal.
- Shipped 103,310 kg of waste from the TSDF to an offsite vendor TSDF for treatment and disposal.
- Created 32 waste manifests associated with the direct shipment of solid and hazardous waste from UNC-CH laboratories to offsite vendor TSDFs for treatment and disposal.
- Shipped 9,950 kg of solid and hazardous waste directly to offsite vendor TSDFs.
- Shipped 5,825 kg of scrap metal (ferrous and non-ferrous) offsite for reclamation and recycle.
• Shipped 1,052 kg of regulated medical waste boxes to Stericycle for incineration.
• Aided with controlled substances drug disposal on campus which included 20 visits by DHHS Drug Control Unit for 25 lab visits/inspections.
• Conducted 35 NPDES sediment and erosion control inspections of NPDES permitted land disturbance projects.
• Conducted one Phase 1 ESAs for a property in coordination with the UNC Property Office.
• Assisted UNCW with their emergency response to Hurricane Florence.

**Internal Processes**

• The University implemented Subpart K for laboratory hazardous waste management and implemented the New Hazardous Waste Generator Regulations for the Facilities Services maintenance shops.
• Prepared UNC Hospital hazardous and radioactive waste budget analysis and corresponding year-end invoices.
• Submitted Semi-Annual and Annual Reports for the UNC Title V air permit; prepared the Annual Air Emission Inventory; and completed the annual Greenhouse Gas submittal.
• Received the revised Title V air permit issued for installation of a new fire pump at Davis Library. Prepared a permit modification application to install a dry-sorbent injection system at Cogen. EA assisted with air quality issues associated with the proposed hospital generator complex.
• A Title V presentation and compliance tool, initially prepared in 2013, were updated.
• Revised the Stormwater Pollution Prevention Plan for the HMF Stormwater Permit.
• Created an O & M Plan for the FOBRL Lift Station.
• Conducted monthly maintenance and sampling at the Mason Farm Low-Level Radioactive Waste Site and prepared an annual report documenting conditions at the site.
• Conducted monthly maintenance and sampling at the Airport Road Waste Disposal Area, and prepared an annual report documenting conditions at the site. An additional groundwater recover well was installed to help speed cleanup at the site.
• Conducted a joint department stream clean up with UNC Athletics.
• Conducted permit required sampling at the Bingham Facility wastewater system. Submitted monthly and annual reports to regulators. Installed a facility-wide water softener at the complex.

• Applied for a buffer authorization permit from NC DEQ and a Nationwide Permit from the USACE for Outdoor Recreation Stormwater Retrofit Project using the new electronic Pre-Construction Notification submittal.

• Conducted permit-required semiannual stormwater monitoring for the HMF Stormwater Permit and submitted reports to NC DEQ.

• Applied for and received the Central Campus Athletic Project’s reclaimed water permit modification from NC DEQ, and assisted with cleanup of petroleum-impacted soil from under the stands at the facility.

• Applied for and received erosion and sedimentation Control permits from NC DEQ for UNC Hospitals Surgical Towers, Horace Williams Airport Property Solar and Energy Storage Demonstration, Odum Village Student Apartment Complex Demolition and SECU Family House.

• Received the campus-wide NPDES Phase II stormwater permit renewal from NC DEQ.

• Began using EPA’s new E-Manifesting system for all hazardous waste shipments from campus to the Hazardous Materials Facility.

• Submitted the 2017 Biennial Hazardous Waste Report.

• Motion Lights/Sensors for Building S82 installed as part of the UNC Security Assessment.

• RFPs submitted and approved for Hazardous, Medical and Radioactive Waste contractors.
Fire Safety and Emergency Response

There are approximately 7,000 fire extinguishers on campus. All extinguishers must have an annual inspection and maintenance to be code-compliant, which is a daunting task for a single person to handle. Fire Safety utilizes the federal work-study program to aid in this process, typically hiring two inspectors to assist with the fire extinguisher inspections across campus. The program has been updated over the years, and the work study students’ assistance is now heavily relied upon.

In 2018, the Fire Extinguisher Inspector position in the federal work-study program is a finalist for the award of “Most Distinct Job” — a title that most people believe about their job! UNC’s two students nominated the position, stating:

“Fire Extinguisher Inspector is a very unique job on campus that very few know about. Whenever I mention my work study job, people always ask questions. They always want to know what exactly I have to do and where I have to go. Many people don’t even know that people inspect the extinguishers, or it’s something they never thought about someone having to do. We travel all over campus, doing a different section each month. We get to see every aspect of UNC’s beautiful campus, from the medical school to the Dean Dome, to research labs, to the NC Botanical Gardens, to the Rizzo Conference Center, and literally everything in between. The best part is that we get to meet all the different kinds of wonderful people that make UNC functional, and make it awesome!”

Chasity Smith, a federal work-study student who has worked for the department for three years, had this to say about her position:
“When I saw the job title “Fire Extinguisher Inspector,” I immediately knew that this work-study job would be unique. But, what I did not know was how much actually goes into the job, or how much I would enjoy it. I was, and still am, a volunteer on a fire department back home, so inspecting fire extinguishers seemed like something I could somewhat relate to. My first day was a little overwhelming because there was SO much I did not know about fire extinguishers. I thought they were pretty simple, and I knew how to use one, but I did not know how much went into keeping them in use. It isn’t only looking at the gauge to see if it is full. It is also checking for a brand, model, label, date, dents, and dings to make sure that it is still safe to use. It also involves interacting with people all over campus, which means everything from explaining what exactly it is I am doing, to explaining to someone how to actually use an extinguisher. Interacting with people is actually one of my favorite parts of the job. There are so many wonderful people that keep campus running, and without this job, I would have never met nor had the opportunity to appreciate them. I am proud to be one of the people that help keep it functioning. It is a small job that I never realized even existed before applying, but it is most certainly necessary.”

It would be very difficult for the Fire Safety section of EHS to keep fire extinguisher inspections up-to-date without the students’ help. Luckily, this job function can be intriguing to students, which, along with being a finalist for the most distinct job award, will help with the recruitment of new students for future years.

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**Compliance**
Performance Activities

Education

• Reached students, staff, and visitors at the Off-Campus Housing Fair, Safetober Event, Good Neighbor Initiative, and Lab Safety Fair to teach fire prevention and extinguisher use.
• Performed over 289 fire drills for UNC buildings.
• Provided over 18 hours of training to members of the UNC EHS Emergency Response Team.
• Provided 40 hours of Hazards Control training for new UNC EHS Emergency Response Team members.
• Provided eight hours of hazardous materials response training to other EHS employees to fulfill annual refresher requirements.
• Provided two work-study students an opportunity to learn about fire safety and how to operate fire extinguishers, while freeing staff for other critical responsibilities.

