

Breakthroughs

Feinberg School of Medicine Research Office

August 2021



Advancing Health Equity Research at Feinberg

Supporting research projects that partner scientists and individuals with diverse lived experiences is an area of growth for the research enterprise. At Feinberg, the Alliance for Research in Chicagoland Communities (ARCC), a program of the [Center for Community Health](#), is helping move the needle forward by facilitating equitable and collaborative community-academic research partnerships between Chicagoland communities and Northwestern Medicine investigators which aim to address health inequities through community-engaged research.

ARCC was co-founded in 2008 by the late [Virginia Bishop, MD, MPH](#), and [Jen Brown, MPH](#), current co-director of ARCC and lecturer of [Preventive Medicine](#) in the [Division of Public Health Practice](#), with the recognition that those who best understand community-engaged research are not those at an academic institution, but in the community. ARCC is a program of the [Center for Community Health](#) serving the Institute for Public Health and Medicine ([IPHAM](#)) and the Northwestern University Clinical and Translational Sciences ([NUCATS](#)) Institute.



Jen Brown, MPH

"The knowledge for addressing health equity comes from communities most impacted by inequities, and that understanding comes from lived experience." Brown said. "Only by leveraging, centering and building from that knowledge in combination with scientific methodological expertise can academia identify questions, design studies and pivot findings to implementation and action. We must start with that."

Change from Within

At the core of ARCC's operations is its steering committee, which is comprised of community- and faith-based organizations, the Chicago Department of Public Health and Chicago Public Schools, in addition to Northwestern Medicine investigators. The committee serves as the participatory governance body for ARCC, having established from the beginning ARCC's mission and areas of focus: commitment to equity and engaged research, capacity for engaged research, funding for research and actionable research findings.

ARCC supports community-engaged research, including community-based participatory research, through community-academic research partnership facilitation, capacity-building workshops, seed grants, and advocacy for supportive institutional policies, among other activities and publicly available [resources](#). Simultaneously, ARCC continuously works to shift the research enterprise's idea of trust, according to Brown.

"The truth is that institutions hold the power and privilege, so we are the ones that must change so that we are worthy of the community's trust," Brown said.

As co-director of ARCC, Brown increases community voice in the research decision-making process at Northwestern and in the larger research enterprise. For example, community leaders always accompany Brown or ARCC staff to any engagement ARCC is invited to. Serving alongside Brown is Shehara Waas, community co-director of ARCC, who forms sustainable relationships between communities and research organizations in order to amplify community-driven perspectives and leadership in research.

"If you want to have health equity and systems change, the important thing to realize is that much of how the research enterprise works has been very elitist — it's really cut community out and hasn't centered the idea of power sharing," Waas said.

Equity Research *(continued from cover page)*

"So, the closer we get to community driving the agenda, the closer we can get to real systems change and a real understanding of what health equity is."

Facilitating Health Equity Research

In partnership with NUCATS and Northwestern Memorial Hospital, ARCC's [seed grant program](#) supports local community-academic research partnerships and projects that aim to address health inequities. To date, the program has distributed over \$1.25 million to more than 90 community-academic partnerships, which include a community lead from a local community organization and an academic lead from Northwestern. Funding distribution is overseen by ARCC's steering committee, who also provides extensive feedback to all applicants. In the last year, the ARCC's seed grant program was restructured to have a stronger focus on racial equity and addressing the root causes of inequities.

Recently, ARCC supported a project partnership between Northwestern Medicine's African American Transplant Access Program ([AATAP](#)), [NUGoKidney](#) and the [Endeleo Institute](#). The project aims to mitigate food deserts — areas with limited access to affordable healthy food — as well as improve outcomes for patients with kidney disease in predominantly Black communities in Chicago.

"This project represents an intervention that is backed by research, but also concordant with community-reported need — it is how community partnerships should be," said [Dinee Simpson, MD](#), assistant professor of [Surgery](#) in the [Division of Organ Transplantation](#), director of AATAP and a co-principal investigator of the project.



Shehara Waas

"We're living in a city where, inexplicably, there are barriers to opening food pantries in the community. Yet food deserts are allowed to proliferate in these very same neighborhoods. So, our collaborative aims to address and mitigate a perfect storm contributing to health disparities that are actually expanding the life expectancy gap in Black communities," said Melvin Thompson, executive director of the Endeleo Institute.

Another project recently supported by ARCC is the Mind Wellness Compass Program, co-led by [Aderonke Bamgbose Pederson](#).

['15 MD, '18, '19 GME](#), instructor of [Psychiatry and Behavioral Sciences](#), and Nancy Asirifi-Otchere, program director at the [United African Organization](#), a coalition of African community-based organizations that promotes social and economic justice, civic participation and empowerment of African immigrants and refugees in Illinois.

