

# Breakthroughs

Feinberg School of Medicine Research Office

August 2022

## Leading Translational Gastroenterology Research

By **Haleigh Ehmsen**

Northwestern Memorial Hospital was recently ranked seventh in the country for Gastroenterology & Gastrointestinal (GI) surgery by [U.S. News and World Report](#) — a ranking that recognizes just how much Feinberg physician-scientists are leading the way in translational research that addresses both the physical and mental symptoms of GI disorders.

### Understanding psychosocial effects

According to a Northwestern Medicine study [published](#) in *Gastroenterology*, measuring levels of symptom-specific anxiety may improve the understanding of patient outcomes for severe esophageal diseases. [John Pandolfino, MD, '94 '96 '01 GME](#), the Hans Popper Professor and chief of [Gastroenterology and Hepatology](#) in the Department of [Medicine](#), was senior author of the study. [Tiffany Taft, PsyD](#), research assistant professor of Medicine in the Division of Gastroenterology and Hepatology, of [Medical Social Sciences](#) and of [Psychiatry and Behavioral Sciences](#), was lead author of the study.



The study focused on eosinophilic esophagitis (EOE), which is a chronic inflammatory disease caused by excess buildup of white blood cells in the esophagus. This buildup is induced by an allergic reaction from foods such as dairy or wheat, causing

the esophagus to narrow and become inflamed, making it difficult to breathe or swallow.

“What we found in these 100 patients was that the biggest driver of their quality of life was really the hypervigilance and symptom anxiety,” Pandolfino said.

The psychosocial effects for patients with EOE have been understudied. These effects include hypervigilance — a heightened focus on physical symptoms — and symptom-specific anxiety such as a fear of choking, both of which have been associated with worse reported EOE symptoms and quality of life.

“Hypervigilance is really a central brain focus on the particular symptom where it becomes the focus of your attention consciously and you’re constantly thinking about your esophagus, and that really generates that symptom-specific anxiety. If you can break that thought process, you can improve the patient’s quality of life,” Pandolfino said.

For next steps, Pandolfino and Taft are studying the efficacy of psychological behavioral treatments to target hypervigilance and symptom-specific anxiety in patients with different esophageal diseases.

“Northwestern has been a pioneer in operationalizing treatment strategies for disorders of gut brain interaction and we are fortunate to have partners in behavioral medicine embedded in the division. It is this aspect that has always made Northwestern unique amongst other academic medical centers,” Pandolfino said.

## GI Research *(continued from cover page)*

### Identifying GI conditions

[Nirmala Gonsalves, MD](#), professor of Gastroenterology and Hepatology in the Department of Medicine, is the site principal investigator of the U54 grant, “Consortium of Eosinophilic Gastrointestinal Disease Researchers” (CEGIR) funded by the National Institutes of Health and led by the [National Center for Advancing Translational Sciences](#) (NCATS) through its Division of Rare Diseases Research Innovation.



As part of the CEGIR, Gonsalves was a co-author on a study [published](#) in Gastroenterology that established eosinophilic colitis (EOC) as a distinct disease requiring improved diagnosis and treatment. The study included sample collections from across the U.S. and data acquisition from colonic biopsies from participants with EOC, controls and participants with Crohn’s disease.

What the investigators found was a conserved colonic transcriptome in patients with EOC, which is markedly distinct from other GI diseases and uniquely associated with mechanistic processes separate from other eosinophilic gastrointestinal disorders.

“This is the one of the first studies that has done such a deep dive into this type of condition,” Gonsalves said.

In addition to her work with CEGIR, Gonsalves has worked on establishing a common nomenclature around eosinophilic GI disorders with an international group of investigators that developed the International Consensus Recommendations for Eosinophilic Gastrointestinal Disease Nomenclature, which is important to improving research and clinical care.

“At Northwestern, we are internationally recognized as one of the leaders for eosinophilic gastrointestinal disorders and are involved in collaboration and development of clinical trials, which allows us to elevate our care,” Gonsalves said.

### Better treatments

Collaborating on clinical trials is key to developing new treatments and offering more options for patients with inflammatory bowel disease (IBD). [Stephen Hanauer, MD](#), the Clifford Joseph Barbo- rka Professor, was a co-author of a study [published](#) in *The New England Journal of Medicine*, which identified a new drug that improved management of ulcerative colitis.



Ulcerative colitis is a type of IBD, characterized by inflammation and sores in the innermost lining of the colon and rectum. Patients in the study treated with ozanimod, a sphingosine 1 phosphate receptor modulator that prevents inflammation, experienced a higher rate of remission compared to patients who received a placebo.

“It ‘traps’ lymphocytes in lymph nodes so they are unable to get into the colon to cause tissue damage,” Hanauer said.

Ozanimod has been approved by the Food and Drug Administration for use in multiple sclerosis and now moderate-to-severe ulcerative colitis. It is also being tested for use in Crohn’s disease (CD).

Another study [published](#) in *The Lancet*, of which Hanauer was also a co-author, found that two new treatments for CD, adalimumab and ustekinumab, showed roughly equal performance in a clinical trial.

CD is a chronic, progressive inflammatory bowel disease, causing abdominal pain, weight loss and fatigue. Treatment for CD has typically focused on alleviating symptoms to achieve clinical remission using corticosteroids or immunomodulators, but a need for more effective treatment remains, according to Hanauer.

These new treatments allow clinicians and patients to make treatment choices based on tolerance. Adalimumab is a monoclonal antibody that reduces inflammatory cytokines by inhibiting the cytokine tumor necrosis factor alpha. Ustekinumab is another monoclonal antibody, though the drug targets a different set of proteins: interleukin 12 and interleukin 23.

