

Breakthroughs

Feinberg School of Medicine Research Office

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Striking Discoveries in Health Disparities

By Anna Williams

Over the last 50 years, medicine has made significant progress in preventing, treating and curing disease. And yet, this progress has not been seen equally across all groups. Scientists throughout Feinberg School of Medicine are deeply invested in identifying health disparities — those differences in health outcomes between populations, such as racial, ethnic, geographic, socioeconomic, gender and other groups. Some of their findings are startling.

Recent Feinberg studies have found that [leaving segregated neighborhoods decreases blood pressure for African-Americans](#) and the [high diabetes risk for African-American adults is driven by obesity](#). Many intervention projects are also underway, including [diabetes prevention in Hispanic communities](#) and exploring [mindfulness interventions](#) for depressed women in disadvantaged populations.

“What’s really notable about Northwestern is that disparity research is not restricted to a single department or institution here,” said [Mercedes Carnethon, PhD](#), vice chair of [Preventive Medicine](#) and chief of [Epidemiology](#) in the Department of Preventive Medicine. “You can find people in every department at Feinberg, in every discipline — from basic scientists to population scientists — who are focused on addressing disparities and developing strategies, using different methods.”

Tackling Cancer Disparities in Our Backyard

Some scientists happen upon disparities in their data, others set out to study them. [Melissa Simon, MD, MPH, '06 GME](#), the George H. Gardner Professor of Clinical Gynecology and vice chair for clinical research in the Department of [Obstetrics and Gynecology](#), has dedicated her career at Northwestern to health equity and health equity research. In particular, her research has focused on improving cancer outcomes in Latino, African-American and Chinese communities.

In 2006, when Simon began at Feinberg, data demonstrated a disparity in breast cancer mortality of 62 percent between black patients and white patients, across the Chicagoland area.

“These data became the platform upon which an entire movement was created around breast cancer in our catchment,” said Simon, founder and director of the [Chicago Cancer Health Equity Collaborative](#), and co-program leader for cancer control and survivorship at the [Robert H. Lurie Comprehensive Cancer Center](#).

Since then, Simon has led numerous NIH-funded grants to implement [patient navigation](#) programs — tailored to a variety of healthcare settings and populations — to improve treatment and foster survivorship in breast and cervical cancers.

“Most recently, data from the black-white breast cancer mortality disparity have closed to 40 percent,” Simon said. “It’s still not acceptable — but we’re moving in the right direction.”

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Disparities

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Pinpointing Drivers of Disparity

A fundamental step towards reaching health equity is identifying such existing disparities in the first place. Over the last year, Feinberg scientists have made a number of important discoveries in this area.

This fall, Carnethon was the first author of a scientific statement, [published](#) in *Circulation*, that highlighted the unique burdens of cardiovascular disease in African-Americans. The paper — also co-authored by [Clyde Yancy, MD, MSc](#), vice dean for [Diversity and Inclusion](#) and chief of [Cardiology](#) in the Department of Medicine — noted that across nearly every metric, African-Americans have poorer overall cardiovascular health than non-Hispanic whites.

“Disparities work has not necessarily been a central focus of my research — but it happens that within cardiovascular disease and diabetes research, some of the most striking findings are these disparate patterns of disease in the population,” Carnethon said.

In January, Carnethon was also the senior author of a study [published](#) in *JAMA* that revealed black and white people have the same risk of developing diabetes when all biological risk factors, such as obesity, are considered over time. The study upended long-held beliefs that there is an unexplained or genetic reason why black adults have double the rate of diabetes compared to white adults.

“It may seem like the answer is simple — don’t gain weight — but the solution is actually really complicated, because of different accesses to resources and preventive care,” Carnethon said. “We hope our research is informative to people who can really take it to the next level and think creatively about a comprehensive and complex set of strategies to reduce this disparity.”



Mercedes Carnethon, PhD



Melissa Simon, MD, MPH



Kiarri Kershaw, PhD, MPH

Translating Discoveries to Interventions

A frequent collaborator of Carnethon is [Kiarri Kershaw, PhD, MPH](#), assistant professor of Preventive Medicine in the Division of Epidemiology. Kershaw’s research focuses on how social environments — in particular racial and ethnic residential segregation — contribute to health disparities in areas like cardiovascular health, diabetes, obesity and birth outcomes.

In 2015, Kershaw [published](#) findings in *Circulation* demonstrating that African-American people living in segregated neighborhoods are more likely to develop cardiovascular disease than those living in racially integrated areas.

This spring, she was the lead author of a new study, [published](#) in *JAMA Internal Medicine*, that found the systolic blood pressure readings of African-Americans dropped between one to five points, over 25 years, when they moved to less-segregated areas. The publications are representative of Kershaw’s research expansion from epidemiological findings to also exploring potential solutions.