The program will improve the understanding of mental health stigma and increase access to mental health services for African Americans and Black immigrants in Chicago. Currently, the team is conducting needs-based assessment surveys and focus groups to collect data on mental illness stigma in these communities.

"By centering the voices of lay community members, we are more likely to understand the specific experiences of individuals that lead to limited engagement in mental health services. Some members of the community shared that they feel therapy is designed for white individuals and they sometimes feel judged by their primary healthcare providers when discussing their mental health or emotional wellbeing," Pederson said.

ARCC also facilitated a partnership between [Maryann Mason, PhD](#), associate professor of [Emergency Medicine](#), and Mary Roberson, EdD, executive director of the Northern Illinois Recovery Community Organization. Their project seeks to address and dismantle health-related barriers for persons of color in recovery from substance misuse.

"After speaking and meeting in person with Dr. Mason, our interest for the subject matter aligned and we began our work together," Roberson said. "Our work in the opioid overdose arena intersected and our work to highlight communities of color was a natural fit."

During interviews, these individuals revealed a perceived lack of patience from healthcare providers and a lack of knowledge and experience in navigating the healthcare system as barriers. Most individuals also reported having diabetes, hypertension and heart disease.

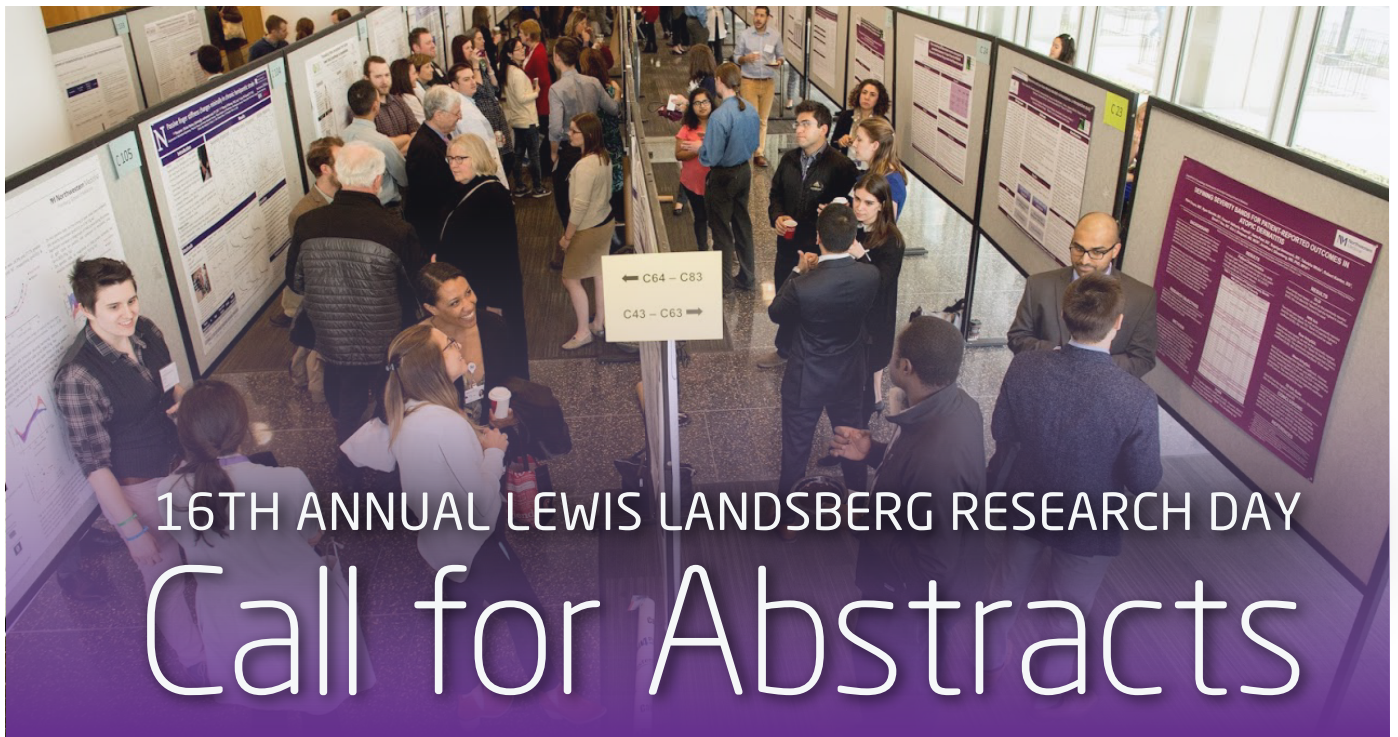
"We've identified three approaches that might help people of color in recovery better access and manage good healthcare for their chronic conditions," Mason said. "These are based on ideas for interventions that connect people to healthcare providers and systems but also educate healthcare providers and systems about the lived experience of persons of color who are in recovery. We are looking forward to identifying funding to help implement a top priority approach."

