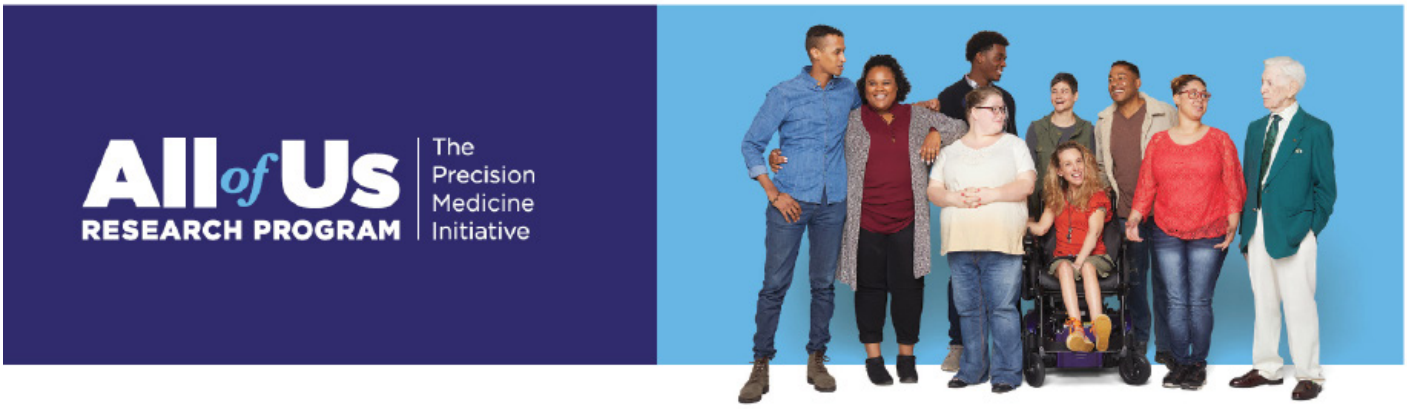
Breakthroughs

Feinberg School of Medicine Research Office June 2017



Precision Medicine for "All of Us"

During the 2015 State of the Union Address, then-President Barack Obama announced the launch of a bold new plan.

"I want the country that eliminated polio and mapped the human genome to lead a new era of medicine — one that delivers the right treatment at the right time," Obama said. "Tonight, I'm launching a new Precision Medicine Initiative to bring us closer to curing diseases like cancer and diabetes, and to give all of us access to the personalized information we need to keep ourselves and our families healthier."

Northwestern is now embarking on a groundbreaking research effort to help make that goal a reality.

Last year, the National Institutes of Health awarded the university — along with four other regional institutions that make up the Illinois Precision Medicine Consortium — a five-year, $51 million grant to help launch a landmark longitudinal research effort central to Obama's Precision Medicine Initiative.

Philip Greenland, MD, the Harry W. Dingman Professor of Cardiology and director of the Center for Population Health Sciences, is the principal investigator of the Illinois Precision Medicine Consortium, one of a number of consortiums across the country.

Northwestern Medicine®

"The scale of this is really new," said Greenland, also a professor of Epidemiology in the Department of Preventive Medicine. "This model of data collection — at a scale bigger than anything we've done before — seems as though it could actually improve the way that we go about diagnosing, treating and predicting the onset and outcome of disease."

The Illinois consortium, which aims to enroll around 125,000 participants in the cohort, plans to begin recruitment at a pilot level in mid-August 2017.

The field of precision medicine — an emerging approach to disease prevention and treatment that takes into account a person's individual genes, lifestyle and environment — has already seen a number of promising advances. For example, some novel cancer therapies now target specific gene mutations. But it's recognized that significant progress must still be made before medicine can truly be tailored to every individual patient.

The national program, dubbed the *All of Us* Research Program, aims to recruit one million or more people living in the United States of all ages, ethnicities and backgrounds to share their genetic information, electronic health data and biological samples over a long period of time. Participants in the study will also be invited to fill out questionnaires and contribute data via smartphones, sensors or mobile health apps that will offer insights into environmental factors and lifestyle exposures.

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Precision Medicine

(continued from cover page)

"The ultimate goal is to speed up medical breakthroughs, so healthcare in the future can become more tailored to individual differences in lifestyle, environment and biological makeup," said Maria Lopez-Class, PhD, MPH, MS, a project officer for the *All of Us* Research Program at the NIH.

"We're looking to the Illinois Precision Medicine Consortium and our other partners to help design the program and spread the word to potential participants, including people who may never have taken part in research before," Lopez-Class said. "We want the *All of Us* community to reflect the tremendous diversity of our country, so that the knowledge we gain from this resource benefits everyone."

HEALTH DATA FOR ALL

Beyond helping to design the study and recruiting a significant number of participants, Northwestern is also a sub-awardee of the program's Data and Research Center, which will support the secure storage and organization of the datasets across the country. Abel Kho, MD, director of the Center for Health Information Partnerships, is leading those efforts at Northwestern.