“A lot of what I do is use existing datasets to understand how the social environment influences health and health disparities — but I’m also really interested in moving into translation,” Kershaw said.

Currently, she is the principal investigator of a NIH-funded grant with the aim of developing comprehensive, multi-level interventions to reduce racial/ethnic disparities in obesity. Part of that includes the [CHEER](#) (Chicago Health Eating Environments and Resources) Study, to understand how people in diverse neighborhoods use their environment to make eating decisions.

“This type of research is challenging, because the root causes of many disparities are long-entrenched issues within our society — and that’s hard to fix,” Kershaw said. “But to look at it another way, there are a lot of malleable risk factors, especially in cardiovascular disease, that we could intervene on at a more proximal level. And we’re at a point where we’re really ready to make a difference and move the needle on these disparities.”

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Crunching the Numbers: The Art of Biostatistics

Leah Welty, PhD, associate professor of Preventive Medicine in the Division of Biostatistics, director of the Biostatistics Collaboration Center



Leah Welty, PhD, associate professor of Preventive Medicine in the Division of Biostatistics, serves as director of the Biostatistics Collaboration Center ([BCC](#)).

The BCC offers Northwestern Medicine investigators expert support in biostatistics, epidemiology, programming and data management. The support ranges from one-time consultations to long-term collaborations that result in funded grants and peer-reviewed publications.

In addition, Welty is the lead biostatistician for the Northwestern Juvenile Project, a longitudinal study of psychiatric disorders and risky behaviors in nearly 2,000 youths who were arrested and detained in Cook County, IL, between 1995 and 1998.

Welty is also an associate professor of [Psychiatry and Behavioral Sciences](#) and a member of Northwestern University Clinical and Translational Sciences Institute ([NUCATS](#)).

Q&A

What are your research interests?

My background is in statistical methods used for longitudinal and spatial data, which I have applied to a broad range of areas: outcomes of delinquent youth as they age; health effects of air pollution; and algae levels in Lake Michigan. Research interests among BCC faculty are broad, ranging from clinical trial design to genomics to multi-level data, with a lot in between.

Right now, I am focused on reproducible research. With support from NUCATS, I'm leading a team that's developing [StatTag](#), a novel and unique software tool that connects statistical results with Microsoft Word. With StatTag, preparing a manuscript no longer means repeatedly copying-and-pasting results in to a Word document, or wondering where results in a manuscript came from. In short, it's about making research more efficient and more robust.

StatTag is free, open-source, user-friendly for non-technical users, sophisticated enough for technical users, and available for Windows and Mac. Our team, including Luke Rasmussen, clinical research associate, Abigail Baldrige, statistical analyst and Eric Whitley, data architect, is making improvements and enhancements every day. Even though StatTag is still in development, we already have more than 450 users.

Information about StatTag, including YouTube instructional videos and links to download the software, are available at the official [StatTag webpage](#).

What is the ultimate goal of your research?

As director of the BCC, my mission is to help investigators conduct high-quality, innovative health-related research by providing expertise in biostatistics, statistical programming and data management. We help investigators in three major ways: First, to obtain external funding by designing studies, developing statistical analysis plans, performing sample size/power calculations and writing proposals. Second, by conducting the research, including data collection, management and analysis and interpretation of findings. Finally, we disseminate findings by co-authoring manuscripts. We support all levels of investigators, including postdoctoral fellows and junior faculty in addition to well-established investigators.

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

We collaborate with all types of investigators — in basic science, clinical, epidemiological and health services research. Last year, we collaborated with 164 different principal investigators from more than 25 departments and centers within Northwestern. We also have strong collaborations with [Shirley Ryan Ability Lab](#) and [Ann & Robert H. Lurie Children's Hospital of Chicago](#).

My experience as director of the BCC has allowed me to learn about the diversity of landmark research being conducted at Feinberg and its partners. I've worked with investigators from the Department of Physical Medicine & Rehabilitation, Department of Infectious Diseases and the Department of Dermatology, just to name a few.

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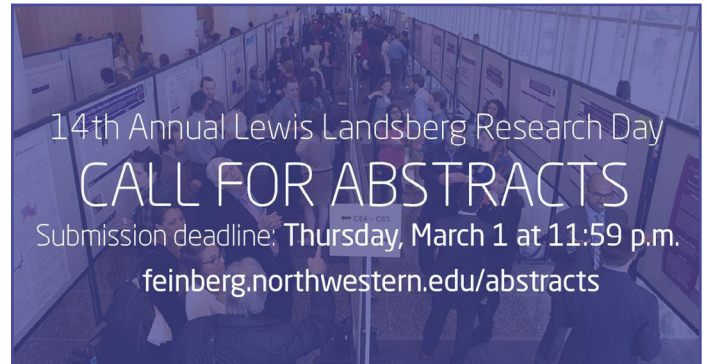
Call for Abstracts, Lewis Landsberg Research Day

