SAFETYMATTERS

Volume 20 Issue 1 | COLUMBIA UNIVERSITY EH&S | Winter 2026

Inside this Issue

Environmental Health & Safety

Website
http://ehs.columbia.edu

Irving Medical Center
Phone: (212) 305-6780

Morningside and Manhattanville
(212)-854-8749

Radiation Safety
Phone: (212) 305-0303

Instagram

@columbiaehs

The Radioactive Material Supply Chain: How We Get the RAM We Need for Research and Medicine

By Peter Caracappa, Chief Radiation Safety Officer

Radioactive material, or RAM, has come to be used extensively in a number of fields of research (biology, chemistry, physics) as well as in medicine for both diagnosis and therapy. With a small handful of exceptions, most of the materials that are used for these purposes have short half-lives, meaning the material disappears over a period of time – weeks or months, and sometimes as little as hours.

Like many things in daily life, most people simply turn to the store (or more likely, the internet) for the things they need – or in this case to one of the suppliers of radioactive isotopes – without much regard for what it takes to get the product to the warehouse or store shelves on its way to them. Since short half-life RAM is constantly disappearing, can't be found in nature, and can't be mined, it is not something that can be stockpiled for a future need.

Instead, this material has to be created more or less as needed.

There is a small subset of materials that can be generated in compact cyclotrons, mostly isotopes that are used for Positron Emission Tomography, or PET imaging. These tend to have half-lives on the order of minutes, so they can only be transported a relatively short distance between where they are produced and where they are needed. Sometimes they need to be produced right on the site where they are used in order to be available at all. But on the positive side, these cyclotrons can be built more or less anywhere. There are issues with supplying rural, remote, low population-density areas, but the technological barriers to providing these isotopes are minimal.

This luck runs out, however, when it comes to most of the rest of the specialized radioactive materials that the world needs. These have to be created in a nuclear reactor. And not just any nuclear reactor, like the ones that are used to produce electricity, but ones that are specially designed to produce radioactive isotopes. They come out of the reactor from one of two physical processes: either as fission products or activation products. Fission products are the residual materials that result from atoms that split in a reactor containing a mix of many different products, from which the desired isotopes are chemically extracted. Activation products come from placing stable, naturally occurring materials into the center of a nuclear reactor where there is a very high number of neutrons (produced in the fission process). Some of these neutrons get absorbed by the target material, transforming it from a stable isotope into a radioactive one, that again is extracted and processed for use.

The supply chain for these reactor-based isotopes is precarious. There is only a small handful of reactors that have the capabilities to produce the isotopes needed. Most of them are old (some very old), requiring extensive ongoing maintenance, and sometimes prone to shutting down suddenly and unexpectedly to deal with an issue. One of the biggest sources of these isotopes, the Chalk River reactor in Canada, shut down permanently in 2018 (after decades of production) due to ongoing operational problems. Other reactors are scattered across the globe, in Europe, South Africa, Argentina, Indonesia, Australia, and Japan, with very little of the supply from US sources. Shipping snarls and geopolitical concerns can also throw a wrench into the process of getting these materials where they need to be.

The fragility of the supply chain has been well known for a while, and yet progress is slow. New reactors are planned, but are years in the making. Several US startups have received government grants to explore new domestic sources, including the use of alternate (non-reactor) technologies, but there has been no new ongoing supply as of yet (one of these companies briefly produced commercial isotopes in the US, but ceased production in 2023).

Unfortunately, researchers, doctors, and their patients can be left in the lurch when disruptions ripple through the supply chain. The material needed for next week's experiment or patient scan may not be available when it is needed.

In today's world, we are used to getting what we want, exactly when we want it. With radioactive materials, this may not always be the case!

SAFETYMATTERS
COLUMBIA UNIVERSITY EH&S
Volume 20 Issue 1
Winter 2026

The Spirit of the NIH Guidelines

By Cody Cameron, Senior Biosafety Officer

With over half a century of federal oversight, will the rules governing research change or remain the same? In order to move forward, we must also look back in time.