"We've been working very diligently on the infrastructure, including a major focus on building a bulletproof secure environment so that people have 100 percent confidence that their data is being managed securely," explained Kho, also an associate professor of Medicine in the Division of General Internal Medicine and Geriatrics and of Preventive Medicine in the Division of Health and Biomedical Informatics. "We're running right up against some of the pressing challenges of informatics, and finding that we have to build new things. It's exciting. This has never really been done on a scale like this across such a broad population."

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Philip Greenland, MD

The *All of Us* Research Program is distinctive in its strong focus on building a diverse database. "People are being recruited from all walks of life — there are people who will be in the study who have never been seen at an academic medical center. From a research standpoint, that's really exciting," Kho said. "Because of the large number of people, and because it's looking at a population that's somewhat representative of the country, we have the opportunity to answer more complex questions than we have in the past. There's the potential to look at the interaction between genes and people's environments, and answer questions like, 'What's more important: nature or nurture?'"

In the long term, one of the key research objectives of the *All of Us* program is that the resulting database of anonymized data will be open-access, serving as a rich resource not only for investigators and scientists across the country, but for anyone looking to gain insights into a particular disease or health question.

The hope is that together, these unique factors that characterize *All of Us* — its size, open-access format and broad scope — will eventually lead to important advances in the ability to practice precision medicine.

"Right now, we can give people general advice, like avoid smoking, eat this diet and exercise more, which is all good. But we want to be able to give more specific advice — and that's what this study is really getting at. If I'm going to tell a patient to take a drug, or have major preventive surgery, we really want to know what their specific risks and benefits are," Greenland said. "Hopefully, given the size of the study — combined with improvements in the analysis of large data and our ability to collect health information — we'll now be able to understand that data in ways we never could before. We might find something that could really make a difference in improving human health."

Feinberg will begin enrolling participants for the *All of Us* Research Program in August 2017. All faculty, staff, students and their friends and family have the opportunity to become a part of this historic effort. For more information visit allofus.nih.gov. If interested in joining the *All of Us* Research Program, please e-mail joinallofus@northwestern.edu.

All of Us RESEARCH PROGRAM | The Precision Medicine Initiative

Discovering the Role of Mitochondria and Metabolism in Cardiovascular Disease

Hossein Ardehali, MD, PhD, professor of Medicine in the Division of Cardiology

Hossein Ardehali, MD, PhD, professor of Medicine in the Division of Cardiology and of Pharmacology, leads a lab committed to investigating the role of mitochondria and cellular metabolism in cardiovascular disease. As director of the Center for Molecular Cardiology at the Feinberg Cardiovascular Research Institute (FCVRI), he also supports overall research efforts in molecular cardiology throughout the medical school.

Ardhali earned his MD/PhD from Vanderbilt University School of Medicine and completed a residency and fellowship at Johns Hopkins Hospital, before joining Northwestern in 2005. He is a member of the Robert H. Lurie Comprehensive Cancer Center of Northwestern University.

Q&A

What are your research interests?

The major focus of our research is on cellular and mitochondrial iron homeostasis and the role of mRNA-binding proteins in diabetes and cardiovascular disease. Iron is an essential molecule for cellular physiology; however, excess iron (especially in the mitochondria) can lead to cell damage, due to excess oxidative stress. Thus, iron levels are tightly regulated inside the cell. Our group has identified the mechanism of iron export out of the mitochondria and novel regulators of cellular iron.

Additionally, we have shown that mitochondrial iron accumulation is detrimental in cardiovascular disease, and that a reduction in mitochondrial iron protects against multiple forms of cardiomyopathy, including chemotoxicity and ischemic damage.

For the second project, we are focusing on the tandem zinc-finger mRNA-binding family of proteins. Our studies have demonstrated that a member of this family, tristetraprolin (TTP), regulates hepatic response to insulin. Our data demonstrate that TTP is involved in late effects of insulin (i.e., six to eight hours after insulin release) in the liver and regulates lipid uptake into the liver to prevent excessive lipid accumulation. We also have evidence that TTP regulates glucose and branched-chain amino acid metabolism.

What is the ultimate goal of your research?

As a physician-scientist, it is my ultimate goal to translate our findings into clinical practice. We are currently conducting studies to use specific iron chelators that can reduce mitochondrial iron as a treatment for heart failure and ischemic heart disease. This requires generation of novel iron chelators that can penetrate the mitochondria, which we are currently working on. We are also hoping that by targeting TTP, we can fine-tune some of the effects of insulin in the liver, which may lead to novel treatments for diabetes.

How did you become interested in this area of research?

When I was a cardiology fellow at Johns Hopkins, I was working on a mitochondrial potassium channel. One member of the protein complex I was working on belonged to a family of proteins that have been shown to regulate mitochondrial iron. I told my mentor that I believed that this protein regulates mitochondrial iron, and I asked him if I could continue to characterize this protein as an independent investigator. He agreed with the plan, and the more I worked on iron, the more questions arose and the more exciting the field became to our group.