You may now submit an abstract for the 14th Annual Lewis Landsberg Research Day poster session, which will take place Thursday, April 5. The deadline for submitting an abstract is Thursday, March 1, at 11:59 p.m. You will not be able to enter information on the website after that date. Submissions are limited to one per presenter. Space is limited and will be assigned on a first-come, first-serve basis. Please use this link to submit: feinberg.northwestern.edu/abstracts

The Research Day poster session and competition is open to scientists in the following categories:

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

This is an opportunity to share research with colleagues, find potential new collaborators and explore the exciting research taking place at Feinberg. Awards will be presented in the areas of clinical research, education research, basic science, public health and social sciences, and women's health. Award prizes are at right:



- \$500: First Prize Basic Science, Clinical Research, Education Research, and Public Health and Social Sciences
- \$500: The Women Faculty Organization award for excellence in Women's Health Research, Basic Science
- \$500: The Women Faculty Organization award for excellence in Women's Health Research, Clinical Research, Education or Public Health
- \$300: Second Prize Basic Science, Clinical Research, Education Research, and Public Health and Social Sciences
- \$100: Third Prize Basic Science, Clinical Research, Education Research, and Public Health and Social Sciences

You can learn more about Research Day and see a list of past winners online: feinberg.northwestern.edu/research/about/research_day

New Awards to Accelerate Prostate Cancer Studies

Scientists from the [Robert H. Lurie Comprehensive Cancer of Northwestern University](#) are among the recipients of a special set of awards from the [Prostate Cancer Foundation](#) (PCF), in honor of its 25th year celebration as the global leader in driving cutting-edge research leading to treatments and cures for prostate cancer.



Prostate Cancer Foundation
Curing Together.

The PCF announced eight new \$1 million [Challenge Awards](#) to teams of scientists conducting highly innovative

research with the highest potential for accelerating new and improved treatments for advanced prostate cancer. These new award-winning teams will join the 14 previously announced 2017 Challenge Award recipients in the PCF research portfolio. Lurie Cancer scientists are leading two of these new teams.

[Maha Hussain, MD FACP, FASCO](#), the Genevieve E. Teuton Professor of [Medicine](#) in the Division of [Hematology/Oncology](#)

and deputy director of the Lurie Cancer Center, will lead a team which also includes [Edward Schaeffer, MD, PhD](#), chair of [Urology](#), [Joshua Meeks, MD, PhD](#), assistant professor of Urology and of [Obstetrics and Gynecology](#), as well as scientists from the Jesse Brown VA Medical Center and the University of Michigan. Their project, "Clinical, Environmental, Genetic and Genomic Profile of Men with Early-Onset Lethal Prostate Cancer," involves identifying clinical and molecular predictors of early-onset, imminently lethal prostate cancer.

[Jindan Yu, MD, PhD](#), associate professor of Medicine in the Division of [Hematology Oncology](#) and of the Division of [Biochemistry and Molecular Genetics](#), also leads a team, which includes Hussain and individuals from the Fred Hutchinson Cancer Research Center, the University of Washington and the University of California, Los Angeles. Their project, "Targeting Chemokine Signaling and MAPK/ERK Pathway in Advanced Prostate Cancer," will investigate the role of the CXCR7/MAPK/ERK pathway in castrate resistant prostate cancer and the therapeutic efficacy of targeting this pathway. [Read more.](#)

Investigating Gastrointestinal Physiology and Psychology

Meredith Craven, MPH, Clinical Psychology PhD Program



Meredith Craven, MPH, a third-year student in the in Clinical Psychology PhD Program, studies psychological burden and its impact on inflammatory bowel disease in the laboratory of [Laurie Keefer Levine, PhD](#), adjunct associate professor of [Medicine](#) in the division of [Gastroenterology and Hepatology](#) and of [Psychiatry and Behavioral Sciences](#).

underserved and diverse populations in culturally competent ways.

What exciting projects are you working on?

What excites me most about my current projects at Northwestern are those that are translatable to improving health practices and outcomes. A good example of this would be my doctoral dissertation. My dissertation stems from my time at Rollins earning my MPH. At Rollins, I was a research assistant for Project UPLIFT, a mindfulness-based cognitive therapy intervention that successfully prevented and decreased depression, anxiety and the physical symptoms of cystic fibrosis and epilepsy. I am interested in assessing the feasibility and acceptability of the UPLIFT program among adults with Crohn's disease and mild-to-moderate depression. If successful, this intervention has the potential to be widely disseminated to a group with limited psychological treatment options. I truly hope that one day this work leads to the prevention of healthcare disparities through increased access to care.