The NIH Guidelines for recombinant DNA and synthetic nucleic acid were initially established following the Asilomar Conference on Recombinant DNA in 1975. The Asilomar Conference was held as a forum for leading scientists to discuss concerns regarding potential biohazards that could be presented by emerging recombinant DNA technologies. The recommendations that arose from the conference for physical biocontainment, strict adherence to good microbiological practices, and prohibited experiments would become a comprehensive framework embodied within the NIH Guidelines. This framework provides direction to researchers for performing biological risk assessments and ensures that effective containment measures matching the risk of the pathogen and potential experimental effects are in place. Today, while responsibilities for the oversight of rDNA work have shifted, that original framework is still the basis for biosafety review. And more changes may be coming.

Following Asilomar, the National Institutes of Health (NIH), implemented the Guidelines through its Recombinant DNA Advisory Committee (RAC), which for decades was charged with conducting a mandatory, protocol-specific review process to ensure the safety controls and ethical considerations commensurate with the perceived risk were applied to the experiments under its consideration. After 20 years of enforcing the NIH Guidelines the RAC's initial oversight would grow into other areas, included shared responsibility along with FDA for providing primary oversight of human gene therapies characterized as biological drugs. This expansion of the RAC's scope necessitated a change to its oversight function, leading to the IBC structure that exists today.

As the RAC began to shift its focus to complex or novel experiments rather than routine rDNA reviews, local Institutional Biosafety Committees (IBCs) were mandated. IBCs were tasked with the purpose of providing review and oversight to virtually all forms of work with recombinant or synthetic nucleic acids, along with additional responsibilities at the discretion of the local institution. Local IBCs effectively served as an extension of the RAC, acting as sentinels of the NIH Guidelines to decentralize and provide oversight of rDNA work. In this way, the Asilomar Conference framework lives on under the jurisdiction of the IBCs, implemented by all institutions under the NIH umbrella.

Science has matured significantly since the 1970's and so with it the oversight functions of the RAC. The initial biosafety concerns surrounding rDNA have been mitigated through well-established protocols, procedures, and strict biocontainment provisions. By 2019, multiple layers of oversight and responsibility had created a robust redundancy to the review of recombinant DNA research. The RAC's independent, protocol-specific review functions were therefore deemed unnecessary due to the duplicative oversight of multiple stakeholders. The RAC instead began to refocus on the leading edge of science: novel, and exceptional technologies that present unknown hazards. In 2019, the RAC officially dissolved and refocused its mission on the oversight of emerging biotechnologies through the formation of the Novel and Exceptional Technology and Research Advisory Committee (NExTRAC). The tools that NExTRAC uses to execute this function have been built upon almost 50 years of review and oversight under the NIH Guidelines. And while there was initial skepticism surrounding the dissolution of the RAC the "spirit of the NIH guidelines" and the decades of knowledge gained through their implementation live on.

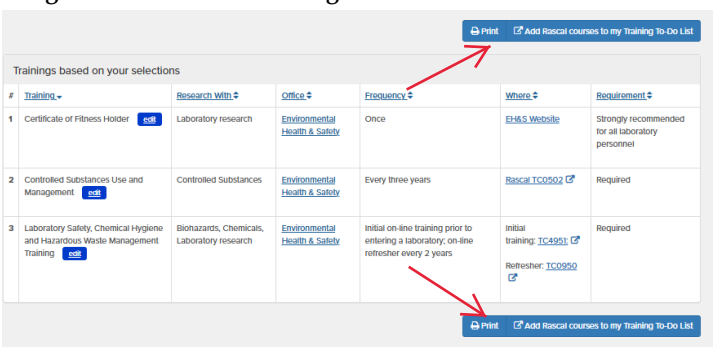
Over 50 years beyond its inception, the NIH has now begun a modernization initiative to reinforce, strengthen and adapt the Guidelines to a biosafety framework that will remain for another 50 years. The NIH has opened its ears to the public in order to understand the needs of the community and provide equitable support and resources to its local review entities. While many would like a stepwise checklist on how to conduct a risk assessment for the unknown,science and technology are vast and ever developing, often outpacing current perceptions and beliefs. Above all the spirit of the NIH Guidelines has and will always persist not just in the next generation of the Guidelines, but every local committee, biosafety professional and scientist alike who practice and align themselves with the original mission of the RAC.

https://pmc.ncbi.nlm.nih.gov/articles/PMC6171167/#:~:text=Main%20Text,chimeric%20DNA%20molecules%20into%20humans

https://www.nih.gov/about-nih/nih-director/statements/nih-launches-initiative-modernize-strengthen-biosafety-oversight

How Do I Know What Training I Need? Use the Training Finder!!