For the project on the mRNA-binding proteins, I owe it to one of my former students in the Medical Scientist Training Program (MSTP), Marina Bayeva, MD, PhD. While looking for alternative pathways that regulate cellular iron, she discovered that TTP gets activated in response to low iron and drives iron conservation within the cell. Through our conversations with investigators who work on the yeast-homolog of these proteins, we then became interested in how these proteins mediate their effects on metabolism and mitochondrial function.

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Leaving Segregated Neighborhoods Reduces Blood Pressure for Blacks

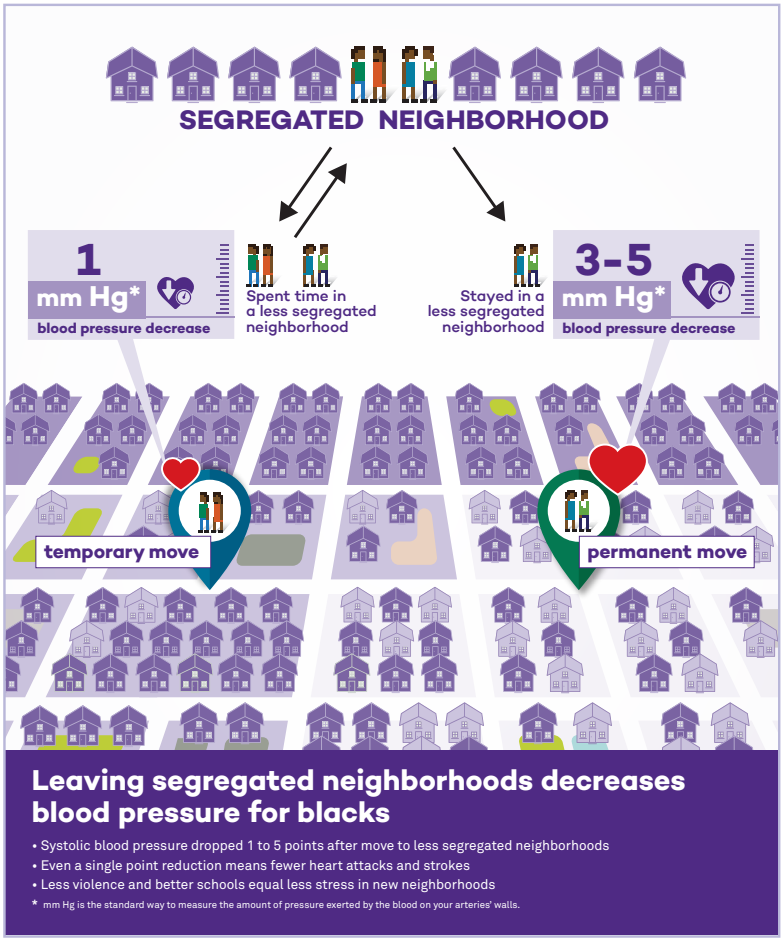
The systolic blood pressure readings of African-Americans dropped between one to five points when they moved to less segregated neighborhoods, reports a new Northwestern Medicine study.

It is the first study to look at the longitudinal effects of living in less segregated areas on blood pressure and to compare the effect within the same individuals. Previous research showed racial residential segregation is related to a prevalence of hypertension at a single point in time.

"This study provides stronger, more direct evidence that segregation impacts blood pressure and harms the health of African-Americans," said lead author Kiarri Kershaw, PhD, MPH, assistant professor of Preventive Medicine. "I believe it's related to the stress of living in these neighborhoods."

Less stress, achieved by decreasing exposure to violence and improving opportunities for socioeconomic mobility, is likely a key factor in blood pressure reductions, Kershaw said.

The study was be published May 15 in *JAMA Internal Medicine*. See infographic to the right and read more about the study.




Design: HDR | Gensler; Photo: Dave Burk

AbilityLab Open to Patients and Scientists

On March 25, the Rehabilitation Institute of Chicago (RIC) officially became known as the Shirley Ryan AbilityLab as it opened its doors to a cutting-edge research hospital of the same name.

Located at 355 E. Erie Street in Chicago, the $550 million, 1.2-million-square-foot AbilityLab is the first-ever "translational" research hospital in which clinicians, scientists, innovators and technologists work together in the same space, 24/7, surrounding patients, discovering new approaches and applying research in real time.

Investigating the Role Visual Perception plays in Autism Spectrum Disorder

Kritika Nayar, Clinical Psychology PhD Program

Kritika Nayar, a fourth-year student in the Clinical Psychology PhD Program, studies visual perception and its role in autism spectrum disorder in the laboratory of Molly Losh, PhD, associate professor of Psychiatry and Behavioral Sciences.

Nayar earned her undergraduate degree in neural science and environmental studies from New York University. She discovered her passion for working with children with autism in high school and plans to continue working in pediatric neuropsychology after she graduates from Northwestern.

Q&A

Where is your hometown?
I am of Indian origin and grew up and lived in Hong Kong for 18 years before moving to New York City for college.

