

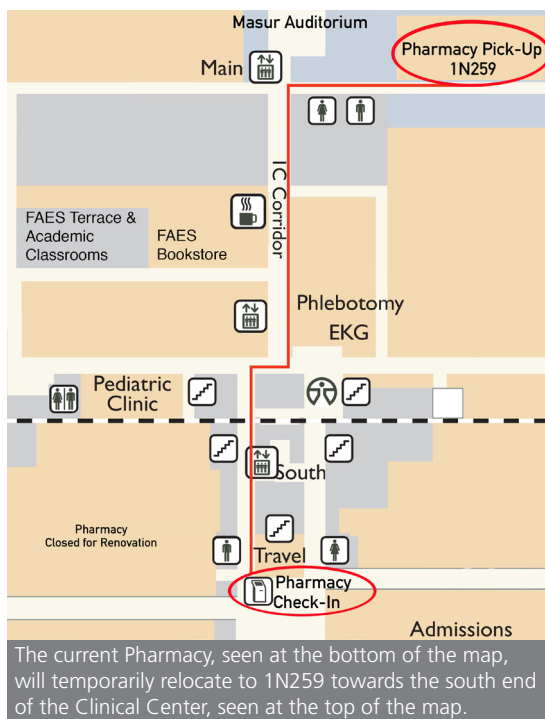
Pharmacy Department renovations will modernize, increase capabilities

The NIH Inpatient and Outpatient Pharmacy will undergo major renovations beginning Nov. 18, 2019. The construction will increase capacity and streamline processes to better meet patient's demands. The renovation is expected to complete Summer 2021. During this time, both the Inpatient and Outpatient Pharmacy will remain open at temporary locations within Building 10.

The Outpatient Pharmacy will have a new Check-In procedure. The two most important steps for a patient to take to get their prescriptions processed and ready are speaking with a facilitator and signing into the check-in kiosk. The facilitator and kiosk will be located in the waiting area directly in front of the Patient Travel Office (1-4553). Upon Check-In, patients will receive a number that will appear on the TV screen outside of the Travel Office when prescriptions are ready. Once the number appears, patients will travel to the new Outpatient Pharmacy Pick-Up location at 1N259. The Pick-Up location is only for those whose medications are ready and will not serve as a Check-In location due to limited seating availability.

During the renovation, there will be no after-hour pick-up from Outpatient Pharmacy. But, a concierge service will be available after the pharmacy is closed to patients who are being discharged from the Inpatient hospital or Day Hospitals. Upon a nurse's call to the service, a concierge pharmacist will hand deliver prescriptions and provide medication education to patients at the bedside just prior to discharge.

The Inpatient Pharmacy will temporarily be located on the B1 level. All hospital medications will be delivered by Inpatient Pharmacy staff to the patient care units – eliminating the need for care staff to



travel to pick up from this location.

Timeliness and high-quality care and service remain a priority and the department anticipates little to no delays.

Below are several examples of what the Pharmacy Department will be modernizing in support of the NIH research mission, and in an effort to improve our patients' healthcare experience:

- **Increased Capacity:** The number of Intravenous Admixture Unit (IVAU) hoods will increase from 4 to 12. This tremendously increases the capacity to treat patients faster. These compounding hoods are used to produce sterile medications, such as antibiotics and cancer treatments.
- **New Pediatric Corner:** A dedicated and separate pediatric area to safeguard and prepare medications for our youngest patient partners.
- **Scan and Pull Prescriptions:** A new sophisticated system will allow for the scanning of medications to ensure that the right medication and the right strength is being dispensed for the right patient.

- Molly Freimuth

Nursing Department joins NIH genomics revolution

The Clinical Center Nursing Department has joined the genomics revolution that is transforming clinical research and patient care from bench to bedside. In a new pilot project, nurses will obtain three-generation family health histories from patients and create a pedigree diagram via a new Clinical Research Information System (CRIS) pedigree.

The pedigree can show how traits and patterns of medical problems and diseases are passed from one generation to another. This pedigree will be integrated into patients' electronic medical record and allow all health care team members (nurses, physicians, nurse practitioners, physician assistants, genetic counselors) to update them as new health information is discovered about the patient and their family.

GENOMICS page 2

Targeting cancer with radioactive Alpha particles

On July 23, researchers in the NIH Clinical Center treated the first patient in the U.S. with radioisotope Thorium-227 for mesothelioma. The clinical trial uses Thorium-227 to target and attack a protein called mesothelin, which is highly expressed in many cancers.