As ARCC continues to expand its impact, Brown said the center will continue to develop stronger community accountability, in that ARCC's success will be evaluated and measured by the communities and research stakeholders it serves. Continuing anti-racism work is also at the top of ARCC's agenda, as well as creating a more bi-directional community-engaged research process, where both community and academic partners participate in setting research agendas.

"When we started ARCC, doing community-engaged research was much more thought of at the project and partnership level. "Brown said. "A lot can happen at that level, but it will be a lot harder if the systems, structures and institutions in which people are doing that work from don't change."

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16TH ANNUAL LEWIS LANDSBERG RESEARCH DAY

Call for Abstracts

Submission Deadline

Thursday, September 2 at 11:59 p.m.

Research Day is Friday, October 1 from 1 to 5 p.m. on the Chicago campus.

This event features a poster competition open to researchers in the following categories:

- Faculty
- Graduate students
- Undergraduate students
- MD-PhD students
- Medical students
- Postdoctoral researchers and fellows
- Clinical residents and fellows
- Research staff

Those interested in participating in the 2021 event must submit an abstract online no later than **11:59 p.m. on Thursday, September 2** at feinberg.northwestern.edu/abstracts

Space is limited and will be assigned on a first-come, first-serve basis.

For more information, please contact the Feinberg Research Office, 312-503-1499 or researchday@northwestern.edu

Graduate Student/Post-Doc Events and Opportunities

Explore Your Wellness Goals Through Wellness Coaching

Wellness Coaching helps you identify and achieve your wellness goals, balance dimensions of wellness and learn practical skills to improve overall well-being.

Coaches can address goals related to:

- Physical Activity
- Sleep
- Healthy Eating
- Time Management
- Stress Management/Coping Skills

Learn more and register on the [Wellness at Northwestern](#) website.

Cardio Kickboxing

Monday, August 30, September 6 and 13

Time: 4:30 p.m. CST

Online via Zoom [Register here](#)

Please review the [Virtual Group Exercise Online Consent](#) before participating in any virtual classes.

To view more group exercise sessions, [click here](#).

Contact: Northwestern Recreation, recreation@northwestern.edu

New Exhibitions at The Block Museum of Art

September 22 – December 5

Time: noon to 5 p.m.

The Block Museum of Art

40 Arts Circle Drive

Evanston, IL 60208

[Map it](#)

“Cloudless Blue Egress of Summer”

“Cloudless Blue Egress of Summer,” a two-channel video installation by the artist Sky Hopinka, offers an immersive and elusive reckoning with histories of colonial violence and Indigenous resistance. The thirteen-minute work examines the history of the Castillo de San Marcos, the oldest fort in the continental United States.

[More information](#)

“Who Says, Who Shows, What Counts: Thinking about History With The Block’s Collection”

In 2020, Northwestern University’s Block Museum of Art celebrated its 40th anniversary. Leading up to this milestone, The Block introduced a major initiative to acquire works of art that encourage critical thinking about the representation of history. This initiative and The Block’s anniversary celebration culminates with “Who Says, Who Shows, What Counts: Thinking about History with The Block’s Collection,” an exhibition inviting visitors to think critically about how artists, artworks and museums engage with narratives of the past.

[More information](#)

Research in the News

June 7, *Chicago Tribune*

[No Link between stress and infertility, doctor says, so stop telling couples, ‘Oh, just relax and you’ll get pregnant’](#)

Tarun Jain, MD, was featured.

June 10, *ABC News*

[Food allergies complicate hungry Americans’ search for meals](#)

Ruchi Gupta, MD, MPH, and Lucy Bilaver, PhD, were featured. This research was also featured in *San Francisco Chronicle*.

June 30, *Crain’s Chicago Business*

[Northwestern researchers develop pacemaker that dissolves in body](#)

John A. Rogers, PhD, was featured.

This research was also featured in *WebMD*, *U.S. News & World Report* and *HealthDay*

July 12, *Fox News*

[Coffee consumption linked to lower risk of COVID-19 infection](#)

This research was also featured on *WGN*.

July 19, *Fox 32*

[Drug that could stop 1 in 5 strokes: study](#)

July 23, *WebMD*

[Money Can Buy Americans Longer Life: Study](#)

Greg Miller, PhD, was featured.

This research was also featured in *U.S. News & World Report* and *HealthDay*.

July 23, *U.S. News & World Report*

[Stronger Hearts, Better Outcomes in Pregnancy: Study](#)

Sadiya Khan, MD, MSc, was featured.

This research was also featured in *HealthDay*.