What are your research interests?
I am fascinated by the complex and broad deficits that are associated with neurodevelopmental disorders, particularly autism spectrum disorder (ASD). I am interested in exploring the neuropsychological profiles associated with ASD, and in particular how visual perception may contribute to core deficits and other clinical-behavioral traits. I am also interested in investigating whether these neuropsychological features are present in more subtle forms in parents of individuals with ASD.

What exciting projects are you working on?
In Dr. Molly Losh's Neurodevelopmental Disabilities Lab, I am involved in many exciting projects. My doctoral work focuses on using a combination of eye-tracking and electrophysiological (EEG) methods to survey visual processing styles in individuals with ASD and their biological parents.

By taking this neurocognitive, multi-method and family-study approach, I hope to more holistically characterize the cognitive mechanisms that may importantly relate to the ASD phenotype. By studying parents, I hope to explore whether there are underlying neural markers of visual perception that might be candidate endophenotypes (or, heritable characteristics that map onto common underlying biology), helping to pinpoint their genetic etiologies.

What attracted you to the PhD program?
I was drawn to so many aspects of the PhD program, making it my number one choice. I was drawn to Dr. Losh's studies of ASD, which take a family-study design to explore endophenotypes, using multiple methods of assessment (e.g., eye tracking, language assessments).

Additionally, her work exploring neuropsychological profiles in ASD and associated disorders was particularly appealing. Also, the clinical psychology doctoral program allows me the opportunity to concentrate in both child and adolescent psychology as well as neuropsychology, beautifully bridging together my clinical and research interests.

What has been your best experience at Feinberg?
I have enjoyed and loved every aspect of Feinberg and my experience thus far. The people I am surrounded by have really helped to enrich my experience during graduate school. They have helped to cultivate my intellectual curiosity further, while at the same time embracing the "me" that I am today. My journey through graduate school has also allowed me to explore larger existential questions.

How would you describe the faculty at Feinberg?
Faculty members in my program are incredibly friendly, hard-working, and brilliant role-models. They treat the graduate students with respect and as peers, supporting us to be the best psychologists possible! I love that the faculty can walk the humor and professional line so elegantly. I'm fortunate to be surrounded by such supportive faculty members.

What are your plans for after graduation?
I hope to be working in a medical center, to avail myself of the numerous resources available through a setting like Northwestern. I plan to continue pursuing research in ASD while simultaneously seeing patients as part of my pediatric neuropsychology practice. I am looking forward to seeing where my work and experiences take me.

Supporting the Financial Side of Research

Alexandra Manetas, Financial Administrator, Office for Research Administration

Alexandra Manetas is a financial administrator in the office for Research Administration Services. In this role, Manetas is responsible for managing the financial process once a scientist receives a grant or award.

Q&A

Where are you originally from?
I grew up in the western suburb of Geneva, IL.

What is your educational background?
I graduated from DePaul University in 2013 with a bachelors degree in finance.

Tell us about your professional background.
I began my career at DePaul University as an accounting specialist and then transferred to a position as a business coordinator in the College of Health and Science at DePaul before being offered my current position at Northwestern as a financial administrator. I was excited to begin working for a well-known research institution and was especially excited to know I would be part of the research process.

How do you help scientists at the medical school?

I provide post-award financial administration to sponsored projects in the Neurology, Anesthesiology, and Family and Community Medicine departments. My role is to review the principle investigator's portfolios within those departments and manage the financial processes.

What is your favorite part of the job?

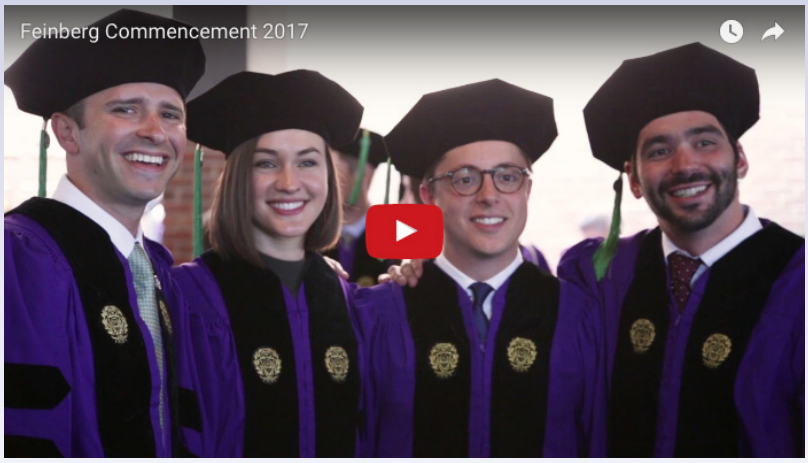
My favorite part of the job is working with such a collaborative team. It's exciting to be in a supportive environment that truly is invested in my professional development.

What do you like to do in your spare time?

I love being outdoors and enjoy the summers in Chicago. I play on indoor and beach volleyball leagues throughout the year. I am constantly on the quest to find the perfect karaoke song.

Connect with Alexandra on LinkedIn.

Feinberg Celebrates Students at Convocation



Click image to watch video highlights from Convocation 2017

Feinberg's 158th medical school convocation ceremony was held May 22 in the Aon Grand Ballroom at Navy Pier.