Customer Service

• Provided fire safety coverage to six home football games and 15 home men’s basketball games. Improved collaboration with the Athletics Department for safer events.
• Provided fire safety coverage to a variety of other special events on campus, ranging from performances at Memorial Hall to special events with the Chancellor.
• Inspected 35 dining facilities cooking hoods bi-annually.
• Provided life safety recommendations and monitored the annual Fall Festival for safety issues.
• Participated in pre-plan committee meetings for the Chapel Hill Fire Department.
• Inspected 6,732 fire extinguishers on campus.
• Responded to 38 reports of gas or burning odors in University buildings.
• Installed 14 emergency key boxes (“Knox Boxes”) on the UNC campus and worked with Facilities Services to include at least six additional Knox Boxes on capital construction projects during 2019.
Internal Processes

- Investigated a paper shredder fire (Bondurant Hall), a small trashcan fire (Cobb Residence Hall) and a concession stand fire (Kenan Stadium).
- Investigated and documented 267 false fire alarms during calendar year 2018.
- Implemented a program to respond to automatic fire alarms on campus. Through meeting Chapel Hill Fire Department on scene, we can reduce false alarms and gain a better understanding of activations and responses.
- Conducted fire alarm testing on 171 campus buildings.
- Conducted fire safety inspections in 50 campus buildings.
Occupational and Environmental Hygiene

Make, Frame, Reveal

Make, Frame and Reveal is the mission statement of the UNC-Chapel Hill Department of Art and Art History. In support of this simple but powerful mission statement, Environment, Health and Safety (EHS) assisted the Department in developing an online training module entitled Safety in the Department of Art and Art History for their faculty, students, and staff.

UNC-Chapel Hill is committed to providing a safe environment that supports the health and safety practices of its art community and empowers the community to be responsible for the safety of others. Through this training, the Department and EHS wanted to instill in the campus art community that safety is everyone’s responsibility. Developing and maintaining this Culture of Safety is a critical component of scholarly excellence as well as an important element of the teaching mission at UNC-Chapel Hill.

It is a common misconception that creating art is non-hazardous. However, artists encounter the same hazards as “high risk” occupations. The training provides a general overview of hazards and regulatory requirements associated with safely creating art in the department’s two main art studio facilities: the Hanes Art Center and the Art Lab. The Hanes Art Center includes a 300-seat auditorium, classrooms, libraries and faculty and graduate student studios. Artworks are exhibited in the Alcott Gallery and other exhibition spaces. The Art Lab houses most of the department’s sculpture facilities, including a fully-equipped tool room and complete metalworking, woodworking, and ceramic shops. The facility also includes 12 graduate and faculty studios, a critique room and a 615-square foot “clean room” for photographing and displaying artwork.

The training instructs the campus art community on general safety such as the steps to follow during a fire emergency or how to proceed in case of an injury. Also, it outlines methods implemented to control exposure to hazards experienced during activities such as painting, welding and carpentry. Exposure control methods include local exhaust ventilation, limiting exposure duration,
and lastly, the use of personal protective equipment (i.e., gloves, respiratory protection, etc.). Proper chemical waste disposal procedures and the use of safer products are covered in the training. The training discusses the risk of improper body positioning and ways to prevent repetitive motion disorders while creating art.

Artists are passionate about their work, but the Department and EHS are just as passionate about creating a safe environment to foster their creativity. Our overall objective for this training is:

- To encourage students to be responsible artists.
- To know their materials and read product labels.
- To follow the directions of the instructor and facility managers.
- To report unsafe conditions or damaged equipment immediately.
- Most of all, to work safely and be considerate of the health and safety of the people around them.

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**Compliance**
Performance Activities

Education

- Trained 564 Maintenance, Housekeeping, and Design and Construction Services employees in asbestos awareness through online and in-class training.
- Transitioned from predominantly in-class Asbestos Awareness training to online training module.
- Trained 157 Maintenance and Design/Construction Services employees on OSHA Lead-in Construction Standard through in-class and online training.
- Trained 386 employees enrolled in the Hearing Conservation Program on Occupational Noise Safety through in-class and online training.
- Trained 83 employees from Facilities Services on confined space awareness via online training.
- Trained 271 employees from Facilities Services, Energy Services and UNC Police on confined space via in-class and online training.
- Trained 31 employees from Facilities Services, Energy Services and EHS on confined space job-specific protocols.
- Trained 137 employees from Facilities Services and Energy Services on lockout/tagout through online training.
- Trained 10 UNC-TV safety supervisors on the online Hazards Management Plan system.
- Presented occupational noise exposure lecture to approximately 10 students in the School of Public Health Introduction to Industrial Hygiene class.
- Assisted Workplace Safety in the development of silica awareness training for campus employees.
- Trained approximately 25 Building Services supervisors on job safety analysis as part of the Hazards Management Plan (HMP) team.

Customer Service

- Conducted 90 lead and asbestos inspections, including building and material testing, to support in-house maintenance and
construction activity.

- Conducted monitoring for asbestos during six internal small-scale removal and clean-up projects performed by the Insulation Shop.
- Coordinated mobile hearing tests for 237 employees enrolled in the Hearing Conservation Program, saving $5,700 for the tested departments.
- Assisted UNC-TV with the development of their health and safety program by training employees on the online Hazards Management Plan (HMP) system, updating work units and reviewing submitted HMPs.
- Assisted the Department of Art and Art History with safety concern with deteriorating guards on exhaust fans Hanes Art Room 301.
- Supported the Mary Ellen Jones renovation project by collecting approximately 120 water samples for lead testing prior to move-in.
- Performed 22 indoor air quality investigations within various campus buildings and responded to 21 odor complaints and recommended response actions.
- Responded to ten large flood events and eight black water events. Assisted Building Services in determining the extent of the water damage.
- Investigated 35 instances of mold contamination and recommended remediation protocols.
- Responded to question concerning the hazards of employees wearing ear buds in high noise areas for the Department of Comparative Medicine.
- Industrial Hygiene monitoring during use of Rubber Renue product due to an employee concern in Parking Maintenance and monitoring for tetrachloroethylene during use of brake cleaner in the Grounds Garage.
- Conducted monitoring for mercury while Facilities Services conducted the following activities on the Dental School vacuum system: vacuum pump repair, receiver tank maintenance, tank flushing and drain clearing. Revised PPE assessments for these activities based on results.
Internal Processes

- Updated and relaunched the basic online confined space entry notification form for use by Facilities and Energy Services.
- Collaborated with Energy Services and Facilities Services GIS specialists and IT to identify a GIS confined space list to use in conjunction with an online entry notification and tracking system. The system is in the development phase.
- Provided mercury assessments and mercury cleanup guidance for six laboratory renovation projects and spill responses.
- Updated the online asbestos building information documents to assist in planning of environmental remediation projects.
- Conducted 48 Hazard Management Plan inspections for Facilities Services, Energy Services and departmental shops throughout campus.
- Participated in OSHA inspections at the Art Lab and Med School Wing C and assisted in implementing corrective actions.
- Participated as members of the Dental School Mercury Committee to address concerns associated with maintenance of the vacuum system.
- Presented the OSHA Crystalline Silica Policy to the Hazards Management Committee for approval.
- Coordinated the first annual EHS Safety Fair for Facilities and Energy Services as part of the Hazards Management Plan (HMP) team.
Radiation Safety

Radiation Safety Office Supports New Radiotherapy Procedure at UNC Medical Center

The Radiation Safety Office (RSO) supported the Nuclear Medicine Division of Radiology in the design, planning, licensing, training, and implementation of a new radiotherapy procedure used to treat pediatric patients with neuroblastoma. This new treatment, referred to as pediatric MIBG (Meta-Iodo-Benzyl-Guanidine), uses large activities of radioactive materials in patients during in-patient treatment, requiring careful contamination control processes. The first procedure occurred in October 2018. These procedures are especially challenging since:

- Atypically large amounts of radioactivity are used,
- The patients are children, so their parents will be involved,
- The patient has to be catheterized so the urine can be pumped away, and
- The facility was not designed to accommodate the amount of radioactivity used in these procedures.

