Breakthroughs

Feinberg School of Medicine Research Office

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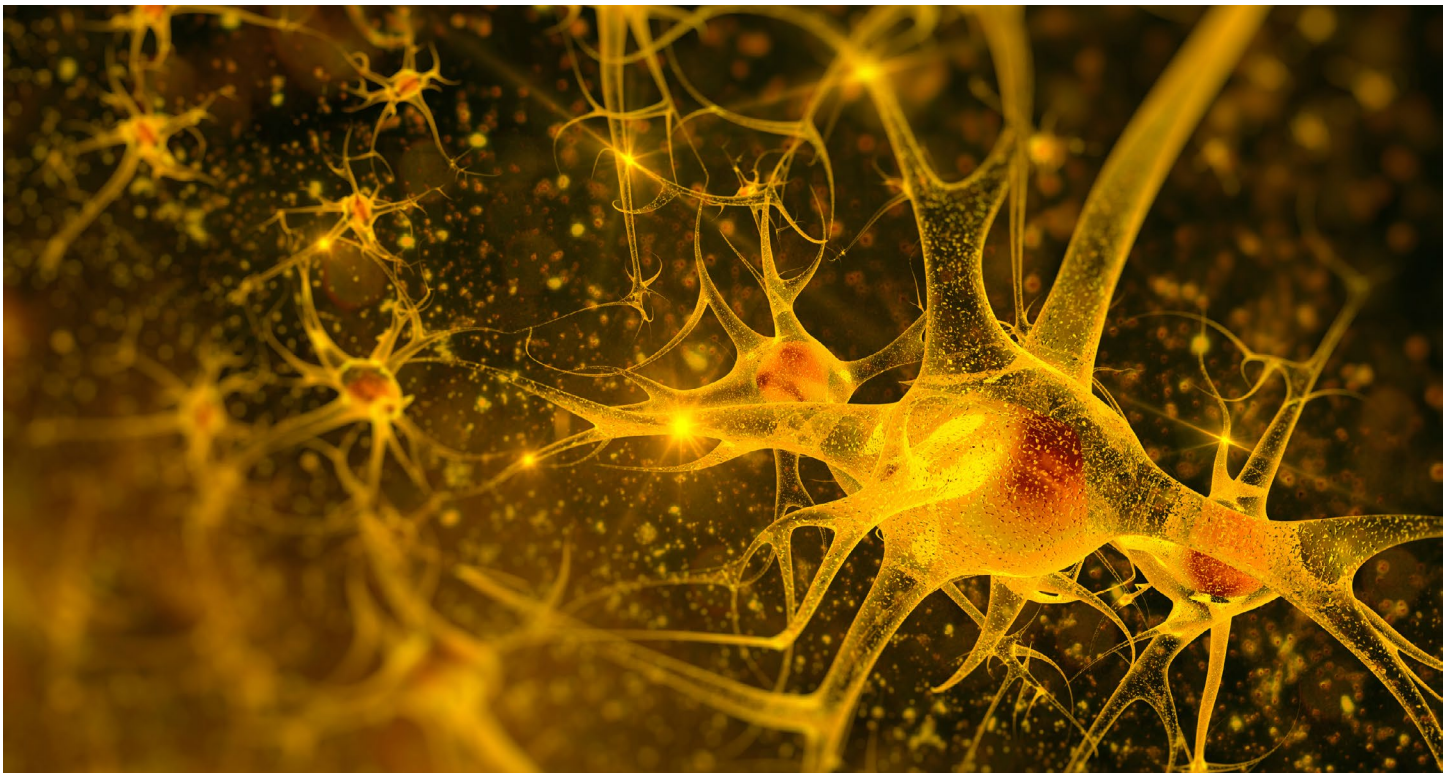

In Parkinson's disease, motor symptoms such as tremors, slowed movement, and rigid muscles are caused by the loss of dopamine neurons (shown here). Northwestern scientists are developing and testing new treatments to slow progression of the disease.

Feinberg Discovery Becomes a Groundbreaking Approach to Parkinson's Treatment

There are currently no treatments to slow progression of Parkinson's disease, the second most-common neurodegenerative disease in the United States.

Northwestern scientists have pursued an innovative idea—to antagonize calcium channels to protect dopamine neurons—refined it, developed it, and are now conducting studies to test the first ever neuro-protective drug for Parkinson's.