Twenty-three members of this year's class were inducted into the medical honor society, Alpha Omega Alpha.

Eight received Magna Cum Laude in Scientia Experimentali and 13 received Cum Laude in Scientia Experimentali. Nine graduates received summa cum laude, six received magna cum laude and six received cum laude.

Read more about this year's event.

Research in the News

NPR, May 1
Yo-yo dieting may pose serious risks for heart patients
Linda Van Horn was quoted.

HealthDay, May 1
Seizure control eases life for young adults with epilepsy
Anne Berg was quoted.

HealthDay, May 3
Healthy heart in middle age delivers big dividends
Norrina Allen was quoted.

Chicago Tribune, May 12
Syrian doctors, others from Chicago area risk own lives to save others in war zone
Samar Attar was quoted.

Chicago Tribune, May 12
After cancer and IVF, motherhood can feel like a bit of a miracle
John Lurain was quoted.

NPR, May 16
Do segregated neighborhoods raise blood pressure? NU study explores link
Kiarri Kershew was quoted.

HealthDay, May 16
Many under 40 may not need regular cholesterol checks: study
Neil Stone was quoted.

TODAY, May 16
Is the HPV vaccine safe?
Melissa Simon was quoted.

CNN, May 16
3-D printed ovary allows infertile mouse to mate and give birth
Teresa Woodruff, Ramille Shah and Monica Loranda were quoted.
► This research was also featured in *ABC News, TIME, HealthDay, CBS News, WebMD, U.S. News & World Report* and *Crain's Chicago Business*.

Reuters, May 17
Weight loss tied to lower risk of knee joint degeneration
Leena Sharma was quoted.

More media coverage available online.

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NUCATS Corner

Free New Tool for Statistical Analysis

StatTag is a free, open-source and user-friendly program that takes a novel and practical approach to conducting reproducible research by integrating document preparation in Microsoft Word with statistical analysis. StatTag allows users to embed statistical results (values, tables, figures or verbatim output) from R, SAS, or Stata directly in Word.

Once embedded, this output can be individually or collectively updated in one click with a behind-the-scenes call to the statistical program.

With StatTag, modification of a dataset or analysis no longer entails transcribing or re-copying results into a manuscript. StatTag also provides an interface to view and edit statistical code directly from Word.

Benefits of using StatTag:

- Update statistical results in a manuscript without copying and pasting from statistical output
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- Enhance the reproducibility of your research workflow

To learn more and download the software, visit stattag.org.

Contact the StatTag team for more information at StatTag@northwestern.edu.

Sponsored Research

PI: Ruchi Gupta, MD, MPH, associate professor of Pediatrics in the Division of Academic General Pediatrics and Primary Care and Medicine in the Division of Allergy and Immunology

Sponsor: National Institute of Allergy and Infectious Diseases

Title: "Food Allergy Outcomes Related to White and African American Racial Differences (FORWARD)"

Food allergy (FA) is a potentially life-threatening condition that affects an estimated 8 percent of children in the United States. Although differences between African American (AA) and white children in the prevalence and severity of other atopic conditions such as asthma and eczema have been well described, little is known about such differences in FA. The goal of this project is to prospectively study a cohort of 600 AA and white children (0-12 years) with FA.

Gupta's team hypothesizes that compared to white children, AA children will: have higher rates of food-allergic reactions and FA-related healthcare utilization; demonstrate unique FA phenotypes and endotypes; have poorer knowledge of FA management and worse adherence to preventative behaviors; have limited access to medications and allergen-free foods; and report better quality of life.

They believe that confirming and further characterizing differences between AA and white children with FA will provide the data required to develop clinical guidelines, optimize treatment and build health policies that meet the needs of both AA and white children.

Read more about this project.

PI: Emily J Rogalski, PhD, research associate professor in the Cognitive Neurology and Alzheimer's Disease Center

Sponsor: National Institute on Aging

Title: "Determinants of neurodegenerative decline in the aphasic variant of Alzheimer's disease"

The proposed study will longitudinally and quantitatively characterize the clinical, cognitive, functional, neuroanatomic and molecular features of individuals with primary progressive aphasia who have biomarker findings consistent with Alzheimer's disease (termed PPA-ADbio+ for this project).

In the first aim of the study, Rogalski's team will quantitatively characterize longitudinal changes in morphometry (using structural MRI), functional connectivity (using resting state MRI), tau accumulation (with [18F]-AV-1451 Tau- PET) and clinical profiles (using detailed neuropsychological testing) of 50 PPA-ADbio+ participants at three consecutive annual visits. The next aim of the study is to characterize the temporal relationship among the variables measured in the first aim.

This project represents one of the first prospective multidimensional studies of longitudinal course using the relatively new tau biomarker [18F]-AV-1451 in PPA-ADbio+ individuals. In addition to theoretical interest, the results from this study are relevant for defining objective biomarkers of disease type and progression, which will inform therapeutic treatment strategies for this relatively underserved dementia population.

Read more about this project.