Because such large amounts of radioactive materials are used, there is significant occupational radiation dose potential, as well as general public dose potential to the caregiver (parents) and surrounding patients. The RSO had to amend the radioactive materials license to allow for these procedures, adjust dose limits to care givers who are members of the general public, ensure the regulatory agency that these procedures can be performed safely, and develop all the pertinent procedures and training materials to limit occupational doses to nurses, physicians, nuclear pharmacists and caregivers as well as patients in nearby rooms. This included shielding evaluation of the patient room to determine the extent of local shielding necessary to conduct the procedure.

The RSO was involved in determining the necessary radiation protection measures for transport of the radiopharmaceutical, for
handling the patient’s bodily excretions and excrement and for servicing the patient to protect all persons involved in the care of the patient. The RSO’s involvement involved pre-treatment preparations, monitoring during the multi-day treatment and post-treatment decontamination and clean up. Also, radiation monitoring had to be performed using frisking stations in and out of the contamination zone (which is the patient room), active dosimeters to determine doses to caregivers (parents) and passive dosimeters to determine occupational dose of record for involved staff.

This medical procedure required a large multidisciplinary effort in planning, training, and implementation to ensure that radiation risk to staff, caregivers, and general public is ALARA (as low as reasonably achievable).

**Highlight**

**Radiation Safety Office Helps Pave the way for Peptide Receptor Radiation Therapy (PRRT)**

The Radiation Safety Office helped to establish a program to allow the UNC Medical Center to begin a new therapy procedure to treat neuroendocrine tumors using Lutetium-177 in a drug called Lutathera. This effort involved licensing the new procedure with the state regulatory agency, approving the procedure through the UNC Medical Center Radiation Safety Subcommittee, collaborating with Nuclear Medicine and Oncology to develop all the radiation safety SOPs and establishing the release criteria including after treatment response. A particular complexity of this procedure will be that the patient will typically feel nauseous during the day-long treatment due to the amino acids that are administered.

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### Performance Activities

#### Education

- Radiation safety training courses were administered to 2106 persons; non-ionizing radiation safety training was administered to 606 persons.
- Taught Radiologic Health Physics course (RADI 585) for UNC Allied Health Sciences in Fall 2018.
- Provided lectures for the Chemistry Department’s (CHEM 073) Nuclear Chemistry Class.
- Provided a lecture for the Epidemiology Class (EPID 785) on Radiation Dose Assessment.
- Provided a lecture for the Health Effects of Environmental Agents (ENVR 430) course.
- Provided a lecture for the Health Hazards of Industrial Operations (ENVR 433) course.
• Provided lectures for the Radiology Residents program.
• Hosted six Nuclear Medicine Technology students for two week rotations through radiation safety as part of the NMT didactic program.
• Hosted one Radiologic Science student from Alamance County for two weeks to show medical health physics duties.
• Annual radiation safety class was given in August to incoming BBSP (Biological and Biomedical Sciences Program) Ph.D. students.
• Annual radiation safety class was given in May to incoming SURE (Summer Undergraduate Research Experience) Program
• Trained UNC Police and UNCH Hospitals on use of Radeye G PRDs (Personal Radiation Detectors).

Customer Service
• Services were provided to the hospital and patients for 219 radiation-related procedures.
• Processed over 30 X-ray Registration changes for the Medical Center complex.
• Radiation instrument calibration services were provided for 253 instruments.
• 278 X-ray tubes were inspected and tested.
• 1191 persons were monitored for external radiation exposure.
• 79 bioassays were conducted for potential internal radiation exposure.
• 611 collaborative laboratory inspections were conducted.
• 439 radiation safety laboratory inspections were conducted.
• Coordinated with DLAM, SOM administration, researchers, and vendors to repair a XRAD xray irradiator that was out-of-service interrupting time-sensitive research.
• Provided radiation safety services (including instrument calibration and/or annual program reviews) to sister campuses in the UNC system (Appalachian State, UNC-Greensboro, Gateway University Research Park, Western Carolina, NC A&T, and North Carolina Central).
• Provided free materials to PIs including lead sheets and bricks, geiger counters or parts, and multiple pieces of plexiglass
shielding.

- Licensed a new Cyberknife and a new HDR Brachytherapy unit for UNC Medical Center.

**Internal Processes**

- Received, processed, and delivered 436 containers of radioactive materials for PIs’ research.
- Reviewed 31 Institutional Review Board research protocols utilizing radioactive materials for human use.
- Administered eight quarterly hospital and campus radiation safety committee meetings to review and approve research and clinical use of radioactive materials and to review employee radiation dose information and 4 held Radioactive Drug Research Committee meetings.
- The UNC and UNCH radioactive material licenses were amended 4 times in 2018 to accommodate research and clinical use of radiation and radioactive materials. This includes the renewal of the NRI license.
- Participated in planning and design activities for UNCH Proton Therapy Facility
- Conducted required annual radiation protection program review for eight licenses and 21 x-ray registrations, including all off-site locations.
University Employee Occupational Health Clinic

In December 2018 UNC-Chapel Hill was named as the National Winner in the medium-size university category for the 2018-2019 Alana Yaksich National College & University Flu Vaccination Challenge. UNC Environment, Health and Safety (EHS) partnered with Campus Health Services to enter the contest and promote it to campus students, faculty, staff, alumni and friends. After getting vaccinated, members of the Carolina community were encouraged to fill out a brief survey and put a point on UNC’s participation scoreboard.

With 6020 flu vaccines reported overall, Campus Health reported a 20% increase in flu vaccines given compared to the previous year, just at their location alone. In addition, EHS offered walk-in flu vaccinations to staff at nine locations, and vaccinations were also available at the Student Stores Pharmacy and Campus Health Pharmacy. The University Employee Occupational Health Clinic offers flu vaccinations for University employees who are part of the University’s Immunization Review Program.

“This was truly a community effort, and we are very grateful for your support and efforts in promoting this challenge,” said Ken Pittman, executive director of Campus Health Services. “We are hopeful that this campaign has raised awareness of the importance of flu vaccine and better prepared our community for the flu season.”

Alana’s Foundation was founded in 2009 with the mission of increasing influenza vaccination rates by educating the public and
increasing the affordability of annual flu shots. Alana’s Foundation targets college students with its vaccination competition because they believe instilling college students — “the caretakers of tomorrow” — with annual vaccinations as an important and impactful habit.

**Performance Chart**

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**Compliance**
Performance Activities

Education

• Educated SOD liaison regarding bloodborne pathogen exposures and protocols and continues to assist in this area.
• Developed web flyer summarizing UEOHC’s travel services and pre-travel requirements and updated travel request forms.

Customer Service

• Fit-tested and provided consultative services for 528 individuals under the University’s Respiratory Protection program.
• Provided occupational health medical services for 3900 employees.
• Assisted Department of Exercise and Sports Science with coordinating the incoming graduate students/employees for the Hepatitis B series.
• Collaborated with School of Nursing personnel to updated medical surveillance immunization history and determine needs.
• Provided travel immunizations reviews for employees traveling in the following areas: Kolkata India; Recife, Brazil; Kinshasa, DRC; Dehli, India; and Lilongwe, Malawi.
• Provided on-site Flu Clinics for the following areas: School of Nursing, Campus Health, Chancellor’s Office, Children’s Cochlear Implant Clinic, CLLC, School of Dentistry, 130 Friday Center, Old Clinic, and Victory Village.