The motor symptoms of Parkinson's are caused by loss of dopamine neurons. Perplexed by why dopamine cells were specifically affected, D. James Surmeier, PhD, chair of Physiology, suspected something was different about these cells: he and his team began investigating the physiology of dopamine neurons and found they generated activity differently than other neurons.

"It was very clear to us that they were very different neurons; they are constantly active, similar to cardiac cells," Surmeier says.

Neurons generate electrical activity by opening and closing pores that allow charged ions to flow across the membrane, generating an electrical current. While most cells use ions such as sodium, Surmeier observed that dopamine cells also used calcium.

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Northwestern Medicine®

Feinberg Discovery Leads to New Approach for Parkinson's

(continued from cover page)

"Calcium is more of a problem, because it triggers a bunch of reactions in cells, so we said: 'This is potentially problematic.' Everyone knows a little calcium is good, but too much is bad; perhaps these cells allow too much calcium to flow across their membrane in the course of generating this activity," Surmeier says.

In several publications, Surmeier's group explored the electrical activity of calcium channels and demonstrated that calcium influx increased dopamine cells' sensitivity to toxins in Parkinson's. They also discovered that calcium channel antagonist drugs—often used in hypertension treatment—allowed dopamine neurons to stay active, but reduced the number of calcium ions passing through cell membranes.

To show how calcium might be killing dopamine neurons in Parkinson's, Surmeier collaborated with mitochondria expert Paul Schumacker, PhD, professor in Pediatrics-Neonatology, Cell and Molecular Biology and Medicine-Pulmonary. They used optical imaging to link calcium and mitochondrial dysfunction, showing that calcium channel antagonists reduce the amount of calcium in the cell, and decrease oxidative stress in mitochondria.

Motivated by these findings, several other epidemiology studies found Parkinson's risk is lower in patients taking calcium channel antagonists for hypertension.

With this evidence in hand, Surmeier partnered with Tanya Simuni, MD, professor in Neurology-Ken and Ruth Davee Department, to begin translational work on the calcium channel blocker drug isradipine.

"The data was exciting, but the first question we had to answer was whether it is safe to administer isradipine to patients with Parkinson's disease," Simuni says. "We needed to address whether we could give an anti-hypertensive drug to Parkinson's patients who are prone to have low blood pressure."

Simuni and her team conducted a small study to test the safety and tolerability of the drug in patients with early onset Parkinson's, with funding from the Northwestern Dixon Translational Research Grants. They found no unsafe drop in the blood pressure of patients taking the drug.

From left: D. James Surmeier, Paul Schumacker, Tanya Simuni, and Richard Silverman

Next, they launched a phase-two study with additional funding from the Michael J. Fox Foundation, testing the most effective dose within safety parameters. Simuni's team compared three doses of isradipine versus placebo in 100 early onset Parkinson's patients over a year. Results supported the previous findings, providing Simuni and her team with evidence to begin a phase-three clinical trial.

"This is a very novel way to look at the development of the progression of Parkinson's disease, and that is the greatest strength of the study," Simuni says.

The phase three trial, now enrolling patients, will evaluate whether isradipine is effective in slowing disease progression in those with newly diagnosed Parkinson's. The three-year study is a collaboration with the University of Rochester, and is being conducted in 57 centers with more than 300 participants. A novel aspect of the study is that it will test isradipine beyond existing symptomatic therapies.

"We have a lot of effective drugs to treat the symptoms of Parkinson's, but we still don't have a single drug that has proven to slow the progression of the disease," Simuni says. "While a cure is the ultimate goal, drugs that would slow the progression of the disease could have a tremendous impact on the people living with the disease as well as on health economics since the care of advanced Parkinson's is expensive."

Surmeier notes a limitation of isradipine is its lack of selectivity for calcium channels in the nervous system. He is developing a novel calcium channel blocker with Rick Silverman, PhD, professor in Chemistry.

"I think the calcium channels are only one part of the story for dopamine cells," Surmeier says. "There are several other things which could lead to the loss of these cells, and we are pursuing other means of protecting them. Most of the effort is trying to focus on alternative therapies to minimize damage."

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Showcasing Science at Lewis Landsberg Research Day

On Research Day, Sara Majewski, research assistant in Dermatology, mingled among hundreds of Feinberg faculty, fellows, residents, students, and staff, all taking a break from their labs, clinics, classrooms, and offices to showcase their research.