What attracted you to the PhD program?

Northwestern's clinical psychology program was in sync with my clinical and research passions. I was first attracted to the PhD program because of the work of the research mentors. My mentor, Dr. Laurie Keefer, is an internationally recognized clinical GI psychologist. Working with and learning from her has given me the unique opportunity to train in the Division of [Gastroenterology and Hepatology](#). In addition, the program aligned with my goal of working in an academic medical center. The culture at Northwestern encourages multidisciplinary collaboration and values complementary care. I felt that this emphasis would mold me into a thoughtful and effective clinician (not to mention a competitive job candidate!). Finally, it didn't hurt that as a Williams College alum I already had the pleasure of being a student under [President Morton Shapiro](#), and I had plenty of purple in my wardrobe.

What are your plans for after graduation?

I aspire to be an academic GI health psychologist focused on the development and implementation of accessible, targeted interventions for patients with digestive diseases. I hope to continue to explore my passion for research while still providing clinical care that enhances health equality, increases well-being and uses culturally competent methods to help underserved and minority populations.

Connect with Meredith on [LinkedIn](#).

Q&A

Where is your hometown?

Atlanta, and proud of it! I loved growing up in a diverse city where I saw successful people of all races, genders, ages etc. Atlanta is also known for its rich cultural history, including a thriving music and entertainment industry, so it's always fun to have a celebrity sighting. After college and my first job, I returned to Atlanta to attend Rollins School of Public Health at Emory University. Reconnecting with the parks, museums, festivals and of course all the delicious food was amazing. Being a public health student also gave me a fresh perspective of Atlanta. I worked with community organizations and at the Centers for Disease Control and Prevention, which is a hallmark of the Atlanta community. Through these experiences, I learned how Atlanta's political and cultural history shaped some of the current health problems and solutions. In sum, I love Atlanta, so much so that I'm getting married there next spring to my handsome fiancé.

What are your research interests?

My primary interests are health psychology and public health. As a clinical psychology graduate student and T32 trainee in gastrointestinal (GI) physiology and psychology, I have explored these interests through a gastrointestinal illness lens. For example, I am currently working on a project to address the psychological burden and its impact on inflammatory bowel disease, specifically Crohn's disease. I also have a few papers in press, one through a community-based research project and a systematic review on the methodological flaws of researching race and ethnicity in gastroesophageal reflux disease. Overall, I am committed to using my GI research as a tool to decrease disparities, improve health outcomes and engage with

Enhancing Team Science through Data Services

Matt Carson, PhD, Digital Systems Department, Galter Library



Matt Carson, PhD, senior research data scientist and head of the Digital Systems Department in the Galter Health Sciences Library & Learning Center, leads a team of data scientists who are developing tools, standards and practices for sharing data.

Q&A

Where are you originally from?

I was born and raised in Oklahoma.

What is your educational background?

I have a bachelor's of science in microbiology from the University of Oklahoma (OU) and a PhD in bioinformatics from the University of Illinois at Chicago.

Tell us about your professional background.

During my undergraduate years, I worked as a DNA sequencing technician in a biochemistry lab at OU. Bioinformatics was an emerging field and was beginning to gain traction in the science community. I was interested in getting involved, but there wasn't much formal training offered at that time. I became acquainted with two former systems administrators who were working as bioinformaticians in our lab, and I started working with them a couple of times per week to get familiar with the field and found myself drawn to it. After graduation, I went to the OU Health Sciences Center to work as a bioinformatics technician in a microbial genomics lab. I eventually became the bioinformatics core administrator, and in this role I worked on multiple research and genome annotation projects, wrote code for data analysis, co-authored papers, maintained computational infrastructure, supervised other bioinformatics personnel and offered data analysis consultation to faculty, staff and students. After more than five years there, I decided to come to Chicago to pursue a graduate degree in bioinformatics and here I am now, after completing my doctorate in 2013.

What attracted you to Northwestern?

Toward the end my graduate training I became interested in clinical and biomedical informatics. During one of my projects, I was introduced to some of the forward-thinking people involved in projects such as the [Enterprise Data Warehouse](#) (EDW) here at Northwestern. Simon Lin, who was formerly at Northwestern, and is now at the Nationwide Children's Hospital in Columbus, Ohio, and Warren Kibbe, who is now at the Duke Cancer Institute, were on my PhD committee. Warren offered me a postdoc

position here at Northwestern and because of my interest in network science he introduced me to [Nick Soulakis, PhD](#), who was studying teamwork among healthcare providers and [Justin Starren, MD, PhD](#), chief of the [Biomedical Informatics Division of the Department of Preventive Medicine](#). Working with Nick and Justin allowed me to meet people like [Kristi Holmes, PhD](#), Director of the [Galter Library](#), where I have been since May 2017.