Internal Processes

• Consulted with hospital occupational health to finalize revisions of bloodborne pathogen exposure protocol, and to look for ways to improve process for needlestick lab orders entered by other departments.
• Implemented pharmacy inventory monitoring system to track and analyze purchasing trends.
• Reviewed and updated procedures for scheduling incoming new Clinical Fellows along with a flyer outlining requirements.
Workplace Safety

OSHA's Update to the Respirable Crystalline Silica Standard

Respirable crystalline silica felt like an afterthought to OSHA by many in both construction and general industry. A rise in silicosis from fracking put it back on their radar, updating a standard they had not touched since the 1970s. To better align the standards and match current studies, OSHA matched both construction and general industry standards. The revised standard addressed new engineering controls and ensured current controls were in use for some of the more historically dusty tasks like concrete cutting. The main benefit to the University is that as long as employees follow the table provided by OSHA for engineering controls, employees will reduce potential exposure to respirable silica dust to minimum.

Environment, Health and Safety (EHS) was able to develop a better understanding of what areas in the University would be affected to OSHA's standard changes by hosting a discussion meeting with affected employees. This collaborative discussion enabled EHS to develop a training program that effectively relays to employees the importance of silica dust. For many, crystalline silica was a new phrase even though it is very common in many products that are in use around us on a daily basis. EHS conducted training that helped employees gain an understanding of what activities could create the dust and how to combat exposure during work.

EHS also conducted an assessment of tools and equipment utilized around Facilities Services to ensure it was up to date and stressed the importance of the tools and equipment being used as the manufacturer intended. Equipment recommendations were also made to Facilities Services senior management who authorized the purchase. The large equipment order included self-cleaning HEPA-filtered vacuums for affected shops as well as tools which would hook into those vacuums to prevent airborne dust. EHS believes this update to the standard continued to open up the dialogue between Facilities Services employees and EHS. This
has allowed for the growth of a positive safety culture that will continue into 2019 and beyond.

**Performance Chart**

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Performance Activities

Education

• Trained/Number of Employees:
  ○ Respiratory Protection/1,091
  ○ EHS Office, Clinic, IMAC, SS, Student Affairs/4,158
  ○ Joint Commission/4,168
  ○ Clinical Tuberculosis Infection Control/6,444
  ○ Clinical Bloodborne Pathogens/6,540
  ○ Ergonomic Self-Evaluations/48

• Provided Manual-Propelled Lift training for 50 “For the Kids” Dance Marathon Operations student fundraising, Memorial Hall, UNC Air Operations at RDU.

• Provided UNC Electrical Safety/Arch Flash trainings to 136 Facilities Service personnel.

• Developed and provided training on Silica Awareness under the new OSHA Crystalline Silica Standard to 248 employees.

• Provided Powered Industrial Truck practicals for 26 OWRR, Shipping/Receiving, and Surplus personnel.

• Provided Fall Protection training for 50 Memorial Hall and Thurston Bowles employees.

• Provided the following various trainings: CPR/AED, Fall Protection/PPE, HMP plans, Hot Work, blood-borne pathogen, scissor lift, fork lift.

• Updated 667 Personal Protective Equipment (PPE) employee records from approved Hazards Management Plans (HMP).

• Developed 40 JSAs and updated JSA library. Examples: Hand Truck, Band Saw, Portable Band Saw, Leg press equipment, Chainsaw (update), How to Handle a Drum, General pipe unclogging, Koury washdown steps, Wheelbarrow, Mopping, Short & Long Gas Pruner and backpack vacuum.

Customer Service
• Processed and managed 517 workers' compensation claims with medical treatment, return to work, hearings/mediations, and monthly expenditures.
• Conducted on-site inspections of 229 Hazards Management Plan (HMP) for numerous campus units and entered HMPs for work unit in the on-line HMP system.
• Developed Rescue Plans for the following roofs: Giles Horney, Morehead Planetarium, Medical School Wings E/F, Fetzer Hall, Carmichael Residence Hall, Hinton James Residence Hall, Bell Tower.
• Conducted safety evaluations for the following areas: Kenan Labs, Marsico Hall, Wilson Library, McColl Business School Parking Garage, Exterior Shop, Trailer 52, Cheek-Clark, Rams Head Parking Garage, Hill Hall and Swain Hall.
• Consulted on the following Fall Protection projects: Friday Center Project, Hanes Art, Rams Head Parking Deck, Cheek-Clark, MacNider Hall, Lewis and Everett Residence Halls, Phillips Hall, Hazards Waste Facilities, Memorial Hall, Kenan Labs, Thurston Bowles, East Chiller Plant and Mary Ellen Jones.
• Hazard Management Team held its first Shop Safety Fair. The fair provided shop employees with the opportunity to discuss safety equipment and PPE with various safety vendors.
• Evaluated and reviewed equipment used for silica dust. Equipment upgrades were suggested and implemented in various facilities shops. Silica policy was developed and implemented.
• Consulted with General Administration regarding workers’ compensation and safety questions.

**Internal Processes**

• Investigated 80 incidents: falls, equipment, PPE, materials handling, strains, and stuck in/between objects, etc.
• Assisted the Director of Emergency Management at UNC-Wilmington during Hurricane Florence.
• In preparation for Hurricane Florence, developed and formalized A Damage Assessment Team (DAT). Prepared a safety briefing, PPE, and DAT assessment Excel forms. Audited PPE supplies and made additional purchased.
• Assisted payroll with out-of-state workers’ compensation coverage.
• Prepared and submitted OSHA 300A and other various OSHA random surveys.
• Continued consultation with UNC Healthcare LMS course designer regarding content of courses that affect School of Medicine employees, requirements and database sharing in order to improve customer services.
Risk Management

Are You Tar Heel Mission Ready?

In compliance with the University of North Carolina at Chapel Hill Policy on Continuity Planning/Tar Heel Mission Ready Planning, all university departments are required to prepare and maintain a current plan of action for unexpected events which may disrupt their normal operations. Risk Management has purchased the Continuity of Operations planning software – Tar Heel Mission Ready to assist in the planning process.

What is Continuity of Operations?

Continuity of operations, or mission continuity, is the practice of planning for interruptions in order to provide maximum possible service levels.

Purpose?

Eliminate or reduce the impact of a disaster before a disaster occurs in order to provide a safe and healthy learning environment.

What is Tar Heel Mission Ready?

Tar Heel Mission Ready is user-friendly software created specifically for higher education. Tar Heel Mission Ready allows the creation, storage, and updating of departmental plans outside the UNC network. The software walks a user through the planning process, including identifying critical functions, analyzing the impact of disruption to those functions, identifying departmental dependencies, documenting key resources, uploading pertinent documents like call trees, generating action items, analyzing information technology resilience and managing a plan over time.

How Do I Create a Plan?
To get started, please complete the User Registration Form. Once an account has been created and access to your plan granted by the Risk Management team, a notification email will be sent with additional instructions. Tar Heel Mission Ready is accessible via Onyen login. The Risk Management team is available to walk departments through the process.

**Campus Dashboard**

The mission continuity project began in early October with software configuration and a subsequent rollout to the campus community. Two plans have been completed, and eight more are in progress.