"Today has been wonderful. I've been able to talk to so many people in different fields," she said, standing in front of her poster with Beatrice Nardone, MD, PhD, principal investigator of her study. "It raises a lot of questions that will help improve our project."

Research Day, now in its eleventh year, included a poster competition featuring 322 presentations from almost every department of the medical school, ranging from basic science to clinical research to public health and social sciences.

For her project, which won first prize for clinical science, Majewski searched Northwestern Medicine's electronic medical records to look at two types of antihypertensive drugs and the risk of melanoma and non-melanoma skin cancer.

"After controlling for age, gender, and race, we found there was an increased risk for both types of skin cancers after chronic exposure to either drug," she said. "This is an interesting topic because inconsistent findings have been published. There's been back and forth on whether these drugs have carcinogenic tendencies."

Eric G. Neilson, MD, vice president for Medical Affairs and Lewis Landsberg Dean, welcomed attendees during the event's opening remarks.

"Research Day is an opportunity to ask questions, engage with faculty and student scientists, and seek out opportunities that may lead to new discovery," he said. "This event has grown immensely to become one of the most important activities at Feinberg."

2015 Research Day poster competition winners.

Keynote speaker Elaine Fuchs, PhD, an investigator at the Howard Hughes Medical Institute and Rebecca C. Lancefield Professor in Mammalian Cell Biology and Development at The Rockefeller University, delivered a presentation titled "Stem Cells in Silence, Action, and Cancer."

"My message today at Research Day goes so much deeper than stem cells and cancer. I wanted to convey my own research in a way that illustrates how passionate I am, after all of these years, to encourage students and postdocs to pursue the questions they're passionate about answering and to maintain that passion through the course of their careers," Fuchs said after her presentation, while perusing the poster session.

Watch a video about Research Day.

2015 Research Day Winners

Basic Science Research
- First place: Tomokazu Souma, MD, PhD, post doctoral fellow and Benjamin Thomson, MD, PhD, post doctoral fellow
- Second place: Rebecca G. Edwards, student in the Medical Scientist Training Program
- Third place: Nihal Kaplan, PhD, post doctoral fellow

Clinical Research
- First place: Sara Majewski, research assistant
- Second place: Robert E. Hanlon, PhD, associate professor
- Third place: Ali Shidfar, MD, post doctoral fellow

Public Health and Social Sciences Research
- First place: Elizabeth Groothuis, MD, MPH, instructor
- Second place: Kunal N. Karmali, MD, MS, senior cardiology fellow
- Third place: Philethea Duckett, MPA, PhD candidate

Women's Health Research

Basic Science
- First place: So-Youn Kim, PhD, research assistant professor
- Second place: Daniel Stieh, PhD, post doctoral fellow

Clinical Research and Public Health and Social Sciences
- First place: Luis Z. Blanco Jr., MD, post doctoral fellow
- Second place: Christina Minami, MD, General Surgery resident

Community-Engaged Research Partnership Award
- Partnership to Advance LGBT Health and Wellness

Complete list of winners, PIs, and project titles.
Browse all abstracts submitted for 2015.

Investigating Autophagy: A "Self-Eating" Pathway

Congcong He, PhD, Assistant Professor of Cell and Molecular Biology

Fascinated by the regulation and functions of autophagy—the process of cellular degradation—Congcong He, PhD, assistant professor of Cell and Molecular Biology, studies how this mechanism plays a role in metabolic diseases. Her team has made progress in identifying small molecules that alter autophagy activity.

"I plan to lead my team to further characterize mechanisms for new therapeutic interventions," she says.

Her expertise has allowed her to create important collaborations at Northwestern and abroad investigating the role of autophagy in diverse basic and translational science areas.

Q&A

What are your research interests?

My laboratory's research focuses on the molecular regulation and metabolic functions of autophagy, a housekeeping "self-eating" pathway through lysosomes. Autophagy is induced by various stress conditions, and allows cells to adapt to changing nutrient and energy demands through protein catabolism; its malfunction is implicated in many diseases. In particular, our interests and strengths include analyzing the functions of autophagy in physical exercise-mediated metabolic benefits, and investigating the molecular mechanism of stress-induced autophagy in the prevention of metabolic, neuronal, and behavioral dysregulation, such as obesity and type 2 diabetes. We are also interested in studying how autophagy proteins precisely coordinate with each other and orchestrate autophagy activity to prevent diseases in new cell and animal models.

What is the ultimate goal of your research?