How do you help scientists and /or graduate students at the medical school?

The Galter Library offers many valuable services to scientists throughout Feinberg. One of our goals here at Galter is to design sustainable data services throughout all stages of the research data lifecycle. We are in the process of rolling out a new core called the DataLab, which as part of its mission provides assistance for faculty, staff and students with data-related questions or issues. This service, the DataClinic, follows a primary care model and focuses on consultations, troubleshooting and best practices in data analysis and management. For more extensive or long-term support we direct users to the many core facilities, centers and services throughout Feinberg and Northwestern such as the [Biostatistics Collaboration Center \(BCC\)](#), [NuSeq](#), [NUIT Research Computing](#) and others. We also promote reproducibility and open science best practices through training sessions and workshops.

What is your favorite part of the job?

I enjoy finding new and creative ways to help scientists solve problems. I've had a lot of experience working collaboratively in different research environments with people from various backgrounds. When working in a multi-disciplinary environment you really need to understand one another's vocabulary and way of thinking in order to communicate and get things done. This means there's always something new to learn and it keeps me on my toes.

What exciting projects are you working on?

It's been exciting working to get the DataLab up and running. Also, with the recent funding of the new [CTSA Program National Center for Data to Health Coordinating Center](#), we will be developing tools, standards and practices for sharing data and software across CTSA institutions. We are hiring new faculty and staff for Galter's Digital Systems department to work with us on this, so I'm looking forward to hiring a team and getting to work.

What do you like to do in your spare time?

I have a four-year-old and an almost two-year-old, so I spend most of my free time with them. I am a self-professed book hoarder and really enjoy reading when I get a chance, but my main hobby for the last 25 years has been music. I still try to play guitar, write and record music whenever I can sneak it in.

Connect with Matt on [LinkedIn](#) or visit his Galter Library [profile](#).

Research in the News

CNN, January 1

[Should you take statins? Guidelines offer different answers](#)

Donald Lloyd-Jones was quoted.

NBC News, January 2

[Smartphones can safeguard your health in some surprising ways](#)

David Mohr's study was mentioned.

The New York Times, January 2

[Obesity Is the Main Contributor to Diabetes in Blacks and Whites](#)

Mercedes Carnethon was quoted.

CNN, January 6

[Medical marijuana supporters worry in light of Sessions' guidance](#)

Hans Breiter was quoted.

Reuters, January 9

[U.S. doctors not certain all kids need scoliosis screening](#)

John Sarwark was quoted.

The New York Times, January 10

[Facial Exercises May Make You Look 3 Years Younger](#)

Murad Alam was quoted.

► This research was also featured in *TIME*, *Reuters*, *Chicago Tonight* – *WTTW* and other outlets

Reuters, January 15

[Greater screen time linked to worsening sleep quality in early childhood](#)

Kristen Knutson was quoted.

Chicago Tonight – WTTW, January 15

[Study: Brain MRI Predicts How Well Deaf Children Learn Language](#)

Nancy Young was quoted.

US News and World Report, January 18

[Why Many Women Unnecessarily Get a Hysterectomy](#)

Robert Vogelzang was quoted.

[More media coverage available online.](#)

Northwestern University

NUCATS

Clinical and Translational Sciences Institute

NUCATS Corner

Start Your Projects with the Center for Clinical Research

The Center for Clinical Research (CCR), part of the Northwestern University Clinical and Translational Sciences Institute, is here to support your investigations every step of the way. Acting as an extension of your study team, the CCR works closely with clinical and translational scientists, trainees and staff to provide resources, services and guidance specific to the needs of each investigator and study.

CCR's experienced staff, commitment to improvement and novel use of digital tools, has led to quicker study start-up, increased investigator and study coordinator satisfaction and improved financial outcomes.

The CCR offers a myriad of services, including: clinical research unit space and services, regulatory support, recruitment and retention support, study coordination support, and budget and finance support.

CCR also offers assistance in navigating the resources and services available at Northwestern for clinical investigators and for proper and timely participation in ClinicalTrials.gov. To learn more about the CCR's services or to request a studio consultation, visit nucats.northwestern.edu.

New Animal Operations System

A new Northwestern Animal Operations System (AOPS) was implemented by the [Center for Comparative Medicine](#) (CCM) in early February. AOPS optimizes use of vivarium resources, provides instant access to animal lab business data and simplifies compliance reporting.

Its secure, personal workspaces enable users to initiate and manage activity for each protocol. Management dashboards provide tabular views of animal transactions, cage card activities, service requests, inventory and invoices. In March, some additional functions will be implemented cage side, by use of a tablet, scanner and bar code printer, on the change station in each rodent room. [Contact the CCM](#) for more information.