“While there are numerous therapies and mechanisms of action for drugs approved for moderate-severe CD, there has been a therapeutic ceiling as far as outcomes are concerned, with usually less than 50 percent of patients in long-term remission,” Hanauer said.

*Will Doss and Melissa Rohman contributed to this article.*

[Listen](#) to Pandolfino discuss esophageal diseases, symptom anxiety and hypervigilance on the *Breakthroughs* podcast.

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# Northwestern Hospitals Among the Best in Latest U.S. News Rankings

Several Northwestern Medicine hospitals have been recognized by *U.S. News & World Report* in its 2022-23 [Best Hospitals](#) rankings.

[Northwestern Memorial Hospital](#) has again been recognized as one of the top hospitals in the country, ranking ninth on the prestigious [Best Hospitals Honor Roll](#), the only hospital in Illinois to receive top-ten honors.



Northwestern Memorial remained ranked first in both the Chicago Metro Region and Illinois for the 11th consecutive year. Northwestern Medicine [Central DuPage Hospital](#) and Lake Forest Hospital were tied for the 12th ranked hospital in the Chicago Metro region as well as the 12th in Illinois. Northwestern Medicine McHenry, Huntley, and Woodstock Hospitals were ranked ninth in the Chicago Metro region and ninth in Illinois.

“This recognition is a direct reflection of our Patients First mission and our relentless quest to improve, innovate and deliver world class outcomes to the patients we are privileged to serve,” said Dean M. Harrison, chief executive officer of Northwestern Memorial HealthCare. “These rankings amplify the expertise, dedication and compassion of more than 33,000 physicians, nurses and staff who come together to provide exceptional care, train future generations of clinicians, advance medicine through cutting-edge research all in the pursuit of health for individuals and the communities they call home.”

For the 2022-23 rankings, *U.S. News* evaluated hospitals across 15 specialties and 19 procedures and conditions. Only 164 hospitals, or about three percent of the more than 5,000 hospitals evaluated, were nationally ranked in even one specialty.

Northwestern Memorial was nationally ranked in 10 out of 15 specialties and recognized as high performing in all

19 procedures and conditions. Of the 10 nationally ranked specialties, six clinical programs at Northwestern Memorial were ranked among the top 10 hospitals in the country: Northwestern Memorial Hospital was ranked seventh for Gastroenterology & GI Surgery, eighth for Cardiology & Heart Surgery, eighth for Geriatrics, ninth for Cancer, and tenth for both Diabetes & Endocrinology and Neurology & Neurosurgery.

In addition, Northwestern Medicine Palos Hospital was ranked 14th in Chicago and 14th in Illinois, while Northwestern Medicine Delnor Hospital was ranked 18th in Chicago and 20th in Illinois.

Northwestern Medicine [Lake Forest Hospital](#) was ranked 28th in Pulmonology and Lung Surgery, 49th for Neurology & Neurosurgery and recognized as high performing in Cancer, Gastroenterology & GI Surgery, Geriatrics, Orthopaedics, and Urology as well as in five procedures and conditions. Northwestern Medicine Central DuPage Hospital was recognized as high performing in 15 procedures and conditions. Northwestern Medicine McHenry, Huntley, Woodstock Hospitals were recognized as High Performing in Cardiology & Cardiac Surgery, Gastroenterology & GI Surgery, Geriatrics, Neurology & Neurosurgery, Orthopaedics, Pulmonology & Lung Surgery and Urology, as well as in 10 procedures and conditions. Northwestern Medicine Delnor Hospital was recognized as high performing in Orthopaedics and in seven procedures and conditions.