Our long-term goal is to investigate the complexity and general principles of autophagy and other stress responses in a metabolic perspective, and apply that knowledge to the understanding of metabolic-related disorders. Specifically, one of our research goals is to unveil the vast potential and genetic basis of autophagy in the prevention of a broad spectrum of diseases, ranging from obesity to neurodegeneration, using unique genetic tools and high-throughput strategies. On the other hand, many stress responses, including autophagy, can be a double-edged sword, as their overactivation may cause toxicity. Thus, another goal of ours is to understand how to precisely induce autophagy to a high but physiologically safe level.

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

We have collaborations within Cell and Molecular Biology, across the medical school, and internationally, which involve the investigation of autophagy in a variety of disease settings, ranging from metabolic disorders to cancer. Our collaborators include Robert Vassar, PhD, and Sui Huang, MD, PhD, in Cell and Molecular Biology, D. James Surmeier, PhD, in Physiology, William J. Muller, MD, PhD, in Pediatrics, Richard Pope, MD, in Rheumatology, Robert Lavker, PhD, in Dermatology, Peter Sporn, MD, in Pulmonary Medicine and Cell and Molecular Biology, Brian Layden, MD, PhD, in Endocrinology, and Edward Thorp, PhD, and Wenan Qiang, MD, PhD, in Pathology. We are engaged in an international collaboration on a drug discovery project for novel autophagy-regulating compounds with Yifa Zhou at Northeast Normal University in China.

How did you become interested in autophagy?

I think every biology question resembles an unsolved detective mystery awaiting evidence collection and reasoning. Among all the puzzles, metabolism is the determining characteristic of life and many diseases are caused by metabolic dysregulation in response to stress. Thus, how do cells and organisms achieve and improve metabolic homeostasis and stress handling? Various stress conditions, such as starvation, exercise, or misfolded proteins, potently induce the common protective lysosomal pathway, autophagy. I am fortunate to have the chance to further pursue its mechanistic linkage and therapeutic potential in metabolic diseases down the road.

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Alleviating Administrative Burdens

Tiffany Parach, Research Administration Services

Where are you originally from?
I am from Detroit, Michigan.

What is your educational background?
I studied elementary education at Concordia University with a focus in mathematics and psychology.

Please tell us about your professional background.
I worked at Concordia University and Triton College in the area of information technology. Then, I spent a few years working in the corporate setting investigating insurance fraud and managing an office environment. In 2006, I started at Northwestern as a program assistant.

Over the last eight years, I have worked in roles of increasing responsibility within the Department of Family and Community Medicine and Feinberg's Research Administration Services.

Why did you choose to work at Northwestern?
I chose to work at Northwestern because of the great benefits and the culture of compliance.

How do you help scientists at the medical school?
I work with faculty to navigate and alleviate the administrative burden so they can focus on their research. This includes leading financial staff in completing all aspects of post-award financial management, from human resources to purchasing and everything in between.

What is your favorite part of the job?
My favorite part of my job is problem solving. I am routinely presented with unique challenges and complex problems in research administration. On a daily basis, I work with individuals within my department and from around the medical school, providing them with advice on how to navigate issues that arise in financial research administration.

What exciting projects are you working on?
Right now, I am managing a team to administer the financial aspects of Tanya Simuni, MD's Clinical Coordination Center STEADY-PD3 grant. This includes working with the Office of Sponsored Research and Accounting Services for Research and Sponsored Programs on the execution of 56 clinical sites/subcontracts and setting up process and procedures to improve the flow of communication and timely financial management.

What do you do in your spare time?
In my spare time, I love spending time with my eight-month-old twin daughters and my husband. We love going for walks in our neighborhood, Hyde Park. My husband is a solo blues guitarist and singer. We love traveling and going to music festivals.

Anything else we should know about you?
I love creating FASIS queries and Cognos Ad-Hoc reports. I am a data nerd!

Investigating Autophagy: A "Self-Eating" Pathway
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Who makes up your research team?
My group currently consists of two postdoctoral fellows, Kenta and Altea, one visiting scholar, Yuying, and one lab manager, Weiran. There will be one more trainee joining this August. All the team members are working independently on at least two projects, so they have the opportunity and freedom to explore multiple directions and build up their own future academic career non-conflicting with each other.