THORIUM page 3

Deep brain stimulation allows flutist to play again

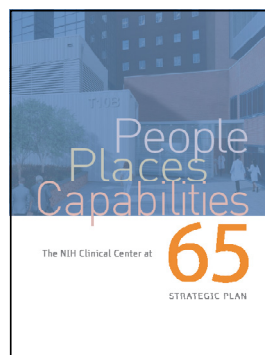


Many patients look for ways to "give back" to NIH for providing hope, but for Julianna Nickel, she is sharing the very thing that NIH returned to her — the ability to play the flute.

FLUTE page 2

NIH Clinical Center releases Strategic Plan

The Strategic Plan, *The NIH Clinical Center at 65: People, Places, and Capabilities*, is a renewal of dedication to the safety and satisfaction of our patient-partners, sustained by the clinical research mission that will continue unabated as we find and develop the people, build the facilities and integrate the capabilities that will enable superior clinical research at the CC for the next decade. Read it online: <https://cc.nih.gov/strategic/index.html>



GENOMICS from page 1

The Nursing Department in collaboration with the Department of Clinical Research Informatics plans to assess and quantify the accuracy and ease of use of the CRIS pedigree.

The CC is among a small handful of U.S. hospitals that require its nursing staff to complete a genomic competency. As of 2017, all nurses who care for patients have completed a beginner level genomic competency which includes a full-day course: Introduction to Genetics and Genomics in Healthcare. Approximately 1/3 of the nursing staff have completed the intermediate level competency.

In addition to the introductory course, a two-day course, Intermediate Genetics and Genomics in Health Care, encourages nurses to continue developing their genomics proficiency. Course instructors and participants foster ongoing competency validation by creating posters, presentations, outreach, workgroups and case studies. Follow up and advanced courses in genetic and genomics are also in development.

Empowered with this competency in genetics and genomics, the nursing staff can play a more active role in supporting study teams with genomic protocols and in helping patients to get maximum benefit from these protocols.

- Lester Davis

FLUTE from page 1

Nickel's condition, called Focal Dystonia, is a rare condition that is task-specific; it only affects her when she plays the flute. It is a neurological condition that took a while for doctors to diagnose.

The standard treatment was botulinum toxin (e.g. Botox) injections, which helped to a certain extent, though not fully. Through a physician friend, she heard about a study on Parkinson's, which sent her on a Google search, ultimately leading to the discovery of the NIH clinical trial trying a new treatment – DBS, or deep brain stimulation. This study targeted patients who didn't respond to botulinum toxin injections. She decided to enroll.

In 2017, Nickel met with Dr. Debra Ehrlich, chief of the Parkinson's disease Clinic with the NIH National Institute of Neurological Disorders and Stroke (NINDS), and the Movement Disorders team at NIH. She started the process of testing and answering questionnaires.

Finally, she and her husband, who is a horn player with the National Symphony Orchestra, met with the neurosurgery team to finalize plans.

This was the first time surgery of this kind has been used to treat Focal Hand Dystonia in musicians. According

to Ehrlich, DBS has been quite successful in patients with other neurological conditions such as Parkinson's and essential tremor. But not for Focal Dystonia. What's more — Nickel needed to be awake and play her flute during the invasive surgery.

Nickel says, "The more we met with the doctors and nurses, the more convinced I became that they were the best. So I was comfortable with this surgery."

The surgery involved creating a small hole in the skull and passing a DBS electrode into a specific location in her brain. A battery was then inserted into her chest under the skin. Similar to a pacemaker, electrical signals are sent from the battery to the electrode.

During the procedure, Nickel played scales and songs from the operating room table

while the team tested the electrode. The OR team was excited to see improvements in her finger movements when they provided test stimulation through the electrode. The stimulator was then turned off and her brain was given time to heal.

A month after surgery, Ehrlich turned on the stimulator. She needed to adjust the amount of voltage, pulse-width and frequency to have the best effect. At each visit, further changes were made to the stimulation parameters in an attempt to optimize the benefit.

Nickel needed to be awake and play her flute during the invasive surgery. During the procedure, Nickel played scales and songs from the operating room table while the team tested the electrode.

Ehrlich reports that Nickel was very patient throughout the study. "Her persistence speaks to how important music is to her," she said. Although finding the best setting for the stimulator is ongoing, the surgery, along with occasional Botox injections, has allowed

Nickels to play the best she has ever played.

Currently, she is the Adjunct Professor of Flute at George Mason University and is a two-time recipient of Mason's Distinguished Teacher of the Year (2019, 2017).

She also freelances as a chamber musician and is a guest performer for the National Symphony Orchestra (NSO) Chamber Groups at the Millennium Stage at the Kennedy Center and Music in the Atrium concerts at the Clinical Center Atrium.

So when Nickel performs with an NSO group at NIH, it is a very unique connection. She says, "I get to come back and do what I do as a living, knowing what it's like to be a patient, and to put your trust in the nurses and doctors here."