The Research Compliance Training Finder is an interactive that identifies which research compliance training modules an individual may be required to take. Using a series of research-related questions, the Finder creates a personalized chart of required and recommended training courses, complete with links to the training and the responsible offices. The identified trainings can be added to your Rascal Training To-do List by the click of a button!



CUIMC Georgian Fire Drill

EH&S participated in the fire drill led by Matthew O'Hanlon, Director of Fire Safety, Facilities Management on October 21, 2025. Pictured is Ashley Boyce, HR, with Matt putting out a simulation fire.

Relocating or Vacating a Laboratory - Here's What To Do

Research Scientists vacating Columbia University facilities or relocating within the system are responsible for leaving laboratories in a state suitable for re-occupancy or renovation. Environmental Health & Safety (EH&S) must be notified of all moves in laboratory spaces. Upon notification, EH&S will inspect the laboratory space.

Please use the links provided to learn more on this complex process.

https://research.columbia.edu/system/files/EHS/ProjectManagers/LabRelocationGuide.pdf?check_logged_in=1

https://research.columbia.edu/procedures-vacating-laboratory

Lab Managers Make a Difference

Here's to the lab managers who keep our work safe! Your leadership and attention to detail make all the difference in the safe use of unsealed radioactive materials.

Lab Manager	PI
Crystal Bussey	Ghosh
Elzbieta Dombroski	Nandakumar
Brian Lee	Zha
Tongwei Mo	Dalla-Favera
Ray Octaviano	Tanji
Alexis Resendez	Quick
Jorge Arriaza Sagredo	Wardlaw
Norman Simpson	Underwood/Mann
Yu Sun	Gu

Columbia University Public Access Defibrillator (PAD) Program and CPR Training Opportunities

By Kathleen Crowley, DrPH, MPH, PA-C

Program Overview

Columbia University is committed to the safety and well-being of its students, faculty, staff, and visitors. To enhance campus safety, the University established the **Public Access Defibrillator (PAD) Program** to provide life-saving assistance during cardiac emergencies requiring the use of an **Automated External Defibrillator (AED)**.

Following the guidelines of the Regional Emergency Medical Services Council of New York City, the program includes strategically placed AEDs across Columbia's campuses and provides training for University personnel to respond effectively to cardiac arrests. Learn more about the program on the Columbia Preparedness website.

AEDs and Sudden Cardiac Arrest

Sudden cardiac arrest occurs when the heart unexpectedly stops beating. According to the **American Heart Association (AHA)**, more than 350,000 out-of-hospital cardiac arrests occur annually in the United States, with survival rates of just over 10%. Immediate CPR and AED use dramatically improve the chances of survival. AEDs are a vital link in the chain of survival and the only proven method to restore a normal heart rhythm during cardiac arrest.

CPR Training Classes

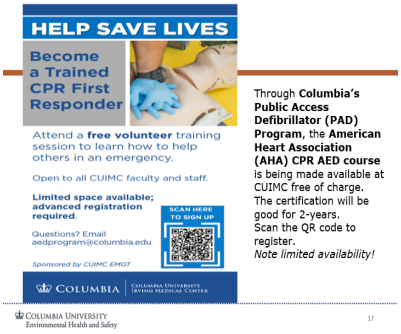
Become a trained CPR first responder and help save lives. Attend a **free volunteer training session** to learn how to assist in an emergency. Space is limited, and advanced registration is required.

Upcoming Session:

- **Wednesday, December 3 | 9–11 a.m.**

Georgian Building, 617 W. 168th Street, 2nd Floor, Room 252

Register Now



AED Locations

AEDs are located in the lobbies of buildings across the **Morningside, Manhattanville**, and **Irving Medical Center** campuses. In addition, **Public Safety patrol vehicles** and the **Columbia University Emergency Medical Service (CUEMS)** ambulance are equipped with AEDs to provide rapid response and mobility.

- Morningside Campus Map
- Manhattanville Campus Map
- Irving Medical Center AED Locations

General Program Information

For more information about the AED Program or CPR training opportunities, or to report an issue with an AED, please contact aedprogram@columbia.edu.

Cold Weather Safety Tips

When you are outside, frostbite and hypothermia are possible so you need to protect yourself.