What do you enjoy about teaching/mentoring young scientists in the lab?
As still a relatively new PI myself, I am glad to say that mentoring in my lab is a two-way process. I enjoy interacting with my lab members by discussing ideas that are still at embryonic stages, working with them on the bench side-by-side, and learning together from unexpected discoveries and twists in research. I feel fulfilled when I grow together with the whole team and witness their gradual maturation in science, career, and life. I am very proud of the talented trainees in my lab, and would love to see more creative and ambitious young scientists interested in autophagy research in diseases.

A Scientific Path Inspired by Medicine

Clarence Chan, Medical Scientist Training Program and Interdisciplinary Biological Sciences

Clarence Chan, a fifth-year student in the MD-PhD Medical Scientist Training Program and Interdisciplinary Biological Sciences PhD Program, studies the structure and function of biological molecules at the molecular and atomic levels.

Chan earned his Bachelor of Science degree from Harvey Mudd College in Claremont, California. Passionate about science since childhood, it was natural for him to pursue a graduate degree. When medical school became of interest, Chan was attracted to Northwestern's MD-PhD program, and the opportunity to combine two somewhat different career paths.

Q&A

Where is your hometown?
I was born in Minneapolis, Minnesota, but I spent the majority of my childhood and teenage years in Beijing, China, where my parents worked as expatriates at a Swiss engineering company. In Beijing, I attended a K-12 international school, after which I returned to the U.S. for college in southern California. Being an 'expat kid,' I have always had a difficult time pinpointing a single place as my hometown, so I usually tell people my hometown is where my family is (currently, San Francisco and Chicago).

What are your research interests?
I am interested in studying the structure and function of biological molecules at the molecular and atomic levels. For instance, exactly how does an enzyme recognize its substrate? After binding to its substrate, what does this enzyme do? And what is the underlying chemistry of this interaction? Is there anything special about its respective structure that affects this interaction? The primary technique I use in the lab to answer these types of questions is macromolecular X-ray crystallography, and the focus of my research is structure-function relationships in protein-RNA complexes.

What exciting projects are you working on?
I am studying an enzyme called ribonuclease P, or RNase P, which assumes an indirect but essential role in protein synthesis. The precise chemical mechanism of RNase P and the structure of the non-bacterial homologues remain largely unknown. What makes RNase P relatively unique among biological catalysts is that its catalytic moiety is composed entirely of RNA instead of amino acids like most enzymes. Therefore, RNase P likely exhibits a different set of structural and functional properties than those characterizing protein enzymes. My research project is to elucidate the structural basis of RNase P substrate recognition and to investigate how it might differ from the primitive or bacterial form of RNase P and the homologues of higher organisms.

What attracted you to the PhD program?
I have loved science since I was a kid, and for a long time knew I wanted to become a scientist—a physicist, actually. While I was in college, my father was diagnosed with cancer and his health deteriorated very rapidly. In the final weeks I spent with my father in the hospital, I came to appreciate the many aspects of medicine that make it more of a discipline than just the study of the scientific basis of disease. And so, I became attracted to the MD-PhD program because it offers a unique opportunity for a student to be trained rigorously as a scientist, and yet, to learn medicine, and explore how one's research might relate to the broader context of clinical care and application.

What has been your best experience at Feinberg?
I really enjoy seeing and learning first-hand from physicians how to communicate with and help patients in a clinical setting. I have met many healthcare providers at Feinberg who are tremendously passionate for the work that they do for patients, and it is always inspiring to see them in action.

How would you describe the faculty at Feinberg?
I am constantly amazed at how approachable and supportive faculty members at Feinberg are and at how enthusiastic they are for their fields of study. Although the faculty is very diverse in their backgrounds, they all seem to share a common passion for both teaching and innovative research, which I find particularly inspiring as a student.

What do you do in your free time?
My wife and I have a small plot of land at a community garden where we have been gardening. Although I cannot foresee our harvests ever replacing our frequent trips to the grocery store, we have a lot of fun gardening and learning more about it. In my free time at home, I enjoy tinkering with computers (and their parts) and watching scientific and historical documentaries.

What are your plans for after graduation?
My current plan is to do a residency in pathology and to remain in academic medicine while having my own lab.

Research in the News

NBC News (National) March 27
U.S.-Russian crew moves into space station for yearlong mission
Fred Turek was interviewed.

► This research was also featured in *Chicago Tribune*, *Nature, New Scientist*, Yahoo! News, ABC7 Chicago, and more.

***TIME Magazine* March 26**
High blood pressure related deaths are way up, national data shows
Clyde Yancy was quoted.

***Philadelphia Inquirer* March 19**
Dad's depression affects toddler's behavior, too
Sheehan Fisher's research was featured.