- Debbie Accame



Julianna Nickel performs in the Clinical Center atrium May 21, 2019 with members of the National Symphony Orchestra.

THORIUM from page 1

Thorium-227 is an unstable radio-isotope that emits an alpha particle upon undergoing radioactive decay, explained Dr. Frank Lin, chief of the Targeted Radionuclide Therapy Section at the National Cancer Institute (NCI). According to Lin, who is the clinical authorized user for the radioactive administration of the thorium at the NIH Clinical Center, most current forms of systemic radiation therapy using radionuclides emits radiation particles that are very small such as beta particles. But, the higher the mass or energy of the emitted particle, the more tumor damage can be done. Alpha particles, such as Thorium-227, are several thousand times larger than beta particles. Before now, alpha emitters have never been used to treat patients at NIH.

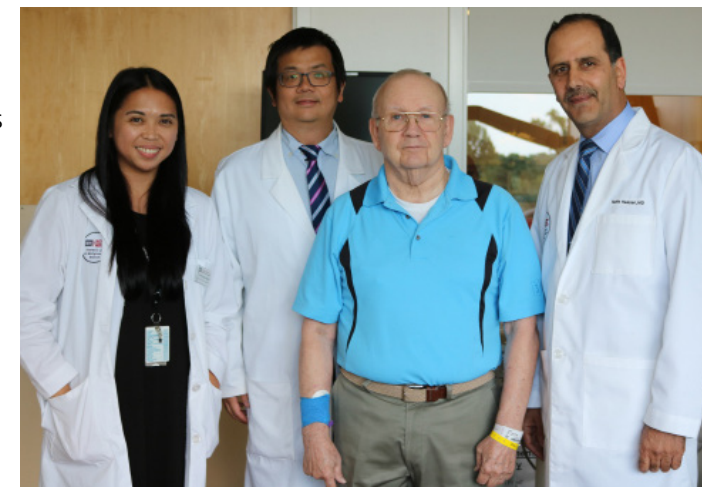
The new drug being tested (BAY 2287411) is made up of two components that are combined into one molecule. First is an antibody that allows the drug to locate and target the mesothelin protein on the cancer cells. Second is the Thorium-227, which is the "active ingredient" of the combined molecule. This is akin to having a smart bomb against cancer cells, where the antibody provides the targeting system, and the Thorium-227 is the radioactive payload. Once bound to tumor cells, the thorium undergoes its natural radioac-

tive decay and exposes tumor cells to lethal doses of alpha radiation.

"Our goal is to demonstrate the safety and tolerability of this drug and to get preliminary evidence of anti-tumor efficacy," said the study's principal investigator, Dr. Raffit Hassan, the chief of the Thoracic and GI Malignancies Branch and head of the Thoracic Oncology Section at NCI. "This is a treatment for patients with mesothelioma and ovarian cancer who have failed standard therapies and provides a new treatment approach for treating their cancer."

For more than two decades, Hassan and colleagues have been investigating the protein mesothelin as a target for cancer therapy.

"It feels exciting thanks to the work by Frank and [the NIH Office of Research Services] Division of Radiation Safety. They have been critical in working with the Nuclear Regulatory Commission to allow us to use the Thorium radio-conjugate here. It



Keith Grant (second from right), from Maryland, was the first patient in the United States to receive radioisotope Thorium-227 in treatment for mesothelioma. Grant returns every six weeks for therapy. Grant stands with his care team, Maria Agra, a research nurse with the National Cancer Institute (NCI), Dr. Frank Lin, chief of the Targeted Radionuclide Therapy Section at NCI, and Dr. Raffit Hassan, chief of the Thoracic and GI Malignancies Branch and head of the Thoracic Oncology Section at NCI.

is a very complicated process, but because of a lot of their work we were able to do it and hopefully this opens the door for Alpha therapies not only for targeting mesothelin but other cancers," Hassan said.

While it may take a number of years to conduct the trial and assess its effectiveness, Hassan said if successful, it could be used on other cancers such as lung cancer and pancreatic cancer.

- Molly Freimuth

Dr. Harvey Klein, chief of Department of Transfusion Medicine, retires

Dr. Harvey G. Klein, a known throughout the world as an expert on blood transfusions, retired in September after a 46-year distinguished career at NIH. Klein, who served as chief of the NIH Clinical Center Department of Transfusion Medicine, is a renowned resource regarding blood transfusions, blood storage and the impact of biotechnology on transfusion medicine.

Klein arrived at NIH in 1973 as a member of the Public Health Service Commissioned Officer Corps serving the National Heart, Lung, and Blood Institute. Just two years later, he joined the Clinical Center Blood Bank, holding various leadership positions until he became its chief in 1983. Through his stewardship, the Blood Bank evolved into the Department of Transfusion Medicine, the first of its kind in the country.