1. Wear layers of loose-fitting, lightweight, warm clothing.
2. Wear a hat. Try to stay dry and out of the wind.
3. Cover your mouth to protect your lungs from extreme cold.
4. Mittens, snug at the wrist, are better than gloves.

https://www.weather.gov/media/aly/PSAs/ExtremeCold.pdf

Meet the EH&S Staff

Katie Fritz

Associate Biosafety Officer

Environmental Health & Safety (EH&S) team is pleased to introduce Katherine "Katie" Fritz, who joined the department in October 2024 as an Associate Biosafety Officer. Though new to Columbia, Katie has already demonstrated a thoughtful approach to problem-solving, a strong work ethic, and a genuine passion for supporting safe and responsible research.

Originally from Buffalo, New York, the historic "City of Light", Katie brings both hometown pride and a down-to-earth perspective to her work. When asked what animal best matches her personality, she chose the fox—independent, intuitive, and adaptable—traits that reflect her curious and steady nature.

Katie spent many years as a competitive dancer and later performed on Binghamton University's dance team, where she earned her degree in Biology. Dance instilled the discipline, focus, and persistence she now applies in complex scientific environments. At Columbia, she recently joined the Federal Select Agent Program to perform inspections within the ABSL-3 facility, gaining hands-on experience with high-containment research and laboratory safety.

Katie believes growth comes from embracing new challenges. The best professional advice she's received is that it's never too late to start something new; you're not locked into one career path and can always pursue work that feels more fulfilling. She values meaningful contributions and is motivated by her family and friends, who inspire her to be someone they can always rely on.

Outside of work, Katie enjoys reading during her commute, going to the gym, walking her dog, and watching her favorite shows. A proud Buffalo Bills fan, she'll always have a soft spot for her snowy hometown—though she dreams of someday living somewhere warmer, perhaps by the ocean, where she can trade lake-effect snow for sea breezes. Her love of the outdoors and the natural world also fuels her hope to see a future where environmental protection and human progress truly go hand in hand.

Her favorite quote reflects her balanced perspective on life: "It will never be as easy as you hope, but you'll find it is rarely as hard as you fear." – Morgan Nikola-Wren

Chara Proud

Health and Safety Specialist

Chara Proud is a dedicated Health and Safety Specialist, within the Occupational Safety program, who has been part of Columbia University's EH&S team for the past year. She brings a calm professionalism, strong technical knowledge, and a genuine commitment to safety to every laboratory she supports across campus.

Calling East Lyme, Connecticut her hometown, Chara comes from a community known for having the oldest house in the state (The Thomas Lee House) still standing in its original location, built in 1660. Perhaps influenced by her historic hometown, she has always valued structure, stability, and creating environments that stand the test of time—values that align naturally with her work in health and safety.

Before entering the EH&S field, Chara began her professional journey as a swimming instructor at the East Lyme Aquatic Center. The experience taught her the importance of patience, communication, and preparedness—essential qualities that continue to shape her approach to safety practice today.

At Columbia, Chara is part of the EH&S team working on the new Field Research Preparedness and Safety Program and recently completed an important project to ensure compliance with new methylene chloride exposure standards. She is also currently developing a program to evaluate noise exposure from sonicator use in research laboratories. This project reflects her proactive approach to identifying and minimizing workplace hazards. Her professional philosophy is simple but powerful: "Never stop learning. Always stretch yourself to learn more."

Outside of work, Chara enjoys reading, spending time with friends and roommates, and running. In fact, on April 27, 2025, she completed her first half marathon. She appreciates the quiet beauty of nature and often unwinds by exploring Central Park. A sports enthusiast, she cheers for the Baltimore Orioles, and if she could live anywhere in the world, she would choose Edinburgh, Scotland for its historic charm and literary atmosphere. She is also passionate about environmental sustainability and hopes to contribute to global efforts to stop climate change.

EH&S Marathoners

Peter Caracappa started running a little over two years ago for his health and fitness. For motivation, he decided to enter the Dyckman 5K, he has never looked back. With four half-marathons under his belt, he ran the NYC Marathon on November 2, 2025. Peter loves the vibe at races, cheering crowds and support from racers who finish and stay to offer encouragement. No doubt, Peter is addicted to running.