***US News & World Report* March 17**
Kids' bad diets may mean worse health as adults
Donald Lloyd-Jones' research was featured.

***The New York Times* March 15**
Studies boost hopes for new class of cholesterol medicines
Donald Lloyd-Jones and Neil Stone were quoted.

► This story was reported by the Associated Press and also appeared in *The Washington Post, Boston Globe,* Huffington Post, Yahoo! News, and more.

***TIME Magazine* March 12**
Teen pot smokers have more memory damage, study says
Matthew Smith's research was featured.

► This research was also featured in *US News & World Report, Chicago Sun-Times, FOX News,* CBS News, HealthDay, and more.

National Public Radio March 10
Circadian surprise: How our body clocks help shape our waistlines
Fred Turek was interviewed.

Los Angeles Times March 2
Changes linked to Alzheimer's disease evident even in young brains
Changiz Geula's research was featured.

► This research was also featured in *TIME Magazine*, WGN-TV, Yahoo! Health, HealthDay, WebMD, and more.

National Public Radio March 2
People with eczema are itching for better health care
Jonathan Silverberg was interviewed.

More media coverage available online.

Northwestern University
NUCATS
Clinical and Translational Sciences Institute

NUCATS Corner

Clinical Research Coordinator Training Course Improvements

Northwestern University Feinberg School of Medicine and the NUCATS Institute are pleased to announce the newly revised, intensive Clinical Research Coordinator (CRC) Basic Training course, designed to make new research coordinator orientation and training more efficient and affordable than ever before.

Improvements to the revised course include but are not limited to:

- **2-day training**. Reduces training time to ensure all new coordinators have time to participate.
- **$199.** Reduces cost to ensure the training is accessible to all new coordinators at Feinberg.
- **TransCelerate Recognized**. Eliminates the need to participate in an individual Good Clinical Practice (GCP) training for each study by meeting the coordinator training requirements for all industry sponsored trials.
- **NIH GCP Compliant**. Provides staff with a "one stop shop" for introductory CRC training by fulfilling the upcoming NIH GCP training requirement.
- **Continuing Education (CE) Credit**. Enhances professional development by approving this course as a continuing nursing education activity by the NUCATS Institute. Provider approved by the California Board of Registered Nursing, Provider Number CPN 15198, for 14 continuing education contact hours.

Feinberg and the NUCATS Institute are committed to increasing the quality, safety and efficiency of clinical trials at the Institution through development of the clinical and translational workforce. We hope you will take advantage of this excellent opportunity to ensure your research staff have the training they need to work most effectively for you.

Registration for the revised course is now open.

View more information on the course and register.

Contact nucats-ed@northwestern.edu for questions or assistance registering.

Sponsored Research

PI: Michelle Birkett, PhD
Research Assistant Professor of Medical Social Sciences

Sponsor: National Institute on Drug Abuse

Title: "A Multilevel Network Model of Drug Use and HIV Racial Disparities in Men"

Black men who have sex with men (MSM), especially young MSM, are disproportionately affected by HIV, having an annual incidence higher than any other age or race group. Despite this increasing epidemic, few studies have focused on MSM nor accounted for these disparities.

The research that has examined disparities in MSM has been focused on understanding individual-level behavior, but this has been inadequate to explain HIV racial disparities. Additionally, network research is increasingly a priority area in HIV research due to the disease's high transmission dependence on drug and sexual network dynamics. However, network descriptions alone are also inadequate without considering the interplay of individual and contextual factors.

It has been suggested that a broader systems-level perspective may be necessary as several interacting individual, network, and contextual differences may account for the increased epidemic in black MSM populations. Due to this call for a systems-level perspective in understanding and preventing HIV infection, Birkett's research seeks to advance understandings of HIV racial disparities in MSM by examining these factors within a multilevel network model.

This model will be tested within an exceptional U01 NIDA-funded cohort of 1,200 diverse Chicago young MSM (PI: Brian Mustanski, PhD, associate professor of Medical Social Sciences and Psychiatry and Behavioral Sciences), which is collecting original multilevel (biologic, individual, dyadic, network) data. Utilizing methods developed within Birkett's project, young MSM will complete social (social, sexual, drug) and contextual (neighborhood & venue) network interviews. Building the study into the U01 cohort allows the current project to benefit from the strong infrastructure and resources of the U01, fortifies the project's feasibility, and provides unique opportunities to expand the aims of the U01.