Dr. John I. Gallin, NIH Clinical Center Chief Scientific Officer, spoke at a celebration of his career.

"Harvey Klein...built a remarkable department, certainly among the very best

in the world supporting outstanding patient care while enabling incredible science within the department that resulted in a Lasker Award for his close colleague Harvey Alter, as well as enabling outstanding research across NIH institutes and Centers," Gallin said.

"His advice was far reaching within the Clinical Center, within NIH, within the Department of Health and Human Services, across the United States and globally. We will greatly miss him but consider ourselves very fortunate that as a Scientist Emeritus he will continue an important advisory role at the



Dr. Jim Gilman, Clinical Center Chief Executive Officer, Dr. Harvey G. Klein, chief of the Department of Transfusion Medicine, Pius Aiyelawo, Clinical Center Chief Operating Officer, at Klein's retirement celebration Sept. 12.

Clinical Center."

Dr. Cathy Cantilena now serves as acting chief of the department. Read more: <https://go.usa.gov/xVvj9>

- Molly Freimuth

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Clinical Center News

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Change of allergy alert bands worn by CC patients



Beginning Oct. 16, the Clinical Center's current Allergy Alert Band will be replaced with a new red Allergy Band that states, 'ALLERGY'. This change is in response to a recommendation made by the Institute for Safe Medication Practices and is consistent with practices implemented in other healthcare organizations. The electronic health record (CRIS) remains the source record for medication and food allergies reported by a patient.

Clinical Center honors staff clinician, nurse practitioner, physician assistant and administrator of the year



In October, the Clinical Center honored four employees for their outstanding clinical excellence and compassion in the care of patients. Dr. Douglas Rosing (right), head of the National Heart, Lung, and Blood Institute's Cardiac Consultation Service, was named Staff Clinician of the Year, Elise Ferré (left), with the National Institute of Allergy and Infectious Diseases, was named Physician Assistant of the Year, and Ruth Parker (third from left), of the CC Pediatric Consult Service, was named Nurse Practitioner of the Year. A new category, Administrator of the Year, was awarded to Maureen McDonnell (second from left), of the CC Office of Workforce Management and Development. View more: <https://go.usa.gov/xVvj9>

Ready for the unexpected: Jim Howson focuses on CC emergency preparedness

Tucked away on the 6th floor of the NIH Clinical Center is a man who spends all day thinking about what can go wrong. Jim Howson, the hospital's Emergency Coordinator, coordinates and plans responses to possible disaster scenarios that could occur at the Clinical Center.

"I look at what can go wrong and how can we keep it from going wrong," said Howson. Upon his arrival to the Clinical Center in 2018, he said "The thing that impressed me most is how the staff takes care of patients, and if something does go wrong, how committed staff are to making sure that it doesn't happen again."

Emergency management at NIH has evolved over the years. After the 9/11 attacks, emergency planning at the Clinical Center focused on caring for overflow patients from Suburban Hospital and Walter Reed in the case of a mass casualty event. More recently, the Clinical Center has pivoted to a new role: providing specialists to be resources for the other hospitals in the case of an emergency. The Clinical Center and the NIH are uniquely able to tap into specialized expertise on specific emergencies like Ebola virus exposure.

"This role makes more sense for us as



Jim Howson, the Emergency Coordinator at the NIH Clinical Center.

we're less likely to take in patients since the Clinical Center doesn't have an emergency room and isn't used to taking patients off the street," said Howson.

In addition to reviewing the hospital emergency policies and approaches, Howson sees effective communication as one of his major responsibilities. "9/11 was a big motivator to think about disasters, but we're almost 20 years on, what can we improve? How do we let people know we're in an emergency situation and improve our communication in getting the message out?" he asks.

Howson came to the NIH with a breadth of experience. He served as a

member of the National Disaster Medical System (NDMS), a partnership of the U.S. Departments of Health and Human Services, Homeland Security, Defense and Veterans Affairs. Through his work in the NDMS - he helped mobilize field hospitals under Disaster Medical Assistance Teams, which were usually deployed in response to natural disasters.

On the morning of September 11, 2001, Howson was called within an hour of the planes hitting the twin towers. His focus was on treating the injuries of rescue workers and supporting the recovery work focused on retrieving remains from the wreckage.

After 9/11, Howson worked for the New Jersey Hospital Association developing education and training programs focused on disaster management. Then he moved on to Booz Allen Hamilton where he traveled the country working with Veterans Administration medical centers to hit baseline requirements on their disaster preparedness planning.

He later moved to U.S. State Department to provide tactical paramedic instruction. The job quickly evolved as Howson focused on training embassy staff how to provide emergency first aid, and then was consulted on the design and planning of U.S. embassies to keep the embassy and staff safe.

- Robert Burluson & Donovan Kuehn