Welcome New Faculty

Rimas Lukas, MD, joins as associate professor of Neurology. His area of expertise focuses on primary brain tumors, spinal cord tumors and central nervous system metastases. Lukas is also interested in medical education in the United States and abroad and conducts research in neuroscience medical education. Previously, he was an associate professor and director of Medical Neuro-Oncology in the Department of Neurology and the section of Hematology & Oncology at the University of Chicago. Lukas earned his MD from Rush University and completed his residency and fellowship in Neuro-Oncology at the University of Chicago. He is currently an investigator on a number of therapeutic clinical trials for brain tumors and a co-investigator on an RO1 National Institutes of Health grant looking at metabolic control in immune suppression in gliomas.

Mitochondria and Metabolism in Cardiovascular Disease

(continued from page 3)

Where have you recently published papers?
I ask my lab members to shoot for high-impact journals and to publish in journals that are targeted to the general audience (i.e., not just cardiology journals).

Our recent papers have been published in Cell Metabolism, Nature Communications, Journal of Clinical Investigation, EMBO Molecular Medicine, and Proceedings of the National Academy of Sciences.

What do you enjoy about teaching/mentoring young scientists in the lab?
I am very fortunate to have the opportunity to work with a group of extremely bright students, postdoctoral fellows and technicians in the lab. When they join the lab, I try my best to guide them and teach them how to do science.

When I am confident that they are ready to become independent, I let them do the things they enjoy doing, and this is the stage that I start learning tremendously from them. Generally, most people in my lab get to that stage about one and a half to two years after starting in the lab.

What is most gratifying to me is when they become successful and make important scientific discoveries on their own. This tells me I have prepared them for their own independent careers.

How does your research advance medical science and knowledge?
Biomedical research is the driving force in advancing our understanding of human health and disease. The impact of biomedical research is not limited to its reduction of the burden of human disease; it also plays a significant role in the U.S. economy, the training of future physicians and scientists, and the creation of new technologies and jobs.

Thus, at a time when there are discussions about reducing biomedical research funds, it's important that we talk to our elected officials and emphasize to them that biomedical research is a critical component of American healthcare and the economy.

Funding

Limited Submission: The Hartwell Foundation Individual Biomedical Research Award

More information

Sponsor: The Hartwell Foundation

Internal submission deadline: July 10

Upper Amount: $100,000 in direct costs per year for three years

Synopsis: This award provides financial support to stimulate discovery in early-stage, transformative biomedical research with the potential to benefit children of the United States. It seeks to fund innovative and cutting-edge applied research that has not yet qualified for funding from traditional outside sources. Proposals must not be an incremental extension of existing research being conducted by either the applicant or others.

Director's New Innovator Award

More information

Sponsor: National Institutes of Health

Submission deadline: September 8

Upper Amount: $1.5 million in direct costs disbursed in first year of five-year project period

Synopsis: The award is art of the High-Risk, High-Reward Research program and supports exceptionally creative early career investigators who propose innovative, high-impact projects. Recipients must have New and Early Stage Investigator status and be within 10 years of receiving doctoral degree or completion of medical residency and never awarded an R01 or equivalent NIH grant.

Breast Cancer Research Program Innovator Award

More information

Sponsor: Department of Defense, Defense Health Program

Pre-application submission deadline: 4:00 p.m. (CT), June 9

Upper amount: $5 million

Synopsis: The Breast Cancer Research Program (BCRP) challenges the scientific community to design research that will address the urgency of ending breast cancer. Specifically, the BCRP seeks to accelerate high-impact research with clinical relevance, encourage innovation and stimulate creativity and facilitate productive collaborations.

View more funding opportunities

Galter's Support Models Continue to Evolve

Galter Health Sciences Library and Learning Center has been supporting the information needs of faculty, staff and students since the mid-1800s. From our humble beginnings as a "faculty room also containing books" to our current capacity for supporting 21st century research and clinical care efforts, we continue to fulfill its mission with care and dedication.

In addition to our many online databases, e-book collections, and mobile resources, the Galter Health Sciences Library and Learning Center also offers classes and services that have developed from the needs of our users, such as:

- In response to the need for greater dissemination and archiving of scholarship, we introduced DigitalHub – a world-class repository for research outputs.
- In order to assist groups and individuals manage publications and assess their research impact, we provide the Metrics and Impact Core – a service with expertise in bibliometrics, alternative metrics and data visualization.
- To help researchers identify, appraise and synthesize biomedical literature, we offer Systematic Review Services – a service with expertise in database and grey literature searching, as well as recommended review methodologies.
- To assist faculty and students in identifying top resources, books and articles, we offer librarian-curated Subject Lists – a searchable resource available to everyone online.

In addition to classes and consultations offered on-demand, we host specialized courses focused on the needs of various users throughout the year. Upcoming workshops include:

Scientific Writing Seminar Series

Join Northwestern faculty writing experts for an opportunity to learn more about the writing process from page to publication. Registration is currently full, but there is a waitlist. Look for this popular workshop to be offered again.