Creating Experimental and Computational Tools to Devise Novel Protein Therapeutics

Gabriel Rocklin, PhD, assistant professor of Pharmacology



[Gabriel Rocklin, PhD](#), is an assistant professor of [Pharmacology](#) and a member of the [Robert H. Lurie Comprehensive Cancer Center](#) of Northwestern University. He is also a faculty member at Northwestern's [Center for Synthetic Biology](#), where his [lab](#) develops high-throughput methods for protein biophysics and protein design, with a focus on protein therapeutics.

Q&A

What are your research interests?

I am interested in how protein sequences determine protein phenotypes such as structure, folding stability, conformational dynamics, binding affinity for small molecules and other proteins.

What is the ultimate goal of your research?

The goal of our lab is to develop experimental and computational tools to explore these sequence-phenotype relationships. We have both fundamental and applied sides of the lab. We investigate sequence-phenotype relationships as well as use our approaches to design new proteins for many applications. Our ultimate goal is to create computational and experimental tools that empower protein design research around the world, as well to develop new classes of protein therapeutics.

How did you become interested in this area of research?

I first became interested in biochemistry in high school. I saw pictures of protein structures in textbooks and was astonished at their complexity. When I was in college, several breakthroughs in computational protein design made the field very exciting for me, although I ended up not pursuing protein design research until I was a postdoc. One of my biggest surprises as a postdoc came when I asked 10 different people in our lab the best way to design new proteins. I got 10 very different answers! And there really wasn't any way to know who was correct. So that pushed me into developing new high-throughput experimental methods. These methods now make it possible to systematically examine protein design methods on a huge scale.

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

I think collaboration is one of the best parts of science. For now, my collaborations at Northwestern are with other members at the Center for Synthetic Biology, including [Mike Jewett](#), [Josh Leonard](#) and [Neil Kelleher](#). But as our applied projects develop, we will be excited to find new collaborators in disease areas where protein therapeutics could be beneficial. We also have a great collaboration on the other side of the river with Tobin Sosnick at the University of Chicago. Apart from those, the entire protein design field is extremely collaborative. Our lab is a member of RosettaCommons, a unique international consortium of labs that contribute to the development of the Rosetta software for protein modeling and design. This organization fosters social connections and lines of communication between over 50 labs worldwide. This ultimately promotes collaboration over competition. This helps smooth down the harshest aspects of science and helps the field progress much faster.

How is your research funded?

Our research is funded by two National Institutes of Health awards: a New Innovator DP2 award and an R21 Exploratory Research award. We are also supported by individual fellowships that many of our researchers have earned for themselves, including fellowships from the Japan Society for the Promotion of Science, the Human Frontier Science Program, the [Chemistry of Life Processes Training Program](#), the São Paulo Research Foundation and RosettaCommons.

Uncovering the Genetics of Epilepsy

Hannah Happ, fifth-year student in the Driskill Graduate Program in Life Sciences (DGP)



Hannah Happ, a fifth-year student in the Driskill Graduate Program in Life Sciences (DGP), studies the molecular basis of epilepsy in the laboratory of [Gemma Carvill, PhD](#), assistant professor of [Neurology](#) in the Division of [Neurophysiology/Epilepsy](#). Over the past 20 years, the field has gradually recognized that most epilepsies have a genetic cause, but most patients

lack a “molecular diagnosis” — the specific genetic change that is causing a patient’s epilepsy. Happ and her collaborators in the Carvill laboratory and beyond study the impact of epilepsy-linked genetic variants in order to elucidate their downstream effects.

Q&A

Where is your hometown?

I grew up in Mequon, Wis., about a 30 minute drive north of Milwaukee.

What are your research interests?

My primary interest is in human genetics, which started back in high school when I learned about the Human Genome Project in a biology class. That interest grew during college and was solidified by several fulfilling experiences in human genetics labs.

As a member of the Carvill laboratory, I’ve entered the world of neurogenetics research, where we work to understand the molecular basis of epilepsy. I particularly love the translational aspect of our work and the ability to collaborate with clinicians and provide answers to patients and families affected by epilepsy.

What exciting projects are you working on?

Over the past couple of decades and with the advent of next generation sequencing, we now understand that the majority of epilepsies, both early- and adult-onset, have a genetic basis. However, most patients have an unknown molecular etiology.

Some of these cases may be due to somatic mosaicism, where only a portion of cells in the body carry a disease-causing genetic variant, but detecting variants present only in the brain is very challenging. We propose that cell-free DNA originating from cells in the brain could be used to identify brain-specific genetic variants in individuals with epilepsy caused by somatic variants.

I work with both a mouse model and a human study with a cohort of individuals with epilepsy to investigate this question. This project is funded by Dr. Carvill’s [NIH New Innovator Award](#), which supports innovative, high-risk research; it has been really cool to be a part of cutting-edge research.

What attracted you to your program?