Sponsored Research



PI: Anna Lam, MD, assistant professor of Medicine in the Division of Pulmonary and Critical Care Medicine

Sponsor: National Heart, Lung, and Blood Institute

Title: “Wnt-beta-catenin cross interactions in alveolar macrophages and epithelial cells in persistence of SSc-ILD”

Systemic sclerosis (SSc) is a progressive fibrotic disease for which there is no effective treatment. Presently, the major cause of morbidity and mortality for patients with SSc is respiratory failure due to pulmonary fibrosis.

Despite how commonly interstitial lung disease (ILD) occurs in SSc, it remains poorly understood and represents a major unmet medical need. The Wnt/beta-catenin signaling pathway is known to be crucial for cell fate decisions throughout development and adult tissue repair after injury.

The studies from this proposal will be the first to establish the link between the Wnt/beta-catenin pathway and monocyte-macrophage differentiation in the resolution of pulmonary fibrosis after injury. This proposal aims to deepen the understanding of Wnt/beta-catenin interactions in alveolar macrophage-epithelial cell biology and demonstrate that, in both human and mouse, the Wnt/beta-catenin pathway is critical in regulating lung monocyte-macrophage differentiation. These findings will further current understanding regarding how host immune responses contribute to the persistent fibrotic reaction and represents a potential new area for prognosis and therapeutic intervention for SSc-ILD.



PI: Elizabeth McNally, MD, PhD, the Elizabeth J. Ward Professor of Genetic Medicine

Sponsor: National Institute of Neurological Disorders and Stroke

Title: “Myoferlin in muscle membrane fusion and repair”

Muscle injury is often accompanied by disruption of the muscle plasma membrane and disruption of the muscle plasma membrane leads to muscle injury. The elongated nature of skeletal myofibers, while optimized for muscle contraction, places stress and strain on the sarcolemma through direct and lateral force transmission. Mutations in genes encoding dystrophin and its associated proteins are associated with a fragile plasma membrane that is more susceptible to rupture. Loss-of-function mutations in the dysferlin gene cause muscular dystrophy through abnormal muscle membrane trafficking, which includes defective sarcolemmal repair. An improved understanding of the membrane repair machinery of muscle will not only provide useful information for developing novel approaches to treat dysferlinopathies, but also will provide insight for muscle repair in many forms of muscle injury.

Muscle injury occurs after intense exercise, due to trauma and surgery, and muscle heals by way of repair and regeneration. McNally's team has developed a new system in which they can now visualize the repair complex as it reseals disrupted muscle membranes. Using this method, they will define how the repair subcomplexes assemble and define how these complexes function during muscle injury and in muscle diseases like muscular dystrophy. The findings from this work are not only relevant during muscle recovery but also for the treatment of chronic muscle diseases like the muscular dystrophies.



Welcome New Faculty

Youyang Zhao, PhD, joins as a professor of Pediatrics in the Division of Critical Care, of Medicine in the Division of Pulmonary and Critical Care and; of Pharmacology. He is the William G. Swartchild, Jr. Distinguished Research Professor and director of the Program for Lung and Vascular Biology at the Stanley Manne Children's Research Institute. Zhao and his team study the molecular mechanisms of acute lung injury and pulmonary hypertension with a focus on endothelial cell biology. His goal is to develop novel therapeutics for these diseases. Previously, he was professor in the department of Pharmacology at the University of Illinois College of Medicine. Zhao earned his undergraduate degree from FuDan University in Shanghai, China, and his PhD in molecular biology from the Shanghai Institute of Biochemistry, Chinese Academy of Sciences. He has published more than 55 journal articles and is currently principle investigator on four R01/P01 grants funded by the NIH.

Leah Welty

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My largest and most long-standing collaboration is on the Northwestern Juvenile Project, part of the program in [Health Disparities and Public Policy](#) in the Department of Psychiatry and Behavioral Sciences. The primary investigator on the project is [Linda Teplin, PhD](#), vice chair for research in the Department of Psychiatry and Behavioral Sciences, Owen L. Coon Professor of Psychiatry and Behavioral Sciences, professor of Psychiatry and Behavioral Sciences and of Medicine in the Division of [Infectious Diseases](#).

I started working on the Northwestern Juvenile Project my second week here, in 1995.

How is your research funded?

More than half of our effort is funded by the NIH and other external agencies. We also have a generous subsidy from the [Feinberg Research Office](#) that provides every investigator with a one to two hour initial consultation and support for grant writing. We develop data analysis plans, write data analysis sections and conduct power and sample size calculations with the goal of cultivating a collaborative environment that will lead to successful, externally funded research programs.

For projects that require biostatistics expertise, but are limited in scope, the BCC supports a recharge or fee-for-service model. Departments or investigators that require on-going biostatistics support may also “subscribe” to a portion of BCC faculty or staff time.