**Performance Chart**

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Compliance
Performance Activities

Education

- Presented at the Study Abroad Office Pre-Departure Conference for Summer and Fall semester students.
- Meeting with the School of Pharmacy Executive Assistants at their monthly luncheon meeting to discuss travel procedures.
- Meeting with Property Office employees to discuss property options available and flood insurance.
- Meeting with Arts and Humanities Institute to discuss property insurance options available.
- Meeting with School of Nursing to discuss Tar Heel Mission Ready.

Customer Service

- Renewed automobile liability and other optional physical damage coverage for 1,343 vehicles which includes self-propelled mobile equipment.
- Managed 105 automobile claims.
- Uploaded 1,665 rosters of approximately 4,973 participants in the Study Abroad/Business Travel Program – Outbound group.
- Uploaded 34 rosters of approximately 131 J1 participants and dependents in the International Scholars Program – Inbound group.
- Renewed Property Insurance coverage which includes $5,569,082,493 in building value and $1,212,885,894 content values. TIV $6,781,968,387.
- Renewed All Risk coverage which includes values of $15,212,504 for Computers and Miscellaneous Equipment.
- Renewed Professional Liability for 14 Schools and individuals.
- Settled or managed various property claims: Property Damage caused by third party (2), Damage caused by Vehicle (18); Vandalism (7), Fire (7), Water Damage (4), Theft (6), Student Blanket Professional Liability (2), Employee Dishonesty (1), Wind (4), Sprinkler (1); Inland Marine Property Damage (3), Cyber (1); Power Surge (1); Transformer (1).

Internal Processes
• Ongoing Group meetings with Workers Compensation, University Counsel and Risk Management to address out-of-state employees.

• Collaborative Meetings with Emergency Management for Hurricane Florence claims.

• Attended quarterly meetings with Hazards Management Committee.

• Meeting with Pathology and University Counsel to discuss professional/general liability insurance for dual degree students.

• Athletic Accident Renewal Meeting IIANC, Cary, NC.

• Project Team Meetings for Mission Continuity software “Tar Heel Mission Ready.”

• Meeting with various departments for Tar Heel Mission Ready training.

• Meeting with Accounts Payable to discuss their updated vendor controls that positively effect cyber liability exposure.

• Meeting with Facilities and NorthStar to discuss recovery options available to the University.

• Toured University Development newly renovated offices on Franklin Street.

• Property Insurance Appraisals performed on the Dean E. Smith Center and Koury Natatorium.

• AIG Property Insurance Inspection of Wilson Library.

• Study Abroad and International Renewal Meeting with IIANC.
University Safety and Security Committee (USSC)

State regulations require each state agency (including universities) to create health and safety committees to perform workplace inspections, review injury and illness records, make advisory recommendations to the administration, and perform other functions determined by the State Personnel Commission to be necessary for the effective implementation of the State Workplace Requirement Program.

The USSC is responsible for reviewing and approving each of the workplace safety committee’s recommended safety policy and procedures. Once approved, the recommendations are forwarded to the Chancellor for approval before implementation.
Jonathan Pruitt
Chair, Safety and Security Committee; Vice Chancellor, Finance and Operations

Lorraine Alexander
Chair, Laboratory and Chemical Safety Committee; Clinical Associate Professor, Department of Epidemiology

Linc Butler
Associate Vice Chancellor for Human Resources

Vacant (delegated to Chris Payne)
Vice Chancellor for Student Affairs

Doug Cyr
Chair – Institutional Biosafety Committee; Professor, Cell & Development Biology

Beverly J. Errede
Co-Chair, Radiation Safety Committee; Professor, Department of Biochemistry and Biophysics

Judy Faubert
Assistant University Counsel

Craig Fletcher
Director, Laboratory Animal Medicine

David G. Kaufman
Co-Chair, Radiation Safety Committee; Professor & Vice Chair for Research Development

Derek Kemp
Associate Vice Chancellor for Campus Safety and Risk Management

Mary Beth Koza
Director, Department of Environment, Health and Safety

Terry Magnuson (delegated to Craig Fletcher)
Vice Chancellor for Research

**Jeff McCracken**  
Chair, Campus Personal Safety Committee; Director of Public Safety

**Chris Payne**  
Associate Vice Chancellor for Student Affairs

**Mitchell Picker**  
Chair, Institutional Animal Care and Use Committee (IACUC); Professor, Department of Psychology

**Jennifer Rees**  
Chair, Occupational Health and Clinical Safety Committee; Practice Facilitator, NC TraCs Institute

**Michael Rolleri**  
Chair, Hazards Management Committee; Associate Professor, Center for Dramatic Art

**Vacant (delegated to Judy Faubert)**  
Vice Chancellor and General Counsel; Office of University Counsel

**Cindy Taylor**  
Director, Environmental Health and Safety, UNC Hospitals

**Anna Wu**  
Associate Vice Chancellor for Facilities Services

**Committees**

**Laboratory and Chemical Safety Committee**

This committee focuses on the receipt, usage, storage, and disposal of chemicals along with the emerging issues of health and safety in the laboratory environment. The laboratory work environment consists of those work units that are subject to the OSHA Laboratory Standard
and laboratory EHS issues not pertaining to biological safety or radiation safety. The Lab Safety Committee is responsible for reviewing safety and health policies and procedures, reviewing incidents involving work-related fatalities, injuries, illnesses or near misses related to laboratory and chemical safety, reviewing employee complaints regarding safety and health hazards, analyzing work injury and illness statistical records related to laboratory and chemical safety, conducting inspections of laboratories and worksites utilizing chemicals at least annually and in response to complaints regarding safety or health hazards, reviewing training records related to laboratory and chemical safety, conducting meetings at least once every three months, and maintaining written minutes of such meetings.

2018 Accomplishments

• Implement Safety Supervisors subcommittee recommendations: training, annual meeting, FAQ, and/or incentives. (Continued in 2019)
• Examine historical injury data for cut/puncture and needle stick to target injury reduction and disseminate information using various modes of communication (updating trainings, safety fairs, posters, newsletters, etc.). (Complete)
• Distribute lab safety info by providing opt-in as part of LSP certification so all researchers receive info. (Removed)
• LCSC participate at Lab Safety Fair, demos to address cut/puncture, vendors, Chem Safety class involvement. (Continued in 2019)

2019 Goals

• Provide webpage for Lab Safety Supervisors that includes responsibilities and FAQs.
• Support bringing American Chemical Society (ACS) graduate student safety training to UNC-CH and have committee participate in training.
• EHS/Committee outreach at department/group/PI level regarding safety culture.
• Support and help integrate TarHeel Mission Ready/Continuity Plans into lab research.