I was initially drawn to the Driskill Graduate Program because it’s a biomedical science umbrella program, which gave me a chance to rotate in different departments. I also loved that the program is on the Chicago campus and is affiliated with Northwestern Medicine and Lurie Children’s Hospital, which facilitates clinical collaborations. There’s also a really nice community of students for studying together, socializing and even finding a reagent when your lab runs out.

What has been your best experience at Feinberg?

My advisor co-leads an Epilepsy Genetics case-conference with [Dr. Elizabeth Gerard](#), an adult epileptologist who directs the Epilepsy Neurogenetics Clinic. Once a month clinicians and researchers meet to discuss particularly interesting or puzzling cases that likely have a genetic basis. We discuss recent genetic testing results, their clinical implications and the logistics of testing patients with suspected genetic disease.

I attended one of these meetings while rotating in the Carvill laboratory, and was pretty much sold on the lab then and there. I joined a biomedical science graduate program at an academic medical center because I’m interested in medicine and excited about genetics research. The medical perspective is an important piece of biomedical research and I love being able to learn about the clinical aspect of the disease I am studying and connect my research with the patients that it will ultimately affect.

Ultimately, though, the best part of my time at Feinberg has been being a part of the Carvill lab. My advisor, Gemma Carvill, is a phenomenal mentor and PI, and she has put together an awesome team. My fellow lab members inspire and motivate me and make coming into work a joy.

How would you describe the faculty at Feinberg?

One of the best things about this program is the collaboration and support for trainees. When I need to learn a new technique, I feel like I can email anyone and will receive a thoughtful response. Just yesterday I walked to a different lab to ask about using a piece of equipment, and the PI immediately showed me how to use it and told me I was free to use it anytime. My lab holds joint weekly lab meetings with two other Feinberg labs that study epilepsy, but with neurophysiology and electrophysiology approaches, which provides helpful perspectives and feedback.

Reducing Resident Burnout with the SECOND Trial

Daniela Amortegui, MA, research project coordinator at the Surgical Outcomes & Quality Improvement Center



Daniela Amortegui, MA, is a research project coordinator at the Surgical Outcomes & Quality Improvement Center (SOQIC). Amortegui manages the [SECOND Trial](#), a randomized trial that measures indicators of surgical resident burnout and offers interventions to improve resident well-being to programs across the country.

My background as an educator combined with my skills in research and experience working with marginalized populations led me to research projects in public health that focused on education in diverse populations.

Why do you enjoy working at Northwestern?

I believe that the university's best resource are the people. They are incredibly talented at all levels.

How do you help scientists at the medical school?

I implement nearly every aspect of a study or organize our teams to execute efforts so that scientists or fellows can publish findings derived from the results.

What is your favorite part of the job?

I love working with qualitative data and working to understand why certain phenomena occur. Using qualitative methodologies allows for a deeper understanding and connection with the communities you aim to help. It centers the use of what many consider "soft skills" even though emotional intelligence is quite difficult for many to understand. I look forward to a time where interpretivist methodologies are more widely applied in academic research.

What exciting projects are you working on?

I currently manage the SECOND Trial, a randomized controlled trial focused on improving the learning environment and well-being of general surgery residents across the country. Through this project we explore how surgical resident training impacts wellness. Having that information we then developed an interactive wellness toolkit to help programs address their well-being needs. Through this project I had the opportunity to spearhead the AAS/SECOND Trial National Mentorship Network designed to diversify mentoring opportunities for residents from underrepresented communities.

Q&A

Where are you originally from?

I was born in Bogota, Colombia, and moved to the states when I was 7 years old. I was raised in Charlotte, North Carolina —so technically that is what I call home. I've also had the pleasure of living in the U.K. and hope to live in many other countries in the future.

What is your educational background?

I have a graduate degree in international education from the University of Huddersfield and the focus of my research was the impact of education policy on helping address social fractures in the U.K.

Please tell us about your professional background.

Before getting involved in academic research I started my professional career in education. I worked as a high school teacher and also as an adult ESL educator with migrant communities in North Carolina. After graduate school I managed a study conducted by a not-for-profit organization. The study aimed to understand how the organization could leverage the "funds of knowledge" approach to help Latin American communities acculturate in the United States.

CARDIA Study Enters 35th Year

Thirty-five years ago, a group of investigators across the U.S. assembled the largest ongoing longitudinal study of cardiovascular disease and risk from youth through adulthood. The Coronary Artery Risk Development in Young Adults study, or CARDIA, was launched in 1985 at four U.S. medical centers: Northwestern Medicine, the University of Alabama at Birmingham, the University of Minnesota and Kaiser Permanente in Oakland, Calif.