Who makes up the BCC and what role do the individuals play in your research?

We have seven faculty members and five master’s level statisticians, encompassing a wide range of expertise including: survival, multilevel and longitudinal data; clinical trial design and analysis; non-parametric methodology; genomics and statistical genetics; missing data; and risk prediction.

Our faculty are primary investigators of their own grants, leaders in professional organizations and nationally recognized biostatisticians. Our master’s level members, better known as Biostatisticians and Statistical Analysts, are knowledgeable in many statistical techniques and numerous software programs, including SAS, R, STATA, SPSS, REDCap and Python.

Tameka Brannon, business administrator at the BCC, does a great job managing administrative operations, including accounting, marketing, grants administration, usage and evaluation.

Funding

Distinguished Scientist Award

[More information](#)

Sponsors: The Sontag Foundation

Submission deadline: March 14

Upper amount: \$600,000, over four years

Synopsis: The Distinguished Scientist Award (DSA) seeks to provide career and research support to early career scientists who demonstrate outstanding promise for making scientific and medical breakthroughs in the field of brain cancer research. Recipients of the award are inspired individuals with projects that show potential to generate new knowledge relating to causes, cure or treatment of primary brain tumors/brain cancer.

2018 Memory and Cognitive Disorders Award

[More information](#)

Sponsors: The McKnight Endowment Fund for Neuroscience

Submission deadline: March 27

Upper amount: \$100,000 per year for three years

Synopsis: The McKnight Memory and Cognitive Disorders Award assists scientists working to apply the knowledge achieved through basic research to human brain disorders that affect memory or cognition.

Global Health Award



[Robert Murphy, MD](#), the John Philip Phair Professor of Infectious Diseases and director of the [Center for Global Health](#) is a member of [NEST360°](#), an international team of engineers, doctors and global health experts that won \$15 million through the MacArthur Foundation’s inaugural [100&Change](#) competition. The group raises money for its visionary effort to end preventable newborn deaths in Africa. Kara Palamountain, research associate professor at the Kellogg School of Management at Northwestern University and Lecturer of Global Health, is also a member of the team.

Galter Health Sciences Library & Learning Center 2017 Research Roundup: A Look at Alternative Metrics

The number of citations a paper receives is often used as an indicator of the impact a paper has, and citation counts are used to calculate the h-index, a metric that attempts to measure the productivity and citation impact of an individual researcher. However, it can take two to three years for a paper to accrue citations. Now, the use of alternative metrics is on the rise. Also known as altmetrics, alternative metrics track your research on the web in real-time, through mass media coverage, citations in policy documents, Twitter mentions, reviews on F1000 and many other outlets.

Since most 2017 papers do not have citations yet, it is difficult to find buzzed-about papers authored by Feinberg faculty using traditional metrics. But alternative metrics allow us to see how our peers, the public and other stakeholders are interacting with our work in different ways.

In 2017, more than 2,700 documents authored by Feinberg faculty were tracked by Altmetric.com, a source for alternative metrics. Let's take a look at some alternative metrics for research papers published in 2017.

Top Papers

Altmetric.com uses an algorithm to assign research outputs an Altmetric score. Below are the top five papers authored by Feinberg faculty. The colorful donut represents different types of interactions, e.g. red = news mentions, yellow = blog posts, etc.



[2277](#) **[A bioprosthetic ovary created using 3D printed microporous scaffolds restores ovarian function in sterilized mice](#)**

Northwestern authors: Laronda MM, Rutz AL, Xiao S, Whelan KA, Duncan FE, Roth EW, Woodruff TK, Shah RN



[1098](#) **[A neural link between generosity and happiness](#)**

Northwestern authors: Kahnt T



[1013](#) **[A microfluidic culture model of the human reproductive tract and 28-day menstrual cycle](#)**

Northwestern authors: Xiao S, Rogers HB, Zhu J, Olalekan SA, McKinnon KE, Dokic D, Rashedi AS, Malpani SS, Arnold-Murray CA, Chen K, Jiang M, Bai L, Nguyen CT, Zhang J, Laronda MM, Hope TJ, Maniar KP, Pavone ME, Avram MJ, Sefton EC, Getsios S, Kim JJ, Woodruff TK



[1005](#) **[Association of testosterone levels with anemia in older men: A controlled clinical trial](#)**

Northwestern authors: Cella D, Molitch ME

News Mentions

[Impact of a false-positive screening mammogram on subsequent screening behavior and stage at breast cancer diagnosis](#)

Northwestern authors: Friedewald SM

This paper was featured in 83 news stories from outlets including *The New York Times*, *The Chicago Tribune*, *U.S. News & World Report* and *MedlinePlus*, resulting in the widespread dissemination of these important findings to the target patient population.