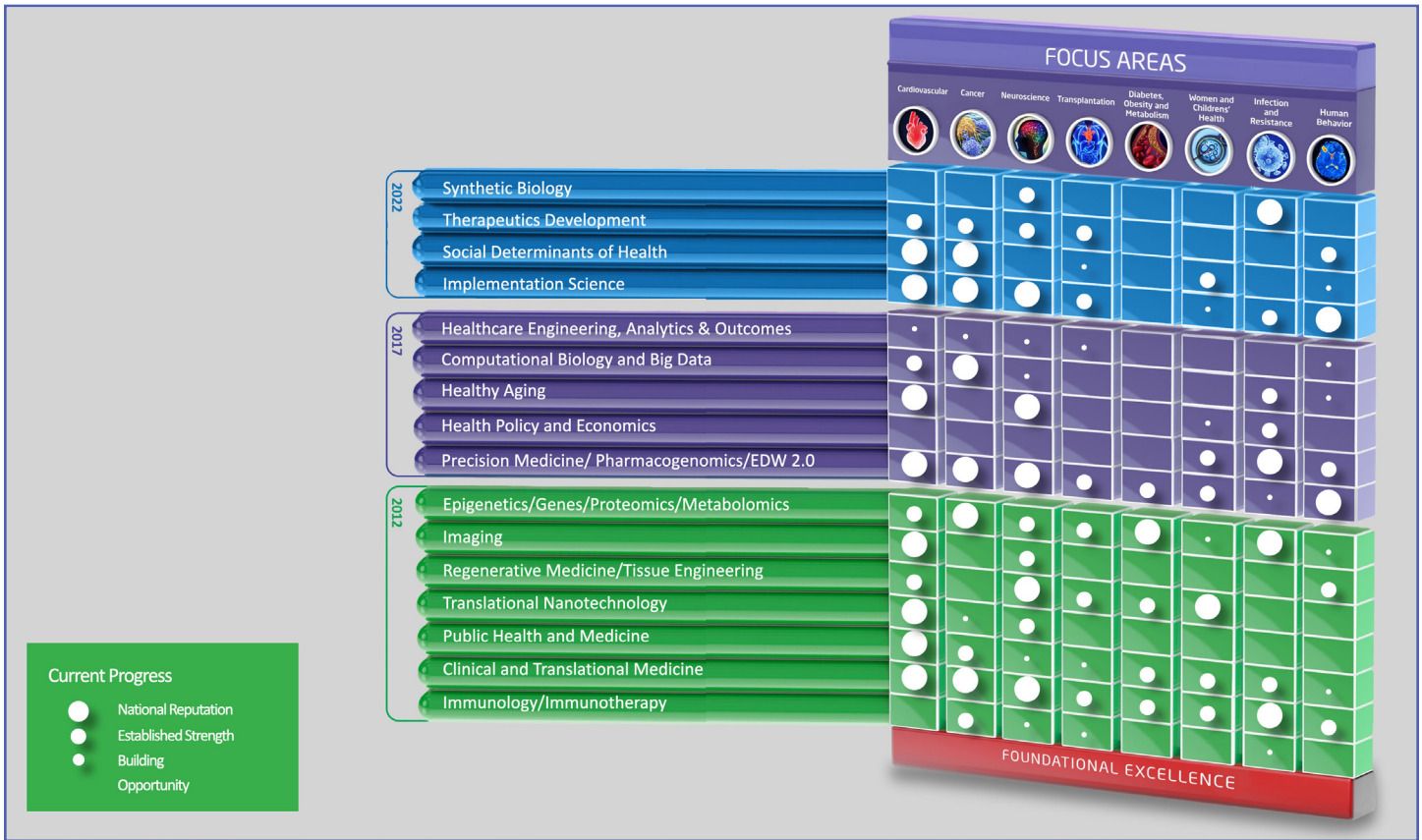
The Best Hospitals methodologies in most areas of care are based largely or entirely on objective measures such as risk-adjusted survival and readmission rates, volume, patient experience, patient safety and quality of nursing among other care-related indicators.

## **AbilityLab and Lurie Children’s Receive High Marks**

Meanwhile, [Shirley Ryan AbilityLab](#) (previously known as the Rehabilitation Institute of Chicago) continues to be recognized as the national leader in Rehabilitation, topping the *U.S. News* list for 32 consecutive years. The AbilityLab is the only hospital of its kind to hold this distinction.

Earlier this summer, *U.S. News* placed [Ann & Robert H. Lurie Children’s Hospital](#) of Chicago as the top children’s hospital in Illinois, and seventh in the region (in the region that includes North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan, Indiana, Ohio and Kentucky) and ranked four of its specialties in the top 10 nationally: urology at sixth, cardiology/heart surgery at ninth, neonatology at tenth, and cancer at tenth.

# Feinberg Shares New Research Priorities



Generated from the Research Retreat in February, four new research priorities have been identified, including synthetic biology, therapeutic development, social determinants of health and implementation science.

These priorities were developed from hundreds of thoughts and suggestions generated during the retreat. They were recorded and circulated to the executive committee of faculty, who shared the ideas with their departments and offered feedback. Additionally, the sponsor group of the retreat included faculty leaders who shared their insights.

After this collaborative process, these four research priorities, will guide the Feinberg research enterprise for the next five

years, along with the focus areas that include cardiovascular, cancer, neuroscience, transplantation, diabetes, obesity and metabolism, women and children’s health, infection and resistance, and human behavior.

To continue to grow and stand out in a competitive biomedical research landscape, it is important that Feinberg adopts these new strategic priorities to improve human health and contribute to novel research discoveries.

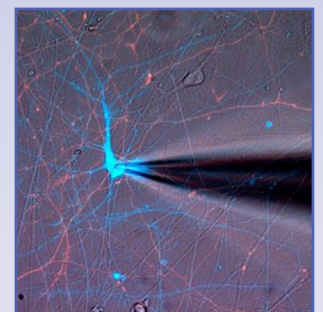
The size of the dots on the chart indicates national reputation, established strength and building opportunity. The bigger the dot appears, the greater Feinberg’s reputation is in this area. Where smaller dots appears, there is more opportunity for growth.

## Breakthroughs Podcast

### Investigating Therapies for Genetic Epilepsy with Alfred George, Jr., MD

Alfred George, Jr., MD, is a pioneer in understanding the mechanisms by which ion channel mutations cause a variety of inherited disorders, such as genetic epilepsy. He discusses his recent breakthroughs in the field and his optimism for future RNA therapeutics to treat rare genetic diseases.

[Listen to the episode here.](#)



# Graduate Student/Post-Doc Events and Opportunities

## Seminar: What is a Drug Hunter? Dennis X Hu, PhD Friday, August 19, Noon to 1 p.m.

There's no such thing as a PhD in drug discovery, and few have "drug hunting" in the job description. Who and what are drug hunters, and what do they do? What distinguishes drug hunters from medicinal chemists, antibody engineers or pharmacologists? In this talk, we'll explore the role of the "drug hunter" as the product and project champion of the biotech and pharmaceutical industries and how scientists can play this role effectively.

Pancoe-NSUHS Life Sciences Pavilion, Auditorium  
2200 Campus Drive, Evanston 60208

[More information](#)

## Clinical Research Course: Toolkit for Clinical Cancer Researchers Thursday, August 25, 2 to 5 p.m.

Designed specifically for clinical researchers – primary investigators and co-investigators – this seminar will provide valuable insight into opportunities, resources and expectations for investigators developing and conducting clinical trials. Speakers will discuss available resources to help PIs successfully conduct clinical trials from start to finish.