The study, funded by the National Heart, Lung, and Blood Institute at the National Institutes of Health, examines how behavioral, environmental and race- and sex-associated factors impact cardiovascular disease development and aging. Donald-Lloyd Jones, MD, ScM, the Eileen M. Foell Professor and chair of Department of Preventive Medicine is principal investigator of CARDIA's Chicago field center at Northwestern Medicine.

[Read more](#) about the study and the progress it has made.



NIH News

Additional Clarifications to Biosketch and Other Support Policies

Although not required until January 2022, applicants and recipients are increasingly following NIH advice and transitioning now to the updated formats and instructions for biosketch and other support documents. As a result, NIH has received user requests for additional clarification on these policies. Improved resources – such as FAQs, sample documents and clarified instructions – have been updated and added, and are now accessible from the NIH [biosketch](#) and [other support](#) pages.

NIH-Wide Strategic Plan for Fiscal Year (FY) 2021-25 Now Available

The NIH-Wide Strategic Plan for FY 2021-25 is [now available for viewing](#). This updated plan articulates NIH's highest priorities over the next five years, outlining the vision for the future direction, capacity and stewardship of biomedical and behavioral research. The plan weaves five cross-cutting themes across these objectives, centered around minority health and health disparities, women's health, public health challenges across the lifespan, collaborative science and data science.

NUCATS Corner
Clinical and Translational Sciences Institute



NUCATS Expands Clinical Research Coordinator Support

In an effort to deliver critical resources for clinical research coordinators (CRC), the NUCATS Institute has launched a new comprehensive [CRC Toolkit](#) intended to support and complement departmental efforts to standardize onboarding and training initiatives. Whether you are interested in becoming a clinical research staff member, have been recently hired as staff or are already a member of the clinical staff community looking for resources and services to advance your career, this toolkit is designed to help.

Next CRC Training Starts September 1

Clinical Research Coordinator (CRC) Basic Training is an intensive online program designed to meet the needs of coordinators who have less than one year of experience or who have never received formal training.

Tuition for the five-session online course starting on September 1 is \$99 for Northwestern University employees, affiliates and Chicagoland CTSA members. The online Basic Training sessions will be presented by a live instructor and allow for direct interaction between

NIH Q&A: Can I request an extension to my ESI period for an event that occurred during a timeframe that includes a previous extension?

An early stage investigator (ESI) is a program director/principal investigator (PD/PI) who has completed their terminal research degree or end of post-graduate clinical training (whichever date is later) within the past 10 years and who has not previously competed successfully as PD/PI for a substantial NIH independent research award.

Some investigators experience a lapse in their research or research training or experience periods of less than full-time effort during the 10-year ESI period. In order to accommodate such lapses, the NIH considers requests to extend the ESI period for reasons that can include medical concerns, disability, family care responsibilities, public health emergencies, natural disasters and active duty military service.

However, the ESI Extension Committee will only consider requests for events that occur within the initial 10 years from receipt of terminal research degree or end of post-graduate clinical training, whichever date is later.

See the [Early Stage Investigator Policies](#) webpage and [ESI FAQs](#) for additional information. For more Q&As, visit the NIH ["You Ask, We Answer"](#) webpage.

participants and facilitators. Review the course topics, registration facts and additional information on our [course website](#), or email nucats-ed@northwestern.edu.

Ask Us Anything

If you are new to NUCATS, 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 noon Friday, August 27, 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.

Upcoming Drop-in Sessions

Fri, August 27, 12-1 p.m., [Zoom link](#), Passcode: 7778786
Tue, September 21, 12-1 p.m., [Zoom link](#), Passcode: 7778786
Wed, October 20, 3-4 p.m., [Zoom link](#), Passcode: 7778786

Sponsored Research

PI: Hank Steven Seifert, PhD, professor of Microbiology-Immunology and the John Edward Porter Professor of Biomedical Research



Sponsor: National Institute of Allergy and Infectious Diseases

Title: Ordered Gene Knockout Libraries for *Neisseria gonorrhoeae*

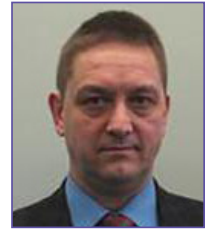
Neisseria gonorrhoeae is the sole causative agent of the sexually transmitted infection (STI) gonorrhea that is restricted to the human population. *N. gonorrhoeae* has co-evolved with its human host throughout all modern history and has evolved specific mechanisms of pathogenesis that relate to its mode of transmission and the anatomical sites it colonizes.

Rates of gonorrhea are rising along with a rapid acquisition of antibiotic resistance. There is an urgent need to understand of the mechanisms of *N. gonorrhoeae* pathogenesis to develop new treatment options or vaccine candidates. *N. gonorrhoeae* is naturally competent for DNA transformation and is one of a few bacterial species that does not regulate competence.