After 37 years of running, Lauren Kelly's 24th marathon will fulfill her running dream, running the Boston Marathon on April 20, 2026. She is running to support the ALS Therapeutic Development Institute. ALS TDI is the largest drug discovery lab and non-profit in the world focused solely on finding treatments for ALS. Donations to assist in groundbreaking ALS research can be made to ALS TDI.

SAFETYMATTERS
COLUMBIA UNIVERSITY EH&S
Volume 20 Issue 1
Winter 2026

FDNY and You – Common FDNY Inspection Findings and What You Can Do to Keep Your Laboratory Inspection Ready

By Calista Bryant, Safety Advisor II

The Fire Department of New York (FDNY) conducts frequent and crucial inspections of Columbia University's research facilities. These inspections are far more than mere bureaucracy; they are essential for maintaining required laboratory permits and, most critically, protecting the safety of every researcher. To keep vital research running smoothly, every member of the research team must understand the scope of these visits and commit to maintaining an "inspection-ready" environment at all times.

FDNY permits are a mandatory requirement for any space that stores, handles, or uses hazardous materials in quantities that exceed specific thresholds. These include but are not limited to 1 gallon of flammable liquid, 1 gallon of combustible liquid, or 75 standard cubic feet (SCF) of flammable gas. Once these limits are crossed, the laboratory must officially operate under an FDNY permit and must adhere to applicable fire codes.

Inspectors often cite findings that are behavioral in nature—problems that can easily be avoided by consistently following existing protocols.

A frequent citation is the presence of food and drink in the laboratory. FDNY regulations strictly prohibit the consumption or storage of any food or beverages, including sealed water bottles, in any area where hazardous chemicals are used or stored. This is not an arbitrary rule; it is a fundamental safety measure designed to eliminate the risk of accidental ingestion of toxic substances.

FDNY regulations set the baseline for compliance and safety. Regular oversight ensures this standard is met, mitigating risks of fire, explosion, or hazardous release.

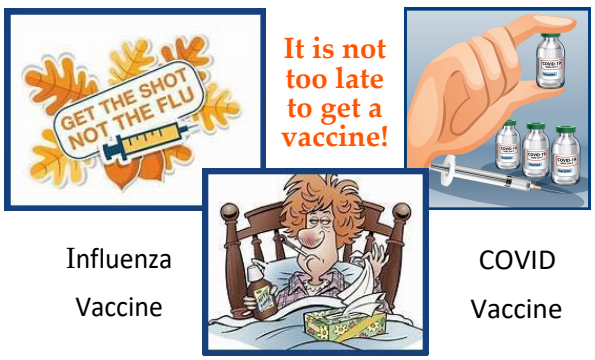
Another area of non-compliance involves compressed gas cylinder maintenance. All gas cylinders, regardless of their contents or status (full or empty), must always be securely chained or strapped to a fixed object, such as a wall or a bench. A loose cylinder can become a missile if its valve is sheared off. Furthermore, when a cylinder is not actively connected to a regulator and in use, the protective valve cap must be tightly installed. This simple action safeguards the valve from damage, which could otherwise result in a dangerous, uncontrolled release of the cylinder's contents.

EH&S works with the research community to build a safe environment. Contact us for expert guidance on inspection-readiness and compliance questions.

Working without the supervision of a Certificate of Fitness (C-14) holder is a serious violation. All activities involving hazardous materials must be conducted under the supervision of a C-14 holder, meaning a C-14 holder must be present in the lab during all hours of operation. For ease of compliance and verification, EH&S strongly recommends all eligible researchers obtain a C-14 and that all laboratories post a copy of the valid C-14 Certificate(s) of Fitness in a clearly visible location inside of the lab. While personal information, such as a home address, may be redacted for privacy, the posted certificate clearly proves authorized supervision for both inspectors and personnel.

The final critical area of compliance is chemical management, which depends heavily on proper storage and organization. Violations can be written when incompatible chemicals are improperly stored together, leading to dangerous conditions. Therefore, it is mandatory that researchers organize all chemicals based on hazard class and compatibility. Furthermore, every container must be clearly labeled with the full chemical name and stored within designated secondary containment where necessary to prevent spills and accidental mixing.