Committee Members
Dr. Lorraine Alexander
   Clinical Associate Professor, Epidemiology; Chair, Laboratory and Chemical Safety Committee

Pat Boone, MSPH, CIH
   Assistant Director, UNC Healthcare Environmental, Health and Safety

Cathy Brennan
   Chemical Hygiene Officer, Environment, Health and Safety

Dr. Nita Eskew
   Director of Undergraduate Labs, Department of Chemistry

Dr. Anthony Hackney
   Professor, Physiology and Nutrition, Exercise and Sport Science

Michael Liang
   Graduate Student, Chemistry

Dr. Rihe Liu
   Associate Professor, Medicinal Chemistry & Natural Products, Pharmacy

Todd O'Buckley
   Research Specialist, Alcohol Studies Center

Jim Potts
   Associate Chemical Hygiene Officer, Environment, Health and Safety

Dr. Kathryn Reissner
   Assistant Professor of Psychology

Dr. Sarah Scarry
   Research Assistant Professor, Center for Integrative Chemical Biology and Drug Discovery, School of Pharmacy

Dr. Nick Tsihlis
Institutional Biological Safety Committee

The IBC is responsible for the oversight, administration, and review of UNC-CH Lab policies and projects involving research with rDNA and hazardous biological materials that may pose safety, health, or environmental risks. To this end, the IBC assists and advises Principal Investigators and other researchers in meeting their responsibilities to ensure that the biological aspects of the research are conducted in a safe manner using established biosafety standards, principles and work authorization. Safe research includes worker safety, public health, agricultural and environmental protection, ethics, and compliance with applicable biosafety standards and UNC-CH policies.

2018 Accomplishments

- Updated IBC management system to send out multiple automatic reminders to Principal Investigators to notify them of IBC protocols approaching expiration.
- Streamlined review process for Schedule G protocols that are renewals of approved protocols.
- Improved the process for review of Schedule H protocols to minimize impact on dependent IACUC reviews and approvals.

2019 Goals

- Evaluate the IBC oversight program for compliance with the requirements articulated in the NIH Guidelines (2019) using the Self-Assessment Tool for IBC Programs generated by the NIH.
- Incorporate regular training opportunities on the monthly agenda as part of continuing education for the IBC Committee.

Committee Members

Doug Cyr, PhD
Chair, Institutional Biosafety Committee and Professor, Cell & Development Biology

Victoria Baxter, DVM, PhD, DACLAM
Assistant Professor, Division of Laboratory Animal Medicine

Sandra F. Bradshaw
Laboratory Supervisor, Orange Water & Sewer Authority

Garry Coulson, PhD
Biological Safety Officer, Environment, Health and Safety

Aravinda Desilva
Professor, Medicine, Microbiology and Immunology

Craig Fletcher, DVM, PhD, DACLAM
Director, Division of Laboratory Animal Medicine

Mary Beth Koza, MBA
Executive Director, Environment, Health and Safety

Stanley M. Lemon, PhD
Professor, Medicine, Microbiology and Immunology

Eric Lewis
Biosafety Specialist, Environment, Health and Safety

Ann Matthysse, PhD
Professor, Department of Biology

Jessica Poole
Associate Biosafety Officer, Environment, Health and Safety

Keith Porterfield
Assistant Fire Chief, Chapel Hill Fire Department
Barbara Savoldo, MD, PhD
Research Professor, Pediatrics, Hematology and Oncology

Amy C. Sims, PhD
Research Associate Professor, Epidemiology

Xiao Xiao
Professor, Pharmacy

**Occupational Health and Clinical Safety Committee**

This committee focuses on Occupational Health services for University personnel and the emerging issues of health and safety for employees working in the clinic environment. The clinic work environment is primarily characterized by activities involving patient contact and exposure to blood or other potentially infectious materials. The clinical work environment frequently has additional health and safety requirements imposed by accreditation organizations, such as the Joint Commission.

**2018 Accomplishments**

- Included pilot for new employee and faculty orientation in the School of Medicine. Identified employees who are “clinical” and worked to ensure compliance through a clinic visit within the first days of employment. Ongoing to roll out to other professional Schools (Nursing, Dentistry, Public Health, Pharmacy).
- Ongoing continued review of OSHA recordable. Outreach to chair of departments that had high incident rates (both department chairs have retired, continued efforts with new department chairs).
- Ongoing review of training requirements for New Employee Orientation – Clinic. Renewed emphasis on the culture of safety, especially around preventable BBPs and needle stick incidents.
2019 Goals

- Work on development of education and communication materials to inform departments of:
  1. Hazard coding in Connect Carolina
  2. Healthcare employees and EHS training requirements

Committee Members

James Hawkins
HR Date/Reporting Manager, Medicine Administration; Chair, Occupational Health and Clinical Safety Committee

Debi Bergman
Worker’s Compensation/Clinical Hygienist, Environment, Health and Safety

Benny Burton, Sr.
Facility Maintenance Technician, Facilities Services, Building Services

Mary Crabtree
Workplace Safety Manager, Environment, Health and Safety

Abby Fisher
Business Manager, Obstetrics and Gynecology

Dr. James Hill
Clinical Assistant Professor, Physical Medicine/Rehabilitation, Medical Director-UEOHC

Jane Kerwin
Director, Clinical Support Division, School of Nursing

Ryan Meehan
Environment of Care Manager, Campus Health Services

Jennifer Rees
Nurse Supervisor, TraCS Institute
John Sledge
Human Resources, Pediatrics

Tracy Wetherby Williams
Director of Clinical Compliance, School of Dentistry

Charlene Womble
Administrative Specialist, School of Nursing

Clinical Occupational Exposure Subcommittee
The mission of the Clinical Exposure Subcommittee is to identify and address clinical occupational hazards that undergraduate and professional students are exposed to as part of their clinical training. This subcommittee reports to the Occupational Health and Clinical Safety Committee.

Subcommittee Members

Meg Beal
Physician’s Assistant Program

Susan Beck
Allied Health Sciences

Jennie Brame
Dental Ecology

Alan Brown
AHEC
Michelle Camarena
Campus Health Services

Thevy Chai
Campus Health Services

Ann Chelminski
Campus Health Services

Andrew Clapper
Pharmacy

Kayla Conley
Allied Health Sciences

Susan Coppola
Occupational Therapy

Georgette Dent
Medicine

Marty Folliard
Dentistry

Melody Gibson
Campus Health Services

James Hill
Medicine

Jane Kerwin
Nursing

Mary Beth Koza
Environment, Health and Safety

Carol Kozel
Campus Health Services

Bernice Mayo
Medicine

Dana McCarty
Physical Therapy

Kathy Moore
Nursing

Martha Mundy
Audiology

Andrew Murrell
Nursing

Joy Renner
Radiologic Science

Wendy Ross
Allied Health Sciences

John Schimmelfing
Campus Health Services

Judy Schmidt
Rehab & Mental Health Counseling

Hannah Siburt
Audiology
Elizabeth Steadman  
  Medicine  

Laine Stewart  
  Allied Health Sciences  

Annetta Streeter  
  Dentistry  

Mercedes Tolbert  
  Pharmacy (Asheville)  

Sandra Void  
  Laboratory Science  

Jessica Ward  
  Nursing  

David Weber  
  UNC Hospitals  

Tracy Williams  
  Dentistry  

Peggy Wilmoth  
  Nursing  

Brad Wingo  
  Pharmacy  

Hazards Management Safety Committee
This committee focuses on the emerging issues of health and safety for employees working in the office, support services, and industrial, maintenance/construction work environments. The support services work environment consists of activities that are conducted outside of the office environment, usually involve public contact and may involve hazardous materials. These environments can include the Department of Public Safety, Department of Environment, Health and Safety, Material Support, and Housekeeping. The industrial, maintenance and construction work environment consists of those work units whose primary activities are performed at various locations around campus and at fixed locations, using industrial-type machines and equipment. These units include Facilities Services, Electrical, Plumbing, HVAC Shops, Grounds, Athletics, Finley Golf Course operations, and Electronics Office Service Center and some academic shops.