This resource grant will leverage the transformation competence of *N. gonorrhoeae* and synthetic DNA constructs to create ordered gene knockout libraries of the two most commonly used *N. gonorrhoeae* strains. Individual mutants or mutant libraries will be delivered to the research community on request to facilitate research into this STI.

[Read more](#)

PI: Claus-Peter Richter, MD, PhD, vice chair for research, Department of Otolaryngology - Head and Neck Surgery, professor of Otolaryngology - Head and Neck Surgery and at the McCormick School of Engineering



Sponsor: National Institute on Deafness and Other Communication Disorders

Title: Opto-Electrical Cochlear Implants

The goal for neuroprostheses is to restore neural function to a condition having the fidelity of a healthy system. However, contemporary neural prostheses, including cochlear implants, are not able to achieve this goal. The devices use electrical current to stimulate the neurons, which spreads in the tissue and consequently does not allow stimulation of focused neuron populations. Therefore, high fidelity stimulation is not possible.

In our model system, the cochlea, it has been argued that the performance of cochlear implant users could be increased significantly if more discrete non-overlapping locations of neurons situated along the electrode could be stimulated simultaneously. This might be possible with devices that use focal optical radiation to stimulate neurons. Today we know that infrared neural stimulation (INS) is possible, that stimulation rates can be achieved that allow encoding of acoustic information, that the spatial selectivity in the cochlea is more selective than electrical stimulation, and that single channel stimulation in chronic experiments shows no functional damage of the cochlea over at least six weeks.

The developments proposed in this R01 are a logical progression of previous experiments. The aims include the fabrication and testing of hybrid opto-electrical arrays to be surgically inserted into a cat cochlea and showing that each channel of multichannel INS can independently encode information to be perceived by the auditory system.

[Read more](#)

Welcome New Faculty

[Allan Wu, MD](#), joins as professor of [Neurology](#) in the [Division of Movement Disorders](#). Wu completed his Movement Disorders Fellowship training at the University of Southern California in 2001 and was on the faculty at University of California, Los Angeles, from 2005 to 2020. For the last decade, Wu has worked as a physician informaticist on electronic health record projects to improve patient engagement, reduce physician burnout, enhance efficiency and raise awareness of clinical informatics as a specialty. Wu is active in the California Parkinson's Disease Registry and the American Academy of Neurology as vice-chair of the Informatics Workgroup and Practice Management/Technology Subcommittees. At Northwestern, Wu is the director of Applied Clinical Informatics at the Stanley Manne Children's Research Institute and will work to develop a vision of learning healthcare systems for patients where the patient care generates real-time information that can guide shared decision-making and drive improvements in the delivery of care.



Funding

Burroughs Wellcome Fund: Career Awards for Medical Scientists

[More information](#)

Sponsor: Burroughs Wellcome Fund (BWF)
Application Deadline: October 1
Amount: \$700K

Synopsis Career Awards for Medical Scientists is a highly competitive program that provides awards to physician-scientists, who are committed to an academic career, to bridge advanced postdoctoral/fellowship training and the early years of faculty service.

*BWF will make up to two additional awards to clinically trained psychiatrists who focus on research at the interface between neuroscience and psychiatry. These proposals must clearly demonstrate evidence of integration of neuroscience and psychiatry in project design.

Pancreatic Ductal Adenocarcinoma (PDAC) Stromal Reprogramming Consortium (PSRC) (U01 Clinical Trial Not Allowed)

[More information](#)

Sponsor: National Cancer Institute (NCI)
Letter of Intent Due: October 2
Application Deadline: November 1
Amount: \$5.94M to fund up to six awards in FY22; future year amounts are anticipated to be at the same level

Synopsis: The objective of the PSRC is to develop a comprehensive understanding of PDAC tumor progression, its microenvironment (TME) as a tumor fate determinant and the reciprocal tumor-TME interactions that drive clinical outcomes. The information obtained through these comprehensive studies should expose new biology-backed vulnerabilities that will inform the development and preclinical testing of novel interventions in PDAC. Central to the PSRC structural organization is the implementation of multidisciplinary team science approaches that iteratively bridge basic and translational research across the tumor-TME continuum in each U01 research project, in trans-PSRC activities and in collaboration with other NCI-funded mechanisms and programs whenever possible.

Whitehall Foundation: Life Science Research Grants (Neurobiology)

[More information](#)

Sponsor: Whitehall Foundation
Letter of Intent Due: October 1
Application Deadline: December 15
Amount: \$30K-75K per year

Synopsis: The Whitehall Foundation assists scholarly research in the life sciences. The foundation is interested in basic research in neurobiology, defined as “invertebrate and vertebrate (excluding clinical) neurobiology, specifically investigations of neural mechanisms involved in sensory, motor and other complex functions of the whole organism as these relate to behavior.” The foundation does not support research focused primarily on disease(s) unless it will also provide insights into normal functioning.