Maintaining an "inspection-ready" environment requires full integration of these protocols into the laboratory's daily workflow. Every researcher must embrace these procedures as the necessary tools for both personal safety and regulatory compliance. Regular self-audits and immediate correction of potential hazards will ensure a safer workplace and streamline the FDNY inspection process. This continuous commitment by every researcher, supported by Environmental Health & Safety (EH&S), is what guarantees ongoing safety and the uninterrupted continuity of the University's vital research operations.



Field Research Preparedness and Safety

EH&S has a new webpage designed for field researchers to help prepare and provide safety while on an excursion. There are templates for a Pre-Trip Checklist, Emergency Response, Hazard Communication, and Post-Trip Follow Up. Pack and Go Cards are available, directing a researcher to various departments throughout Columbia University. These departments will help you obtain permits and documents, as well as provide other valuable information. Please contact EH&S for a set of cards.

SAFETYMATTERS
COLUMBIA UNIVERSITY EH&S
Volume 20 Issue 1
Winter 2026

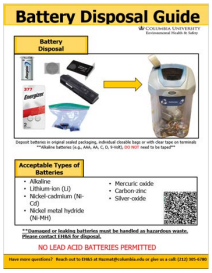
Chemicals & Beyond: Essential Support from the CTS Team

By David Skorodinsky, Manager, Data Programs

EH&S' Chemical Tracking System (CTS) team was first introduced to Columbia University nearly 20 years ago, with the goal of populating and maintaining a hazardous chemical inventory database for research laboratories at the Morningside, and subsequently Manhattanville, campus. This task was initially completed through the application of optical barcodes onto existing and incoming chemical containers, which was made possible with the help of 3 full-time, on-site staff members. By 2017, technology had progressed beyond optical barcodes, and the process of retroactively tagging the chemical inventory with radio frequency identification (RFID) tags was begun. The RFID tags allowed for the ability to scan multiple items at once and at a greater distance, greatly improving the efficiency of the program allowing for regular auditing of laboratory chemical inventories to determine what had moved, stayed the same or been disposed. This boost in efficiency also prompted EH&S to explore a new set of projects and services for the CTS team beyond chemical tracking and into the world of batteries and dark rooms.

Through a close partnership with EH&S' hazardous materials (HazMat) program personnel, the CTS team now completes pre-inspections for the University's photographic dark rooms at the Morningside and Manhattanville campuses. The work conducted in dark rooms produces toxic silver waste, which cannot go down the drain and must be separated for special disposal. With the help of the CTS team, a pre-inspection is conducted, where the equipment and the room itself are visually examined to ensure that everything is in good condition. Any issues are flagged and escalated to the HazMat team to ensure a safe and compliant work environment for the research community as well as for the University's partnered vendor, Greymart, when they arrive for silver disposal.

Additionally, the CTS team has taken on the initial processing of discarded batteries at the Morningside, Manhattanville and Irving Medical Center campuses. The team collects and segregates the batteries in preparation for them to be recycled by Veolia, which both lowers costs and improves safety by reducing the time that used or damaged batteries sit in a collection receptacle from three months to one month. This has become increasingly important due to the growing presence of lithium-ion batteries, which when damaged can lead to dangerous fires and even explosions. When batteries are collected, any batteries that are damaged or corroded get separated and treated as hazardous waste while non-damaged batteries are separated for recycling. Please remember batteries placed in EH&S battery disposal containers should be deposited in either their original sealed packaging, in an individual sealable bag or with tape on terminal locations to reduce the risk of fires occurring.



While chemical tracking remains a core responsibility for the team, they can now be found servicing chemicals and beyond, as they take part in crucial work that ensures safety and compliance for the research community and Columbia University as a whole.

EH&S Semi-Annual Full Staff Meeting

On October 27, 2025 the team spent the afternoon sharing projects completed during second half of the year. A highlight of the meeting was honoring Christopher Pettinato for 30 years of service to Columbia University at EH&S.

EH&S Pumpkin Designs

EH&S New Staff

Ryan Taveras - Senior Hazardous Materials Specialist

EH&S Promotions

Guillermo Michelena - Senior Health Physicist
Emilio Vega - Health Physicist
David Skorodinsky - Manager, Data Programs
Holland Howard - Associate Manager, Research Safety Programs
Daniela D'Armetta - Associate Director of Human Resources and Staff Development

Editorial Staff: Kathleen Crowley, Marianne McCartney, Chris Pitoscia, Pam Shively
Please share questions or comments with us at **newsfeedback@columbia.edu**