2018 Accomplishments

- Implement Safety Supervisors subcommittee recommendations: training, annual meeting, FAQ, and/or incentives. (Continued in 2019)
- Examine historical injury data for cut/puncture and needle stick to target injury reduction and disseminate information using various modes of communication (updating trainings, safety fairs, posters, newsletters, etc.). (Completed)
- Distribute lab safety info by providing opt-in as part of LSP certification so all researchers receive info. (Removed)
- LCSC participate at Lab Safety Fair, demos to address cut/puncture, vendors, Chem Safety class involvement. (Continued in 2019)

2019 Goals

- Provide webpage for Lab Safety Supervisors that includes responsibilities and FAQs.
- Support bringing American Chemical Society (ACS) graduate student safety training to UNC-Chapel Hill and have committee participate in training.
- EHS/Committee outreach at department/group/PI level regarding safety culture.
- Support and help integrate TarHeel Mission Ready/Continuity Plans into lab research.
Committee Members

Michael Rolleri
   Associate Professor of Dramatic Art; Chair, Hazards Management Committee

Brad Barnes
   Energy Services

Christine Bhirdo
   Assistant Operations Director, Laboratory Animal Medicine

Mary Crabtree
   Workplace Safety Manager, Environment, Health and Safety

Lisa Daley
   Human Resources Manager, Energy Services

Richie Grimsley
   Athletics

Deborah Hawkins
   Transportation and Parking

Mary Beth Koza
   Director, Environment, Health and Safety

Tonya Miller
   Laboratory Animal Medicine

Drew Nicholson
   Risk Management Services

David Sharpe
   Life Safety Services
Phillip Spangler  
School of Law  

Neah Tucker  
EHS  

Shawn Womack  
Housekeeping Services  

Radiation Safety Committee

The Radiation Safety Committee is responsible for establishing policies governing the procurement, use, storage and disposal of radioactive materials and radiation-producing devices. The Committee includes individuals experienced in the use or application of radioactive materials and radiation devices and provides a peer review of these uses among researchers at the University. The Committee meets at least quarterly to review reports on the receipt and disposal of radioactive materials/radiation-producing devices, and to act on applications for authorization to use these sources. The Committee, along with its Chairman, is appointed by the Chancellor. It makes an annual report of activities to the Vice Chancellor for Finance and Operations.

2018 Accomplishments

- Establish safety program for the cyclotron facility
- Renew radioactive materials license for UNC Nutrition Research Institute
- Train UNC Police and UNCH Police Officers on the use of PRDs (Personal Radiation Detectors)

2019 Goals

- Review Radiation Safety Committee (RSC) Policy Statement. This is in the “Radiation Protection Program Policy Manual” which
is tied to our Radioactive Materials (RAM) license as a license condition.

- Provide an educational in-service at an RSC meeting on emergent technology with regards to RAM use or radiation producing machines.

**Committee Members**

**Dr. David G. Kaufman, MD**
Professor & Vice Chair for Research Development, Co-Chair, Radiation Safety Committee

**Dr. Beverly J. Errede**
Professor, Biochemistry & Biophysics, Co-Chair, Radiation Safety Committee

**Dr. Louise M. Ball**
Professor, Environmental Science & Engineering

**Dr. Marija Ivanovic**
Clinical Associate Professor, Radiology

**Mary Beth Koza, MBA**
Director, Environment, Health and Safety

**Dr. Jian Liu**
Associate Professor, Medicinal Chemistry/Natural Products

**Dr. Jeff Sekelsky**
Associate Professor, Biology

**Dr. Roger Sit**
University Radiation Safety Officer, Environment, Health and Safety

**Dr. Rita Tamayo**
Assistant Professor, Microbiology and Immunology

**Dr. Zhanhong Wu**
Assistant Professor, Radiology

Dr. Hong Yuan

Director, BRIC Small Animal Imaging Facility
## EHS Compliance Report

<table>
<thead>
<tr>
<th>Date</th>
<th>Agency</th>
<th>Citations</th>
<th>Description</th>
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<tr>
<td>2/1/2018</td>
<td>NCDOL</td>
<td>No Citations</td>
<td>Fire safety inspection</td>
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<td>2/7/2018</td>
<td>NCDHHS - Radiation Materials</td>
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<td>Limited scope (authorized users)</td>
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<td>8/7/2018</td>
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<td>NCDEQ &amp; EPA</td>
<td>No Citations</td>
<td>HMF/Main Campus Hazardous Waste Inspection</td>
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Awards

2018 EHS Employee of the Year

Jessica Poole

Jessica Poole has been selected as the 2018 Employee of the Year for her exemplification of dedication to the University and her role as quarterback of the University’s high containment biosafety program. She is a true professional — always giving her best and expecting the best out of all the folks she works with. She handles concerns and issues in a calm, professional manner and has become a subject matter expert in the regulatory requirements related to our high containment program. Jessica demonstrates continuous improvement by seeking innovative ways of conducting required annual training which encourages participation by the labs. She is a perfect example of the EHS motto “Be All You Can Be” and “Strive Towards Excellence.”

History of the Award

The Employee of the Year of Award was started in 2000 in recognition of an employee who met the mission of the organization and whose performance went above the norm. Former director Peter Reinhardt initiated the award. Beginning that first year, a traveling trophy was created and represents the past and future as the base of the trophy is the base of a lamp in the office of the first director of the department, Don Willhoit. The recipient is chosen by the director and emulates the values of the organization.

Core Values of the Department
• Be a safe haven of trust, respect and open communication.
• Foster constructive debate when appropriate.
• Be a resource for new ideas and innovation.
• Establish state of the art EHS protocols & procedures.
• Utilize time and resources efficiently.
• Value and encourage individual growth and development.
• Collaborate and support each other through the twists and turns.

2018 Collaboration Award

Hurricane Florence Response and Recovery

Erika England, Mary Crabtree, Cathy Brennan, Steve Parker, and Michael Novitzky

This team went above and beyond their daily responsibilities by supporting the Hurricane Florence response and recovery activities at the UNC-Wilmington campus. Each individual traveled to the site and stayed to assist in EHS response activities. Examples of these activities were initial damage assessment, hazardous waste vendor identification and support of the Emergency Operations Center.

Collaboration Award

In 2010, the department instituted a Collaboraton Award in order to emphasize the department’s core values and to support the attribute of collaboration among EHS employees and between EHS employees and other University employees (or other groups or organizations).

EHS Core Values & Collaboration

• Value and encourage individual growth and development.
• Collaborate and support each other through the twists and turns.
• Be a safe haven of trust, respect, and open communication.
• Foster constructive debate when appropriate.

Qualifications for the Award
The recipient must exhibit outstanding contribution to collaboration by fulfilling one or more of the following attributes:

- Agreement about objectives;
- Respect for specialist expertise of another person;
- Joint working, shared effort, shared responsibilities;
- Blurring of professional boundaries (no use of rank in process);
- Open and transparent lines of communication within groups and between people;
- Behavior that instills confidence and respect for others;
- Open and full discussions of all issues (no shortchanging of another person’s idea); and,
- Empathy for others.
Appointments, Achievements and Presentations

Appointments

- Aly Ryan was appointment PA for the University Employee Occupational Health Clinic.
- Eric Lewis, Ph.D joined the Biological Safety Section as Biosafety Specialist.
- Ashley Hester was appointed Fire Safety Specialist.
- Nick Caligari was promoted to Chemical Safety Specialist II.
- Travis Wilson was appointed Chemical Safety Specialist.
- Adam Swift was promoted to Fire Safety & Emergency Response Manager/Fire Marshal.
- Taylor Moore joined the Occupational and Environmental Hygiene section as University Industrial Hygienist.
- Nicholas Gill joined the Workplace Safety section as WPS Field Specialist.
- Rashad Saleem Carlson was promoted to Admin Support Associate for EHS/Risk Management.