More information here: https://galter.northwestern.edu/news/scientific-writing-seminar-series

Dissemination, Impact and Access Workshop

How do you make your program's work more visible? Do you know how your program's work is being used online? Program coordinators, research administrators and staff with similar job titles, are invited to join this interactive workshop on Thursday, July 20, to focus on the dissemination, impact and access of information for their program, institute or center.

More information here: https://galter.northwestern.edu/news/diaworkshop

We strive to provide exceptional resources and services to support the information needs of Northwestern Medicine. Be sure to visit us online or in person. If you need individualized support, contact your liaison librarian.

References: Galter Library. History of the Library. Available at: https://galter.northwestern.edu/about-us/history-of-the-library

High Impact Factor Research

Bibbins-Domingo K, Grossman DC, Curry SJ, Barry MJ, Davidson KW, Doubeni CA, Epling JW, Jr., Kemper AR, Krist AH, Kurth AE, Landefeld CS, Mangione CM, Phillips WR, Phipps MG, Silverstein M, **Simon MA**, Tseng CW. Screening for Preeclampsia: US Preventive Services Task Force Recommendation Statement. JAMA. 2017 Apr 25;317(16):1661-1667.

Chambers C, Akram S, Adam V, Pelofi C, Sahani M, Shamma S, Pressnitzer D. Prior context in audition informs binding and shapes simple features. Nature Communications. 2017 Apr 20;8:15027.

Gilles L, Arslan AD, Marinaccio C, Wen QJ, Arya P, McNulty M, Yang Q, Zhao JC, Konstantinoff K, Lasho T, Pardanani A, Stein B, Plo I, Sundaravel S, Wickrema A, Migliaccio A, Gurbuxani S, Vainchenker W, **Platanias LC**, Tefferi A, **Crispino JD**.Downregulation of GATA1 drives impaired hematopoiesis in primary myelofibrosis. Journal of Clinical Investigation. 2017 Apr;127(4):1316-1320.

Henderson KL, Felth LC, Molzahn CM, Shkel I, **Wang S**, Chhabra M, Ruff EF, Bieter L, Kraft JE, Record MT. Mechanism of transcription initiation and promoter escape by E. coli RNA polymerase. Proceedings of the National Academy of Sciences of the United States of America. 2017 Apr;114(15):E3032-E3040.

Jiang HD, Schuele S, Rosenow J, Zelano C, Parvizi J, Tao JX, Wu SS, **Gottfried JA**. Theta Oscillations Rapidly Convey Odor-Specific Content in Human Piriform Cortex. Neuron. 2017 Apr;94(1):207.

Justice AE, Winkler TW, Feitosa MF, et al. (including **Rasmussen-Trovik LJ**). Genome-wide meta-analysis of 241,258 adults accounting for smoking behaviour identifies novel loci for obesity traits. Nature Communications. 2017 Apr 26;8:14977.

Liang WS, Hendricks W, Kiefer J, Schmidt J, Sekar S, Carpten J, Craig DW, Adkins J, Cuyugan L, Manojlovic Z, Halperin RF, Helland A, Nasser S, Legendre C, Hurley LH, Sivaprakasam K, Johnson DB, Crandall H, Busam KJ, Zismann V, Deluca V, Lee J, Sekulic A, Ariyan CE, **Sosman J**, Trent J. Integrated genomic analyses reveal frequent TERT aberrations in acral melanoma. Genome Research. 2017 Apr;27(4):524-532.

Morris VK, Salem ME, **Nimeiri H**, Iqbal S, Singh P, Ciombor K, Polite B, Deming D, Chan E, Wade JL, Xiao LC, Bekaii-Saab T, Vence L, Blando J, Mahvash A, Foo WC, Ohaji C, Pasia M, Bland G, Ohinata A, Rogers J, Mehdizadeh A, Banks K, Lanman R, Wolff RA, Streicher H, Allison J, Sharma P, Eng C. Nivolumab for previously treated unresectable metastatic anal cancer (NCI9673): a multicentre, single-arm, phase 2 study. Lancet Oncology. 2017 Apr;18(4):446-453.

Piunti A, Hashizume R, Morgan MA, Bartom ET, Horbinski CM, Marshall SA, Rendleman EJ, Ma QH, Takahashi YH, Woodfin AR, Misharin AV, Abshiru NA, Lulla RR, Saratsis AM, Kelleher NL, James CD, Shilatifard A. Therapeutic targeting of polycomb and BET bromodomain proteins in diffuse intrinsic pontine gliomas. Nature Medicine. 2017 Apr;23(4):493.

Roy CN, Snyder PJ, Stephens-Shields AJ, Artz AS, Bhasin S, Cohen HJ, Farrar JT, Gill TM, Zeldow B, **Cella D**, Barrett-Connor E, Cauley JA, Crandall JP, Cunningham GR, Ensrud KE, Lewis CE, Matsumoto AM, **Molitch ME**, Pahor M, Swerdloff RS, Cifelli D, Hou XL, Resnick SM, Walston JD, Anton S, Basaria S, Diem SJ, Wang C, Schrier SL, Ellenberg SS. Association of Testosterone Levels With Anemia in Older Men A Controlled Clinical Trial. JAMA Internal Medicine. 2017 Apr;177(4):480-490.