Baldwin Auditorium  
Robert H. Lurie Medical Research Center  
303 E. Superior St., Chicago 60611

[More information](#)

## IRB Brown Bag: Is Monkeypox the New COVID? Wednesday, August 31, Noon to 1 p.m.

Join us for our monthly IRB Brown Bag session. Infectious disease expert Michael Ison, MD, MS, will discuss all we need to know about the World Health Organization's most current global health emergency and provide an update about where we are and where are going with COVID-19.

[Online via Zoom](#)

## 16th Annual Lewis Landsberg Research Day Thursday, September 15, 1 to 5 p.m.

Research Day offers students and scientists at Feinberg a public forum for presenting their findings and an opportunity to receive valuable feedback from their colleagues. It also allows them to see how their research compares to that of their peers in a competitive arena. The keynote speaker will be Josh Denny, MD, MS, chief executive officer of the National Institutes of Health's All of Us Program.

[More information](#)

## Research in the News

### *The New York Times*, July 7

[The Quest by Circadian Medicine to Make the Most of Our Body Clocks](#)

Phyllis Zee, MD, PhD, was featured.

### *NPR*, July 14

[Over-the-counter Birth Control Pills Are Available Worldwide. The U.S. May Be Next](#)

Melissa Simon, MD, MPH, was featured.

### *U.S. News & World Report*, July 20

[Common Lung Function Test Often Misses Emphysema in Black Patients](#)

Gabrielle Liu, MD, was featured.

### *The Washington Post*, July 21

[How to Keep Kids Safe in the Heat](#)

George Chiampas, DO, was featured.

### *Crain's Chicago Business*, July 28

[Opioid Crisis Will Only Become Far Worse Everywhere. Northwestern Profs Say](#)

Lori Ann Post, PhD, was featured.

### *US News & World Report*, July 28

[More Young Americans Are Dying of Heart Failure](#)

Nilay Shah, MD, MPH, was featured.

# Improving the Diagnosis and Treatment of Cystic Fibrosis

Susanna McColley, MD, professor of Pediatrics, Division of Pulmonary and Sleep Medicine, and scientific director for Interdisciplinary Research Partnerships



[Susanna McColley, '85 MD](#), is a professor of [Pediatrics](#) in the Division of [Pulmonary and Sleep Medicine](#) and scientific director for Interdisciplinary Research Partnerships at [Stanley Manne Children's Research Institute](#), concurrently with her role as associate clinical director for Child Health at the Northwestern University Clinical and Translational Sciences ([NUCATS](#)) Institute. Her focus is cystic fibrosis (CF), including developing diagnostic tools and therapies, characterizing and treating early lung disease, improving health equity, and evaluating and improving newborn screening processes and infant outcomes.

## What are your research interests?

I've focused on CF for over three decades. My research includes observational studies to identify risk factors for more severe disease, increasingly focused on health disparities. I have also been engaged in clinical trials of new CF therapies during a time of incredible progress in CF. The first drug for CF lung disease was approved by the FDA in 1994; we now have highly effective therapies specific to disease-causing gene variants. For the past decade, I have evaluated and led improvement activities for CF newborn screening through the Cystic Fibrosis Foundation. This has led to a major initiative to improve timeliness and equity of newborn screening. For a few years, I've been working with [John Rogers, PhD](#), and his group at the [Querrey Simpson Institute for Bioelectronics](#) (QSIB) to test a new device for sweat testing (the diagnostic test for CF) that is easier to perform and appropriate for use far away from large medical centers, including rural areas and low- and middle-income countries. We are also studying a device that can accurately measure cough frequency and severity.

## What is the ultimate goal of your research?

The goal of CF research is that every person with CF is diagnosed early and treated with therapies that prevent lung disease and reverse pancreatic damage, resulting in good health and a normal life expectancy. The long-term goal is curative therapy, but diagnosis in the first month of life and immediate access to highly effective treatment is a game-changer that is within our reach.

In my responsibilities at NUCATS and Stanley Manne, the goal is to accelerate research through removing barriers and speeding the process from discovery to improved health for people. This includes workforce development with a strong focus on workforce diversity.

## How did you become interested in this area of research?

My interest in CF started in childhood when I met children with CF. In medical school at Feinberg, I worked with John Lloyd-Still, a gastroenterologist who ran the CF Center at

Children's Memorial Hospital and who trained with Harry Schwachman, one of the field's pioneers. At that time, the cause was unknown, and the care was based on symptom control and compassion. I was inspired to understand and treat CF better.

My NUCATS and Stanley Manne activities grew from a combination of curiosity and a passion for helping others to advance medicine and science. Health trajectories start in early life — everyone should collaborate with child health researchers!

## What types of collaborations are you engaged in across campus (and beyond)?

I have collaborators in my division at Lurie Children's, in other departments and divisions at Northwestern Medicine, and at QSIB. Collaborators for the newborn screening work are across the U.S. and include community partners. Much of the clinical trials work is international.

I work with leaders in NUCATS and investigators across Northwestern departments and schools and beyond. The TL1 Program co-director, [Evan Scott, PhD](#), is the best partner I could possibly have to optimize professional growth for the doctoral students, post-docs and clinical fellows who comprise our scholars.

## How is your research funded?

My current research is funded by the Cystic Fibrosis Foundation, Cystic Fibrosis Foundation Therapeutics, Inc, NIH/NCATS, and industry sponsors. I was just awarded a grant from the Centers for Disease Control for a proposal to improve timeliness and equity in diagnosis of CF in babies with a positive newborn screening test. This is not a research grant, but a way to disseminate research findings while engaging parents, primary care practitioners, and public health professionals to promote immediate referral and follow-up.