[Association of changes in neighborhood-level racial residential segregation with changes in blood pressure among black adults: The CARDIA study](#)

Northwestern authors: Kershaw KN, Carnethon MR

This paper generated buzz in more than 60 news outlets such as *USA Today*, *The Washington Post* and *NPR*, and was also featured on *PBS News Hour*, effectively spreading the word on how racial segregation directly impacts the health of African-Americans living in the most-segregated versus less-segregated neighborhoods.

Social Media Mentions

[Evidence-based medicine in the era of social media: Scholarly engagement through participation and online interaction](#)

Northwestern authors: Trueger, NS

This paper has been tweeted 815 times, reaching over 1.3 million followers. It has been tweeted in more than 30 countries by national and international organizations, academic institutions, members of the public and by the medical community.

[The effect of gender on resident autonomy in the operating room](#)

Northwestern authors: Meyerson SL, Sternbach JM

This paper has been tweeted 308 times, reaching over 830,000 followers. It has been tweeted in at least 20 countries by followers including The Association of Women Surgeons, the Royal Australasian College of Surgeons, and by more than 140 healthcare professionals.

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The Metrics and Impact Core housed in Galter Health Sciences Library & Learning Center can help you track your work and alternative metrics. Learn more about using these metrics to tell your science story by contacting: **Patty Smith, Impact & Dissemination Librarian**, patricia.smith@northwestern.edu, 312-503-3679.

High Impact Factor Research

Banks MP, Kershaw K, Carson AP, Gordon-Larsen P, Schreiner PJ, Carnethon MR. [Association of Modifiable Risk Factors in Young Adulthood With Racial Disparity in Incident Type 2 Diabetes During Middle Adulthood.](#) *JAMA.* 2017 Dec;318(24):2457-2465.

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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."

Calendar

Thursday, February 15

IPHAM Seminar Series: "Smoking cessation in sub-Saharan Africa: Progress and Challenges"

Maxwell Akanbi, MBBS, PhD Candidate, Health Sciences Integrated PhD Program at Feinberg and Fellow of the National Postgraduate Medical College of Nigeria, will present.

Time: Noon to 1:00 p.m.

Location: Robert H Lurie Medical Research Center
Baldwin Auditorium
303 E. Superior

Contact: a-mizrachi@northwestern.edu

[More information](#)

Tuesday, February 27

MOM Program Seminar: An Update on the Clock-NAD Cycle in Metabolism and Aging

Joseph Bass, MD, PhD, Director, Center for Diabetes and Metabolism, at Feinberg will present.

Time: 4 p.m. to 5 p.m.

Location: Robert H Lurie Medical Research Center
Gray Seminar Room
303 E. Superior

[Register here](#) [More information](#)

Friday, March 2

TEAM/Epithelial Cell Biology Club Seminar: Regulation of Inflammation Using MARCO-Targeting Biodegradable PLG Nanoparticles

Stephen Miller, PhD, Director, Interdepartmental Immunobiology Center at Feinberg, will present.

Time: Noon to 1 p.m.

Location: Ward Building, Room 3-015,
303 E. Chicago Ave.

[Register here](#) [More information](#)

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NIH News

Policy Change to Include Research Participants of All Ages

A new NIH policy now requires people of all ages, including children under 18 years and older adults, be included in clinical research studies unless there are scientific or ethical reasons not to include them. For application due dates on or after January 25, 2019, if you propose a study involving human subjects, you must have a plan describing how participants across the lifespan will be included and justify the proposed age range of participants. The goal of this policy change is to ensure that the knowledge gained from NIH-funded research is applicable to all those affected by the conditions under study. [Read more.](#)

Due Dates on Holidays, Weekends, Closures

When a due date falls on a weekend, federal holiday or when Washington, D.C.-area federal offices close (due to severe weather, for example), the application deadline is automatically extended to the next business day. See [NIH Guide Notice NOT-OD-17-041](#) for additional details. If you suspect Federal offices in D.C. are closed due to severe weather you can check OPM.gov to verify. Only when federal offices in the Washington, D.C. area are listed as "Operating Status: CLOSED" is the application deadline automatically extended to the next day.

If your local winter weather is severe and results in the closure of your institution, then NIH submission policies regarding weather/other disasters apply.

New Policy on Clinical Trials

On January 18, the NIH Policy on the Dissemination of NIH-Funded Clinical Trial Information went into effect. This policy was issued to promote broad and responsible dissemination of information from NIH-funded clinical trials through ClinicalTrials.gov. The policy establishes the expectation that all investigators conducting clinical trials funded in whole or in part by the NIH will ensure that these trials are registered at ClinicalTrials.gov and that results information of these trials is submitted to ClinicalTrials.gov. The policy is complementary to the statutory and regulatory reporting requirements. Read the policy [here](#).