- **Research grants** are available to established scientists of all ages working at accredited institutions in the United States. Applications will be judged on the scientific merit and the innovative aspects of the proposal as well as on the competence of the applicant.
- The **Grants-in-Aid** program is designed for researchers at the assistant professor level who experience difficulty in competing for research funds because they have not yet become firmly established. Grants-in-Aid can also be made to senior scientists.

The Feinberg Research Office regularly tracks research published by Feinberg investigators. The citations are used on web pages, in newsletters and social media, for internal reporting and more.

To more accurately track these journals, the Research Office asks that Feinberg investigators use the following institution name in the address field when publishing in peer-reviewed journals: “Northwestern University Feinberg School of Medicine.”

Scholarly Communication and Publishing Developments: A Sampling



By Ramune Kubilius, Collection Development / Special Projects Librarian

This month, we're focusing on recent developments in the scholarly communication and publishing ecosystem.

Preprints

Preprints, complete and public drafts of scientific documents that are not yet peer reviewed, have risen in prominence in the last few years. NIH's Preprint Pilot, launched in June 2020, made NIH-supported research on COVID-19 from eligible preprint servers discoverable in [PubMed Central \(PMC\)](#) and [PubMed](#). A 10-month [report](#), released by the U.S. National Library of Medicine in April 2021, summarized pilot findings, including: "Of the preprints included in the pilot, ~60% are currently discoverable only as a preprint version, having not yet been linked to a published article." A PMC pilot eligible preprint service, bioRxiv, reported user [survey results](#) in February 2021: "In general, 42% of authors post their preprints prior to, whereas 37% post concurrently with journal submission."

PLOS supports [preprint sharing](#), July 2021, and a National Information Standards Organization (NISO) [preprint webinar's](#) program (April 2021) spotlights other aspects of the landscape under scrutiny, including existing model sustainability, infrastructure, communicating limitations, and roles.

Peer Review

Peer review is another area where new models are being developed to keep up with the voluminous data emerging and finding its way online. The Committee on Publication Ethics (COPE) site describes recommended [peer review processes](#). Society for Scholarly Publishing blog Scholarly Kitchen guest authors noted in an October 2020 article on [peer review taxonomy](#): "To make timely evidence-based decisions, scientists and non-scientists alike need to be able

to understand how an emerging result has been vetted...," also observing: "Under pressure from both researchers and consumers of research, the practice of peer review is changing and new models are proliferating."

eLife announced its "[publish, then review](#)" model, emphasizing preprints and public review in December 2020. The Confederation of Open Access Repositories ([COAR](#)), of which Galter Library is a member, launched in January 2021 [Notify: Repository and Services Interoperability Project](#), aiming to "develop a standard and interoperable approach that will link reviews and endorsements from different services with the research outputs housed in the distributed network of preprint servers, archives, and repositories."

In September 2021, Peer Review Week participants can explore "[Identity in Peer Review](#)," roles of personal and social identity and ways the scholarly community can foster more diverse, equitable and inclusive practices.

Software Citation

Breakthroughs columns have spotlighted [data management best practices](#), [code archiving](#), and [style consistency in manuscript references](#). What about software, an important and citable product of research? The [Software Citation Policies Index](#), produced by nonprofit organization, CHORUS, in collaboration with the FORCE11 Software Citation Implementation Working Group, is a centralized index of policies with links to the publishers' sites, to be updated at least annually.

These are just a sampling of publishing-related topics affecting the research community. Galter Library team members provide information and support during various stages of scholarly publishing and data management cycles, from [Publication Support](#) to [DataLab](#), and more. Request a [consultation](#) or feel free to [contact us](#) for more information.

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Featured Core

Stem Cell Core Facility

The [Stem Cell Core Facility](#) enables scientists at the Feinberg School of Medicine and Northwestern University to conduct stem cell research, particularly with induced pluripotent stem cells (iPSCs). The core offers services including reprogramming of patient-derived cells, training in essential culture techniques for human iPSCs, facility usage, iPSC gene-editing with quality control and specialized scientific services. The core occupies roughly 800 square feet of laboratory space and includes six biological safety cabinets, six incubators, a hood for stem culture “picking” and manual selection, a qRT-PCR system, multiple microscopes with epifluorescence and an automated cell counter.

Services offered include:

- Generation of human iPSCs
- Isolation and expansion of primary cells (e.g. induced peripheral blood mononuclear cells, fibroblasts)
- Hands-on training and workshops teaching iPSC culturing techniques
- Use of the facility to culture and expand stem cells
- Cell banking and distribution
- Gene editing of iPSCs using CRISPR/Cas9 system
- Characterization and quality control analysis of cells
- Consultation and support for stem cell projects

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