## Where have you recently published papers?

My most recent papers have been published in the [International Journal of Neonatal Screening](#), the [American Journal of Respiratory and Critical Care Medicine](#), and the [Journal of Cystic Fibrosis](#).

# Studying Dopaminergic Neuron Subtypes

## Milagros Pereira Luppi, student in the Driskill Graduate Program in Life Sciences (DGP)



Milagros Pereira Luppi, student in the Driskill Graduate Program in Life Sciences (DGP), studied dopaminergic neurons in the laboratory of [Rajeshwar Awatramani, PhD](#), professor in the Ken and Ruth Davee Department of [Neurology](#) Division of [Movement Disorders](#).

### Where is your hometown?

I was born and raised in Buenos Aires, the capital city of Argentina. My family and most of my friends live there, and it is also where I started my research career.

### What are your research interests?

I am very interested in brain development. The brain is the most complex organ in the human body, and it is composed of different types of cells including several kinds of neurons. This cell diversity allows us to perform a wide variety of functions and interpret and respond to stimuli from the world around us. However, the developing brain starts as a simple tube lined with seemingly similar cells. I am interested in understanding how this tube develops into the full array of neurons in the adult brain. Looking at the brain at the early stages of development is like having a cheat sheet of how to make a neuron. If we knew more about the processes that come into play to decide whether a cell becomes one neuronal type or the other, we could use it to recapitulate this diversity in the lab. This would be huge for therapy development and cell regeneration approaches.

### What exciting projects are you working on?

As a student in the lab of Raj Awatramani, I have been studying the development of a neuronal population in the brain known as dopaminergic neurons. These neurons are known for degenerating in Parkinson's disease, the second most common neurodegenerative disease in the U.S. Dopaminergic neurons are a diverse population. Mainly, I seek to understand how this diversity is generated during development.

Our lab specializes in mouse genetics. We design tools to tag neurons with fluorescent markers. To understand how dopaminergic neurons are generated, we activate fluorescent labels in progenitor cells in the early embryo, and we follow their fate to see what they give rise to in the adult mouse brain. Visualizing them helps us identify them and ask questions about their anatomic location and numbers. We can

also explore what genes they are expressing to gain insights into their function and how they are affected by Parkinson's disease. My thesis project tested and confirmed the hypothesis that some specific dopaminergic neuron subtypes have a distinct developmental origin.

### What attracted you to your program?

Northwestern University has outstanding PhD programs in life sciences. As I was looking for an umbrella program in biomedical sciences, I was attracted to the DGP because it offers lab rotations in different research fields. I also wanted my research to have a clinical application without being fully translational. I found plenty of labs at Feinberg where there is room for experiments to investigate both, basic biology, and pathological processes. I met an engaging community of highly motivated students and faculty here. After an in-person visit, it was an easy choice.

### What has been your best experience at Feinberg?

As I approach the last few months of my PhD, I have reflected that my time at Feinberg is full of the best experiences inside and outside the lab. I have grown as a scientist and person thanks mainly to the people I have met here: my mentors, colleagues and friends. I've taken courses and classes to develop skills in scientific communication, management and new technologies. In addition, Feinberg has cutting-edge core facilities and resources; it feels like we can tackle any experiment we need to further our science. My time at Feinberg has exceeded all expectations.

### How would you describe the faculty at Feinberg?

I am amazed at the level of collaboration between departments, and faculty members typically encourage students to reach out to other labs. I had the opportunity to work closely with other labs, which exposed me to other fields and techniques. Every principal investigator I met was always responsive and willing to help a student. I will look for this supportive environment wherever I go after finishing my PhD.

### What do you do in your free time?

I balance hours of being indoors working in the lab with lots of time outside. I frequently explore the city on foot — I like to call it “urban hiking.” Biking by the lake is also one of my favorite activities, but Chicago has so much more to offer. There is always something to do here.

### What are your plans for after graduation?

I am currently interviewing for postdoc positions. My goal is to become an independent investigator.

# Investigating Cardiac Rehabilitation

Alexis Stewart, research assistant, Center for Health Services and Outcomes Research (CHSOR), Institute for Public Health and Medicine (IPHAM)



Alexis Stewart, research assistant at the Center for Health Services and Outcomes Research (CHSOR), part of the Institute for Public Health and Medicine (IPHAM), investigates cardiac rehabilitation for patients with heart failure.

#### Where are you originally from?

I was raised in Peachtree City, GA (about 30 minutes south of Atlanta).

#### What is your educational background?

I went to Mercer University in Macon, GA for undergrad where I earned my Bachelor of Business Administration in marketing and sociology.

#### Please tell us about your professional background.

After I graduated college, I began working at Northwestern on

an NIH grant, of which I am a grant supplement awardee. The supplement is an implementation and learning collaborative to increase the use of cardiac rehabilitation for patients with heart failure at various cardiac rehabilitation centers nationwide.

#### Why do you enjoy working at Northwestern?

Having the opportunity to plan and lead a part of the project has been a truly unique and rewarding experience, and I'm glad Tara Lagu, MD, PhD, suggested applying for the supplement.

#### What exciting projects are you working on?

Through this work, I'm gaining experience in qualitative research methods as I lead and analyze interviews.

#### What do you like to do in your spare time?

Outside of work, I enjoy reading, exploring the city with my friends and baking.