Data from this comprehensive longitudinal multilevel dataset will be used to build and validate a model of social contextual influences on racial disparities in HIV through innovative analyses and methods that account for the complex dynamics of HIV transmission and racial disparities.

The overall project has two aims: to identify factors (i.e., social relational and social contextual) which contribute to racial disparities in HIV, and to examine the interplay of individual, sexual network, and social contextual factors in racial disparities in HIV.

Additional sub- aims include comparing the contribution of each level of analysis to racial disparities in HIV using innovative multiple-membership multiple-classification models and understanding and validating the relations of individual, sexual network, and social contextual structures and attributes to racial disparities in HIV.

PI: Brian Mitchell, PhD
Assistant Professor of Cell and Molecular Biology

Sponsor: National Institute of General Medical Sciences

Title: "Developmental Dynamics of Ciliated Epithelia "

The directed beating of motile cilia is a critical aspect of tissue function in a variety of developmental and physiological contexts including proper neural development, egg migration through the oviduct and mucus clearance in the respiratory tract. The loss of cilia motility results in a wide range of phenotypes including hydrocephaly, infertility, situs inversus, and respiratory dysfunction.

Mitchell and his team have developed the ciliated epithelium of Xenopus larval skin as a model system to ask: How do ciliated cells generate hundreds of cilia and how do they orient those cilia in an organized way?

They have developed confocal light microscopic methods for visualizing specific aspects of ciliated cells in the developing skin of Xenopus embryos. These methods allow the team to visualize the massive centriole duplication required to generate the approximately 150 basal bodies that nucleate the cilia. Additionally, the team can visualize and accurately quantify the cytoskeletal interactions that facilitate the establishment of cilia orientation.

Using these methods, Mitchell will address the regulation of microtubule dynamics during the polarization of ciliated

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Sponsored Research

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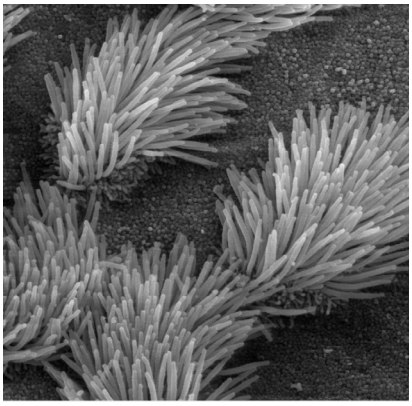
epithelia, the regulation of actin dynamics during the polarization of ciliated epithelia, and the regulation of centriole amplification.



Scanning electron microscope image of lung trachea epithelium. There are both ciliated and non-ciliated cells in this epithelium. (Image courtesy of Charles Daghlian.)

The anticipated results will provide a long sought after missing link between polarity cues and the regulation of cytoskeletal dynamics during cellular polarization. While this work is focused on ciliated epithelia, it will provide a clear understanding of the downstream regulation of polarity cues that is important in numerous developmental and disease contexts.

Additionally, defects in centriole duplication highly correlate with late stage cancer progression, indicating an uncoupling of duplication from the cell cycle. Mitchell's work will address the question of how centrioles can be generated in the absence of the cell cycle cues.

Welcome New Faculty

Egon Ozer, MD, PhD, joins as assistant professor of Medicine-Infectious Diseases. He earned his Doctor of Medicine degree from University of Iowa, where he also completed his Doctor of Philosophy in molecular biology. He completed his residency in internal medicine and a fellowship in infectious disease at Northwestern University McGaw Medical Center.

Ozer's research is focused on uncovering mechanisms of bacterial pathogenesis in Pseudomonas aeruginosa infection and other clinically relevant bacterial diseases. He uses comparative bacterial genomics to identify new genes and other factors that contribute to worse outcomes in patients infected with these bacteria.

Funding

Understanding User Needs and Context to Inform Consumer Health Information Technology Design (R01)

More information

Sponsor: Department of Health and Human Services, Agency for Healthcare Research and Quality (AHRQ)
Submission deadline: June 5

Upper Amount: $2.5 million

Synopsis: This funding opportunity expresses AHRQ's interest in funding research projects that will build a knowledge base of individuals' personal health information management (PHIM) needs and practices, and the design principles related to these activities. There is increased interest and availability of consumer health information technology and applications, and individuals are the end users. However, there is still a lack of basic research around these users' PHIM practices and needs and how these methods are influenced by a multitude of other contextual factors. This opportunity looks to bridge the chasm that currently exists between consumer health IT designers and the users themselves, by bolstering basic research to better understand users' PHIM practices, needs, and goals as they are intrinsically shaped by an array of contextual factors.