Achievements

- Mary Crabtree was elected to the Campus Safety Health Environmental Management Association (CSHEMA) executive board of trustees. She completed her term as Past President in July 2018.
- Roger Sit received the “Larry Keith Teaching Award” in Radiologic Science.
- Steve Guarino passed Part 1 of the American Board of Health Physics certification exam.
- Jonathan Moore successfully accomplished recertification with the American Board of Health Physics.
• Jonathan Moore served on the “Ask an RSO” Panel at the 2018 CSHEMA Annual Conference in Baltimore.
• Garry Coulson was certified as a Registered Biosafety Professional (RBP) with the American Biological Safety Association (ABSA).
• Eric Lewis was certified as a Registered Biosafety Professional (RBP) with the American Biological Safety Association (ABSA).
• Erika England highlighted by UNC Gillings School of Global Public Health Public Health Leadership Program for her “Public Health in Action.”
• Emily Powell became a Certified Fire Protection Specialist (CFPS).
• Emily Powell and Adam Swift became certified for Technical Rescuer Confined Space.
• UNC EHS and Department of Chemistry shared the 2018 Safety Stratus College and University Health and Safety Award presented by the American Chemical Society.

Presentations

• Cathy Brennan presented a poster (Chemical Safety for Laboratory Animal Handlers) and gave a presentation (Fostering a Culture of Safety at UNC-CH) at the American Chemical Society National Meeting in Boston, MA.
• Steve Parker gave a presentation (Inspected by EPA Region 4 and NC-DWM On Day One of the New Generator Improvements Rule Implementation) at the College & University Hazardous Materials Management Conference in Buffalo, NY.
• Mary Beth Koza gave the following presentations:
  ○ "Culture of Safety" professional development seminar – Campus Safety Health Environmental Management Association (CSHEMA), July 2018
  ○ Safe Laboratory Practices for UNC-CH – Responsible Conduct of Research, July 13, 2018
  ○ "How Does an EHS Professional Engage Their Audience?“ – American Chemical Society, August 2018
“The Importance of Business Continuity and Emergency Planning for Research” – American Chemical Society, March 2019
EHS Performance Highlights

Biological Safety

- Trained 1,080 researchers in basic principles of conducting research at BSL-2, such as proper technique and waste handling and trained 168 researchers in enhanced BSL-2 procedures.
- Certified 481 campus biological safety cabinets ensuring safety of product, personnel and environmental protection.
- Reviewed and approved 543 Laboratory Safety Plans’ Schedule F (Biological Hazards).
- Reviewed and approved 315 Laboratory Safety Plans’ Schedule G (Recombinant or Synthetic DNA).

Chemical and Laboratory Safety

- Trained 1,919 new laboratory employees on Laboratory Environment through online self-study.
- Reviewed 775 new and/or updated laboratory safety plans and reviewed deficiencies with principal investigators and safety supervisors, ensuring compliance with the University’s Chemical Hygiene Plan.
- Inspected 1,250 chemical fume hoods and submitted 50 Facilities Services repair requests for fume hoods.
- Uploaded 417 chemical inventories into online system and reviewed 380 annual inventory updates as part of Chemical Hygiene Plan compliance.
- Trained 6,430 employees on Sub-part K Hazardous Waste Management new rules through online training.
- Provided 611 collaborative laboratory inspections.

Environmental Affairs
• Trained 1,919 employees on Managing Laboratory Generated Hazardous Waste through orientation safety online training.
• Conducted 11,355 waste pickups of 61,241 kg of hazardous waste and 101,236 kg of non-hazardous solid waste from University generators.
• Shipped 103,310 kg of waste from the UNC-CH TSDF to an offsite vendor TSDF for treatment and disposal.
• Aided with controlled substances drug disposal on campus which included 20 visits by DHHS Drug Control Unit for 28 lab visits/inspections.

Fire Safety & Emergency Response

• Provided fire safety coverage to seven home football games, 15 home men’s basketball games.
• Inspected 6,732 campus fire extinguishers.
• Investigated and documented 267 false fire alarms during calendar year 2018.
• Installed 14 emergency key boxes (“Knox Boxes”) on the UNC campus and worked with Facilities Services to include at least six additional Knox Boxes on capital construction projects during 2019
• Performed over 289 fire drills for UNC buildings

Occupational and Environmental Hygiene

• Trained 564 Maintenance, Housekeeping, and Design and Construction Services employees in asbestos awareness through online and in-class training.
• Coordinated mobile hearing tests for 235 employees enrolled in the Hearing Conservation Program, saving $5.7K for the tested departments.
• Trained 386 employees enrolled in the Hearing Conservation Program on Occupational Noise Safety through in-class and online training
• Trained 271 employees from Facilities Services, Energy Services and UNC-CH Police on confined space via in-class and online training.
Radiation Safety

- Administered radiation safety training courses to 2,106 persons and non-ionizing radiation safety training to 606 persons.
- 439 radiation safety laboratory inspections were conducted.
- Inspected and tested 278 X-ray tubes
- Services were provided to the hospital and patients for 219 radiation-related procedures
- Hosted six Nuclear Medicine Technology students for two-week rotations through radiation safety as part of the NMT didactic program.

University Employee Occupational Health Clinic

- Provided occupational health medical services for 3,900 employees.
- Fit-tested and provided consultative services for 528 individuals under the University’s Respiratory Protection program.
- Trained/Number of Employees:
  - Respiratory Protection: 1,091
  - EHS Office, Clinic, IMAC, SS, Student Affairs: 4,168
  - Joint Commission: 4,233
  - Clinical Tuberculosis Infection Control: 6,444
  - Clinical Bloodborne Pathogens: 6,540

- Processed and managed 51 workers’ compensation claims with medical treatment, return to work, hearings/mediations and monthly expenditures.
- Conducted on-site inspections of 229 Hazards Management Plan (HMP) for numerous campus units and entered HMPs for work unit in the online HMP system.
- Investigated 80 incidents on campus for falls, equipment, PPE, materials handling, strains and stuck in/between objects.
Risk Management

- Renewed automobile liability and other optional physical damage coverage for 1,343 vehicles which includes self-propelled mobile equipment.
- Renewed Property Insurance coverage which includes $5,569,082,493 in building value and $1,212,885,894 content values. Total Insured Value: $6,781,968,387.
- Settled or managed various property claims:
  - Property Damage caused by third party: 2
  - Damage caused by Vehicle: 18
  - Vandalism: 7
  - Fire: 7
  - Water Damage: 4
  - Theft: 6
  - Student Blanket Professional Liability: 2
  - Employee Dishonesty: 1
  - Wind: 4
  - Sprinkler: 1
  - Inland Marine Property Damage: 3
  - Cyber: 1
  - Power Surge: 1
  - Transformer: 1
- Renewed Professional Liability for 14 Schools and individuals