## New Faculty

Lirong Yan, PhD, joined as associate professor in the department of Radiology in April 2022. Previously Yan was assistant professor at the University of Southern California. Yan's research has focused on the technical development of novel non-invasive MRI technologies to study cerebrovascular structure and hemodynamics, which could serve as useful imaging tools for the clinical diagnosis of cerebrovascular disease and novel imaging markers of neurodegenerative diseases. Yan has served as principal investigator of several grants from the NIH, American Heart Association and BrightFocus Foundation. She is also an active member of the International Society of Magnetic Resonance in Medicine (ISMRM). She was awarded ISMRM Junior Fellow in 2014 and has served for ISMRM Workshop and Study Group Review Committee and Subcommittee on the Young Investigator Awards.



**Population Health Forum  
& 10th Anniversary**

December 8, 2022

**SAVE THE DATE**

**The Institute for Public Health and Medicine (IPHAM) is the nexus for all public health activities at the Feinberg School of Medicine.**

**Check out the latest events and research at:**  
[feinberg.northwestern.edu/sites/ipham/](https://feinberg.northwestern.edu/sites/ipham/)



## NUCATS Corner

Clinical and Translational Sciences Institute



### Ask Us Anything During NUCATS Office Hours

If you are new to [NUCATS Institute](#) resources, part of a well-established research team or somewhere in-between, please consider taking advantage of the Institute's monthly office hours.

Join NUCATS Institute Senior Navigator, [Toddie Hays](#), at 3 p.m. on Monday, September 12, to learn more about the resources and services available to help facilitate and accelerate your clinical and translational research.

Past sessions have addressed issues from setting up a new study in REDCap and engaging the Clinical Research Unit to learning more about the pilot program application process and the breadth of NUCATS services.

Add these upcoming drop-in sessions to your calendar:

Monday, September 12, 3-4 p.m., [Zoom](#)

Tuesday, October 18, 12-1 p.m., [Zoom](#)

## Breakthroughs Podcast

### Cell-Based Treatments to Fight Diseases with Luisa Iruela-Arispe, PhD

Cell and developmental biology is a field that's integral to finding new therapies for a wide variety of diseases. At Feinberg, [Luisa Iruela-Arispe, PhD](#), a vascular biologist, leads the Department of Cell and Developmental Biology as chair. In this episode, she talks about her research and the future of cell-based treatments for diseases.

[Listen to the episode here.](#)



## NIH News

### [Introducing Ericka Boone, the New Director of the Biomedical Research Workforce Division](#)

Ericka Boone is the new NIH Director of the Biomedical Research Workforce Division in the Office of Extramural Research, where she will shape the future of research training for employees in the biomedical science community. Early exposure to science as a career, access to effective mentors and research training opportunities, equity in funding, lowering of barriers encountered during career transition periods, relief for high levels of student loan debt and more are among some of the most pressing needs of the biomedical research workforce, especially so for people like her – investigators from backgrounds that are underrepresented in the biomedical sciences. In her new role, Boone wants to motivate early-career investigators to overcome development obstacles.

### [More Early-Stage Investigators Supported in FY 2021](#)

In FY21, NIH supported 1,513 new Early-Stage Investigators (ESIs) as first-time PIs on R01-equivalent awards. This new all-time high level of support for ESIs represents a 7.2 percent increase over FY20. This number was seen after several years of steady growth in the number of ESIs supported since implementing NIH's Next Generation Researchers Initiative (NGRI).

### [Inflation and NIH Research Project Grants](#)

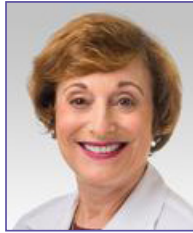
The rate of inflation for NIH-funded research was higher than the general rate of inflation from 1998 until 2012. Despite increases in nominal costs, recent years have seen increases in the absolute numbers of RPG and R01-equivalent awards. Research-specific inflation is reported as the Biomedical Research and Development Price Index (BRDPI), which measures changes in the weighted average of the prices of all inputs (personnel services, various supplies and equipment) purchased with the NIH budget to support research. According to the research, average and mean (BRDPI-adjusted) RPG costs increased during the NIH-doubling (1998 to 2003) but has remained stable since.

# Sponsored Research

**PI: Rosalind Ramsey-Goldman, MD, Gallagher Research Professor of Rheumatology and professor of [Medicine \(Rheumatology\)](#)**

**Sponsor: National Institute of Arthritis and Musculoskeletal and Skin Diseases**

**Title: “Leveraging Community-Academic Partnerships and Social Networks to Disseminate Vaccine-Related Information and Increase Vaccine Uptake Among Black Individuals with Rheumatic Diseases”**



Individuals with chronic rheumatic diseases including arthritis comprise approximately 25 percent of the U.S. population. Racial/ethnic and socioeconomic disparities in adverse, often avoidable outcomes, occur in nearly all rheumatic diseases, particularly among Black and lower socioeconomic status individuals. Despite the importance of vaccinations in patients with rheumatic diseases, and the high rates of serious infections, vaccine uptake is consistently poor.

In the U.S., COVID-19 vaccine uptake is lower and vaccine hesitancy is higher among Black patients compared with white patients, and this holds true in rheumatic diseases. With the profound disparities uncovered by the COVID-19 pandemic aggravated by proven disparities in rheumatic disease outcomes, and heightened vulnerability to infections, there is an urgent need to address low vaccine uptake and hesitancy among Black individuals with these conditions. In addition, it is critical to also increase vaccine uptake among the social networks of individuals with rheumatic diseases who are immunosuppressed and may have less robust vaccination responses.