Shi XF, Barchini J, Ledesma HA, Koren D, Jin YJ, **Liu XR**, Wei W, Cang JH. Retinal origin of direction selectivity in the superior colliculus. Nature Neuroscience. 2017 Apr;20(4):550.

Sita TL, Kouri FM, Hurley LA, Merkel TJ, **Chalastanis A, May JL, Ghelfi ST,** Cole LE, **Cayton TC**, Barnaby SN, Sprangers AJ, Savalia N, **James CD**, Lee A, **Mirkin CA**, **Stegh AH**. Dual bioluminescence and near-infrared fluorescence monitoring to evaluate spherical nucleic acid nanoconjugate activity in vivo. Proceedings of the National Academy of Sciences of the United States of America. 2017 Apr;114(16):4129-4134.

Ward ME, Chen R, Huang HY, Ludwig C, Telpoukhovskaia M, Taubes A, Boudin H, Minami SS, Reichert M, Albrecht P, Gelfand JM, Cruz-Herranz A, Cordano C, Alavi MV, Leslie S, Seeley WW, Miller BL, **Bigio E, Mesulam MM**, Bogyo MS, Mackenzie IR, Staropoli JF, Cotman SL, Huang EJ, Gan L, Green AJ. Individuals with progranulin haploinsufficiency exhibit features of neuronal ceroid lipofuscinosis. Science Translational Medicine. 2017 Apr;9(385):10.

Yang XY, Park SH, Chang HC, Shapiro JS, Vassilopoulos A, Sawicki KT, Chen CL, Shang M, Burridge PW, Epting CL, Wilsbacher LD, Jenkitkasemwong S, Knutson M, **Gius D, Ardehali H**. Sirtuin 2 regulates cellular iron homeostasis via deacetylation of transcription factor NRF2. Journal of Clinical Investigation. 2017 Apr;127(4):1505-1516.

Help Feinberg Track Journals

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

Friday, June 9

Big Data and Precision Genomic Therapy in Young Adult Cancer

John Perentesis, MD, FAAP, Director, Division of Oncology, Cincinnati Children's Hospital will speak.

Time: **8 a.m. to 9 a.m.**

Location: **Robert H. Lurie Medical Research Center**
Searle Conference Room, 303 E. Superior

Contact: cancer@northwestern.edu

More information

Tuesday, June 20

2017 Annual Lung Symposium

Keynote lecture "Discovery proteomics reveals new therapeutic targets for the treatment of fibrosis" will be given by Oliver Eickelberg, MD, FERS, University of Colorado, Anschutz Medical Campus.

Time: **11:30 a.m. to 4:00 p.m.**

Location: **Canning Auditorium**
3rd Floor Prentice Women's Hospital
250 E. Superior Street

Contact: kmsbarnes@northwestern.edu

More information

Wednesday, June 28

New P.I. Boot Camp

This boot camp is intended to provide new and junior investigators with the practical training they need to get their first awards up and running.

Time: **8:30 a.m. to 4:00 p.m.**

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

Contact: schueller@northwestern.edu

More information

NIH News

New Approach from NIH

In May, Francis Collins, director of National Institutes of Health, announced the NIH will launch a new approach to make sure it is exercising optimum stewardship of the funds that it receives from taxpayers. This initiative aims to take advantage of new and powerful ways to assess the effectiveness of NIH research investments to be sure that the funds we are given are producing the best results from our remarkable scientific workforce.

"We would pursue this strategy regardless of the level of budget support," Collins said. Other plans include correcting an out of balance biomedical research workforce and setting limits to the total NIH grant support provided to an individual principal investigator through NIH-supported research.

Read more.

Feinberg Student Selected By Medical Research Scholars Program

Eileen Hu-Wang, a third-year medical student at Feinberg was selected as a member of NIH 2017-2018 Medical Research Scholars Program (MRSP) class. She is one of 42 students who were chosen for this opportunity from academic institutions around the nation.

The NIH MRSP is a yearlong enrichment program that provides mentored training to creative, research-oriented medical, dental and veterinary students at the intramural campus of the NIH in Bethesda, Maryland. This residential program enables scholars to conduct basic, clinical or translational research in areas that match their personal interests and research goals. Each scholar is assigned a tutor/advisor, who provides guidance in defining a well-articulated career development plan and selecting a dedicated NIH research mentor. Mentors are full-time NIH investigators with established basic, clinical or translational research programs.

New All About Grants Podcasts

Two new "All About Grants" podcasts focus on topics related to submitting your application. In "A Look at NIH's Appendix Policy," Dr. Cathie Cooper, director of the Division of Receipt and Referral in the NIH's Center for Scientific Review, talks about what can be submitted in an application's appendix. In "NIH's Post Application Submission Policy," Dr. Sally Amero, NIH's review policy officer, provides insight into why NIH has such a policy and what grant application information can be updated after submission of an application, but before peer review.

Download the new episodes.

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