Chronic Inflammation and Age-Related Disease (R01)

More information

Sponsor: Department of Health and Human Services, National Institutes of Health
Submission deadline: May 25

Upper Amount: $2.5 million

Synopsis: Applicants are invited to address both the origins and the effects of low-level chronic inflammation in the onset and progression of age-related diseases and conditions. Applications submitted to this funding opportunity should aim to clarify the molecular and cellular basis for the increase in circulating inflammatory factors with aging, and/or shed light on the cause-effect relationship between inflammation and disease, using pre-clinical (animal or cellular based) models.

View more funding opportunities

High Impact Factor Research

February 2015

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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

Tuesday, April 21

Lectures in Life Sciences

"Mechanisms Leading to the Development of Multiple Sclerosis," by Joan Goverman, PhD, University of Washington.

Time: 4 to 5 p.m.
Location: Lurie Medical Research Building — Hughes
303 E. Superior St. (Chicago campus)
Contact: pamela.carpentier@northwestern.edu
More information

Wednesday, April 22

Lurie Cancer Center Grand Rounds Lecture

"Gene Therapy for Hemoglobinopathies," by Punam Malik, MD, Cincinnati Children's Hospital Medical Center.

Time: Noon to 1 p.m.
Location: Lurie Medical Research Building — Searle
303 E. Superior St. (Chicago campus)
Contact: cancer@northwestern.edu
More information

Thursday, April 23

Antimicrobial Resistance: An Interdisciplinary Research Symposium

Speakers will cover various aspects of antimicrobial resistance, including epidemiology, organism-specific information, new diagnostic technology, new antimicrobials, infection prevention, and antimicrobial stewardship.

Time: 8:30 a.m. to 4:30 p.m.
Location: Northwestern Memorial Hospital Conf. Center
Pritzker Auditorium, 3rd Floor Feinberg Pavilion
251 E. Huron St. (Chicago campus)
Contact: IDFellows@northwestern.edu
More information

Friday, May 1

Women's Cardiovascular Health Symposium

Key gender specific advances in a variety of areas of CVD, such as coronary artery disease, stroke, metabolic disorders, valvular heart disease, arrhythmias and heart failure will be covered.

Time: 12:30 to 6:30 p.m.
Location: Prentice Women's Hospital, 3rd Floor Conf. Center
250 E. Superior St. (Chicago campus)
Contact: nums-cme@northwestern.edu
More information

More Events

Event organizers are encouraged to submit calendar items on Plan-It Purple for consideration. Please contact the Research Office with further questions.

NIH News

Modified Biosketch Format Reminder
As a reminder, the modified biosketch format is required for applications submitted to NIH for due dates on or after May 25, 2015. Biosketch format pages, instructions, samples, and FAQs are available on the Biosketches section of the SF424 (R&R) Forms and Applications page.

To learn how the Galter Libary can help, or to arrange a presentation to your group, email Pamela Shaw, Biosciences and Bioinformatics Librarian at p-shaw@northwestern.edu.

NIH has also posted podcasts to *Extramural Nexus* with more background on the modified format.

Exploring Trends in R01 and R21-equivalent Grants
NIH deputy director for extramural research Sally Rockey, PhD, recently shared information about FY14 R01 and R21-equivalent success rates. In FY14, the number of R21 applications and awards continued to grow, and increased to its highest ever since 1998, unlike the pattern for R01-equivalents. Says Rockey, "The data presented may help you in deciding which mechanism of support you should consider when applying to NIH."

New Video: Eye on NIH Policy OMB Uniform Guidance
The Eye on NIH Policy: OMB Uniform Guidance - What It Means for NIH & You presentation video (2015) provides viewers with information on recent and upcoming changes to NIH policy as a result of the publication of HHS' regulations implementing Office of Management and Budget Uniform Guidance, and how it affects the grants process.

Strategies for Writing Effective NIH 'R' and 'K' Proposals
NUCATS' *First Mondays: Navigating the Research Enterprise* series recently explored, "Strategies for Writing Effective NIH 'R' and 'K' Proposals." Audio and slides from the two-part February and March sessions are now available, along with a list of upcoming workshops.

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