Our team has forged longstanding community-academic partnerships in the Boston and Chicago areas to understand the needs of Black individuals with lupus, a systemic rheumatic disease, and the role racism plays in health and healthcare access. Framed by the Public Health Critical Race Praxis that recognizes the pervasiveness of racism in our society, we will leverage our community-academic partnerships to implement the CDC’s Popular Opinion Leader (POL) model whereby trusted community leaders are trained to disseminate information regarding COVID-19 vaccination through their social networks in predominately Black communities to increase vaccine uptake and reduce hesitancy.

The aims of the project are as follows. Aim 1: To leverage community-academic partnerships across two U.S. cities to develop training and evaluation materials for POLs. Aim 2a: To establish the efficacy of a community-based intervention with and without a racial justice framework to increase COVID-19 vaccine uptake and reduce hesitancy among social networks of Black individuals with rheumatic conditions. We will conduct a cluster randomized controlled trial to test whether POLs trained with racial justice framing embedded in information on vaccine safety and efficacy will result in greater COVID-19 vaccine uptake among their social network members compared to safety and efficacy training alone. Aim 2b: To determine the structure and composition of the outreach social networks of POLs. We will enhance the existing POL model by adding a validated mixed methods approach to compare the social networks reached by POLs in each arm. We hypothesize that incorporating a racial justice lens will empower POLs to disseminate information more broadly and more persuasively and increase vaccine uptake by reducing fear and mistrust.

[Read more about this project](#)

**PI: Darius Tandon, PhD, Director, Institute for Public Health and Medicine (IPHAM) - Center for Community Health, and associate professor of [Medical Social Sciences](#)**

**Sponsor: National Heart, Lung, and Blood Institute**

**Title: “2-Generation Interventions to Improve Cardiovascular Health in Indiana and Illinois Through Home Visiting (2-NOURISH)”**



The 2-Generation Interventions to Improve Cardiovascular Health in Indiana and Illinois Through Home Visiting (2-NOURISH) clinical center addresses growing rates of maternal morbidity and mortality and establishes an intervention to optimize maternal cardiovascular health (CVH). Poor maternal CVH is also associated with poor offspring CVH. As a result, the perinatal period is an opportune time to intervene, but evidence-based interventions are limited. Home visiting (HV) programs serve as an ideal setting to conduct intervention research aimed at improving maternal and child CVH as they already serve an at-risk population across the United States with a high prevalence of poor CVH.

The proposed clinical center led by Northwestern is a partnership with two evidence-based HV models (Healthy Families America [HFA] and Parents as Teachers [PAT]), and an evidence-based virtual platform for lifestyle intervention, Weight Watchers International (WW). Prior experiences, which enable 2-NOURISH to succeed include: (1) long-standing collaborations with HV models, including MPI Tandon’s evidence-based perinatal depression and stress management intervention (Mothers and Babies); (2) significant expertise in the development and assessment of maternal and child CVH, particularly during the perinatal period; and (3) extensive experience with recruitment and retention of diverse populations for behavior interventions.

During years 1-2, we will work collaboratively within the ENRICH Network to develop a common study protocol, adapt the intervention content, and conduct pilot tests. During years 3-7, we will recruit 600 mother-child dyads in partnership with 40 HV programs in Illinois and Indiana within the proposed study timeline to achieve the ENRICH Network Goal of 3000 total dyads to examine the effectiveness of an implementation-ready, CVH-focused, evidence-based intervention. Our proposed intervention includes innovative prenatal (promotion of stress management techniques, home visitor patient navigation) and postpartum (intensive lifestyle intervention with a virtual delivery platform, peer support) components.

Our clinical center is additionally committed to developing the skills of early-stage investigators related to clinical trial design and the skills of home visitors related to promoting CVH. 2-NOURISH is ideally suited to serve as a clinical center and contribute to the ENRICH Network’s long-term mission to equitably improve maternal and early childhood CVH.

[Read more about this project](#)

# Funding

The Feinberg School of Medicine has increased seed funding up to \$50,000 for application preparation to initiate new multi-investigator program project or center grant applications involving Feinberg faculty. [Learn more on the website here.](#)

## Early-Stage Therapy Development for ADRD (R61/R33 Clinical Trial Not Allowed)

[More information](#)

**Sponsors:** NIH, National Institute of Neurological Disorders and Stroke (NINDS) and National Institute on Aging (NIA)

**Letter of intent:** September 30

**Submission deadline:** October 30

**Upper amount:** Up to \$500,000 per year, up to five years

Alzheimer's Disease and Alzheimer's Disease Related Dementia (AD/ADRD) refers to the most common forms of dementia. Dementia likely affects more than 6 million people in the U.S. and more than 47 million people worldwide. This funding opportunity supports early-stage development of novel small molecule or biologic therapeutics for NINDS mission-related Alzheimer's and related dementias.

## HEAL Initiative: Translating Research to Practice to End the Overdose Crisis (R33 Clinical Trial Optional)

[More information](#)

**Sponsors:** National Institutes of Health

**Submission deadline:** October 14

**Upper amount:** \$750,000 per year, up to five years

The goal of this funding opportunity is to support action-oriented research that accelerates the translation of research to practice addressing the overdose crisis. There remains an urgent need for research to address understudied areas of opportunity, particularly addressing the fundamental barriers or facilitators to reducing overdose deaths at the individual, provider, organizational, community or system levels. High priority areas are those that advance the goal of creating stigma-free patient-centered systems of care such that people who experience addiction can recover and sustain their recovery long term.

## Career Development Award

[More information](#)

**Sponsors:** Conquer Cancer, the American Society of Clinical Oncology (ASCO) Foundation

**Submission deadline:** October 20

**Upper amount:** Up to \$200,000 over three years

The Career Development Award (CDA) provides research funding to clinical investigators, who have received their initial faculty appointment, as they work to establish an independent clinical cancer research program. The research must have patient-oriented focus, including a clinical research study and/or translational research involving human subjects. For 2023, dedicated funding is available in, but not limited to, palliative and support care in oncology, diversity and inclusion in cancer research, and diversity and inclusion in breast cancer research. Applications in all areas of cancer research are accepted from U.S. and international applicants.

## Integrated Physiology of Exocrine and Endocrine Pancreas in Type 1 Diabetes (R01 Clinical Trial Not Allowed)

[More information](#)

**Sponsors:** NIH and National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

**Letter of intent:** January 21

**Submission deadline:** February 21

**Upper amount:** Up to \$500,000 per year, up to five years

This funding opportunity will support multi-disciplinary teams to examine interactions between exocrine and endocrine pancreas to support the study of T1D. The purpose of this opportunity is to encourage integrated study of the whole pancreas to enable characterization of direct and indirect crosstalk between exocrine and endocrine compartments, and identification of mechanisms by which that crosstalk occurs and can be disrupted in T1D and other forms of diabetes.

Read more about the highlights of our educational programs, innovative research and discoveries, and our outstanding students, faculty, and staff in the [Feinberg News Center](#).

# National Institutes of Health's Final Policy for Data Management and Sharing

Effective January 25, 2023

By Sara Gonzales, MS, MLIS, Data Librarian and Pamela Shaw, MS, MSLIS, Biosciences and Bioinformatics Librarian

Throughout 2022 the National Institutes of Health (NIH), [publishers](#), and institutional stakeholders across the US have been working to inform researchers of the NIH's [final policy for data management and sharing](#), which goes into effect January 25, 2023. In an effort to support reproducibility of research, the NIH has instituted this policy, which builds on a foundation of [NIH data sharing policies](#), to encourage replication of studies and sharing of biomedical research data to the greatest extent possible.

The policy requires submission of a data management and sharing plan (DMSP) that outlines how data and metadata will be shared. The plan is to be submitted in the budget justification for extramural awards or in the technical evaluation (performed by NIH-ICO staff) for contracts. Data management and sharing plans, not meant to exceed two pages, should describe the types of data to be collected, preserved and shared. These plans must note the software used to produce or collect the data, the types of data and metadata standards that will be used in the project and a data submission timeline in addition to a listing of the repository that will be used for data sharing. Data management and sharing plans must also detail how sharing, access and re-use are affected by any privacy concerns or other restrictions, and how data management and sharing will be overseen in the project.

Plan compliance will be measured by data being shared in the manner described in the DMSP by the time of an associated publication, or the end of the grant's performance period, whichever comes first. Compliance will be monitored by NIH program staff and non-compliance can impact future funding decisions.

The NIH has publicized a wide variety of online resources to familiarize investigators with the upcoming policy requirements and how to remain compliant. The [NIH Scientific Data Sharing website](#) is a one-stop clearinghouse

of information on the policy, including supplemental draft guidance documents, information on how to access NIH-supported data and [other sharing policies](#) based on specific data types. Of key interest are the data management and sharing policy's supplemental documents, which outline:

- Section-by-section guidance for writing a DMSP: [Elements of an NIH Data Management and Sharing Plan](#)
- A cost-defining supplement, outlining the data management and sharing costs that can be written into grants: [Allowable Costs for Data Management and Sharing](#)
- A repository selection supplement, for selecting where to share data: [Selecting a Repository for Data Resulting from NIH-Supported Research](#)

The Galter DataLab is Feinberg's resource for information and assistance related to the NIH's DSMP. We have developed specialized support around the upcoming policy change, including:

- A new Galter class, [Getting to know the NIH Data Management and Sharing Policy](#)
- A GalterGuide, [Creating an NIH Data Management and Sharing Plan](#)

For questions and consultation support on creating a data management and sharing plan, contact the [Galter DataLab](#) or Data Librarian [Sara Gonzales](#).

For additional information, see:

- Two upcoming presentations in the [NIH Data Management and Sharing Policy Webinar Series](#)
- [Introduction to the NIH Data Management and Sharing Plan](#) by Lisa Federer / Network of the National Library of Medicine
- [NIH Data Management and Sharing Session 5. Policy Recap and Q&A](#) / Network of the National Library of Medicine:

# High-Impact Factor Research

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## Featured Core

### Center for Advanced Molecular Imaging

Northwestern's Center for Advanced Molecular Imaging (CAMI) provides investigators access to imaging instrumentation and support facilities ranging from the nanometer scale to whole animal imaging. CAMI was created by Thomas Meade, PhD, to bridge the gap between basic science and science-based medicine, with an emphasis on quantitative, *in vivo* imaging. The center also assists investigators with medical image analysis and visualization. Pilot funding is available for investigators that are new to preclinical imaging.

#### Services include:

- High field magnetic resonance imaging (Bruker 9.4T and 7T magnets)
- Preclinical nuclear imaging (MILabs U-SPECT+/CT and Mediso nanoScan PET/CT)
- Whole body bioluminescence and fluorescence imaging (IVIS Spectrum)
- Atomic force microscopy of live cells (operated by Scanning Probe Imaging and Development Facility)
- Surgery suite in collaboration with the Center for Advanced Regenerative Engineering
- CCM manages free transportation of animals between campuses
- AALAS certified veterinary technician, specializing in preclinical imaging
- Image analysis and visualization, including the use of the center's 20-foot 3D wall

#### Contact:

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