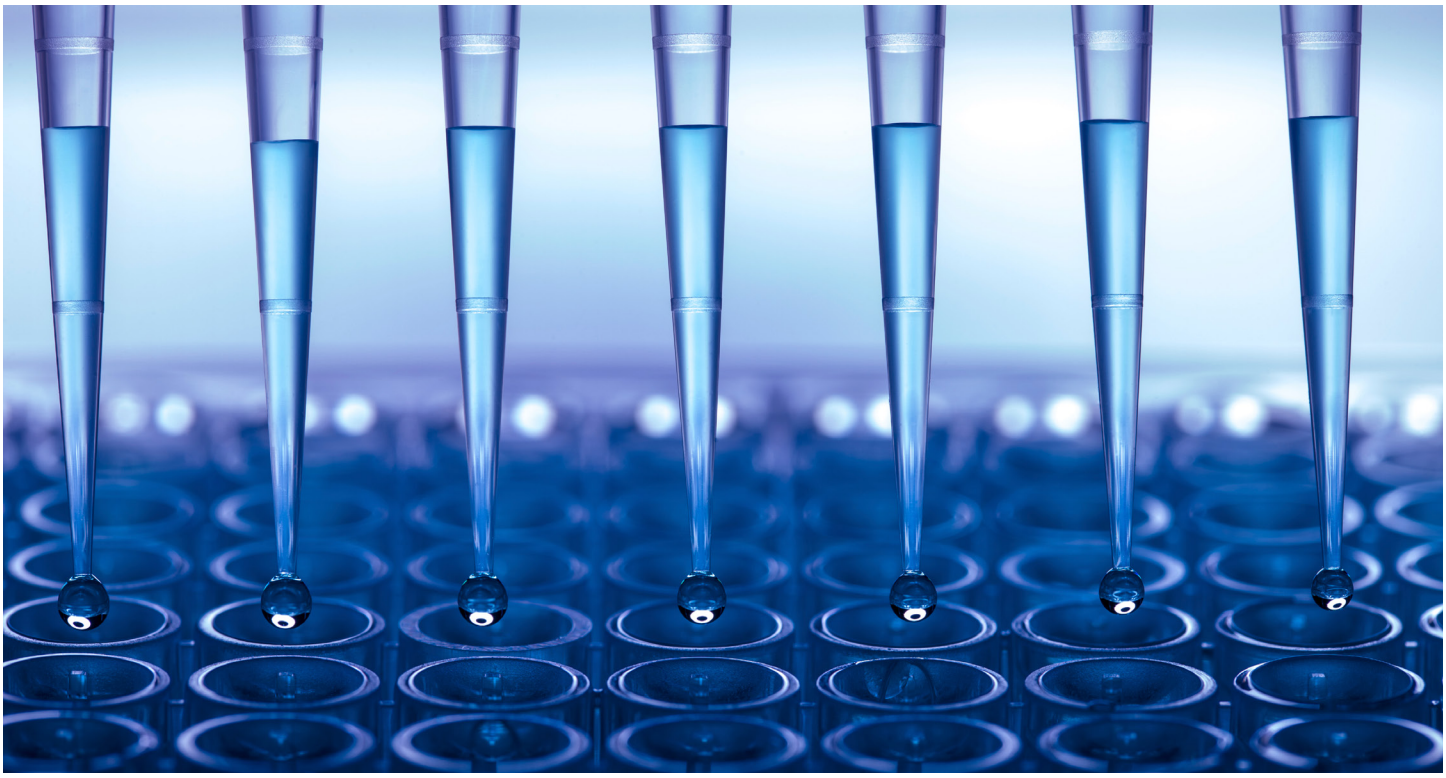
Breakthroughs

Feinberg School of Medicine Research Office

September 2015



The NUCATS Institute is an integral link in Northwestern University's clinical and translational research enterprise accelerating translational innovation by providing research teams with consultative resources and expertise.

NUCATS Renewed With $27.2 Million Award

This summer, the Northwestern University Clinical and Translational Sciences (NUCATS) Institute began a new phase of funding with a grant that will help push promising treatments out of laboratories and to the patients who need them more quickly.

The four-year, $27.2 million Clinical and Translational Science Award (CTSA) from the National Institutes of Health National Center for Advancing Translational Sciences (NCATS) focuses on providing investigators with new and continuing resources to make research more accessible to patients by involving them in clinical trials.

"It takes too long for new scientific discoveries to get to places where they can make a meaningful impact on patients," said Donald Lloyd-Jones, MD, ScM, senior associate dean for Clinical and Translational Research and director of NUCATS. "We're trying to break down major hurdles in the middle of the translational pipeline – where we conduct clinical trials with real people to see whether a new medical device or drug actually works in the real world."

Lloyd-Jones points to Sanjiv Shah, '00 MD, associate professor of Cardiology in the Department of Medicine, as an example of how NUCATS already achieves this goal. Shah used the institute's Enterprise Data Warehouse to find patients hospitalized at Northwestern Memorial Hospital who had heart failure with preserved ejection fraction, a type of heart failure that is very

(continued on page 2)

Northwestern Medicine®

NUCATS Renewed With $27.2 Million Award

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common, but lacks tailored treatment options. His ongoing work using machine learning and deep phenotyping led to a paper that identified three distinct groups of patients with the cardiac syndrome, a finding that will influence future therapeutic developments and allow for more personalized approaches to care.

To date, NUCATS has 10 centers and programs designed to assist investigators at all levels. For instance, its Multidisciplinary Mentored Career Development (KL2) Program offers salary support, protected time for research, peer mentoring and career guidance, while the Center for Data Science and Informatics houses a powerful suite of integrated informatics tools that help turn clinical data into new insights.

NUCATS is also a leader in team science, a burgeoning field that tries to augment scientific discovery by bringing together teams of investigators with diverse but complementary expertise in a specific disease area.

"Because great breakthroughs in science often occur at the boundaries between different fields, it's important for scientists to learn to work in interdisciplinary teams. But team science is very challenging to accomplish because the vocabularies, methodologies, mental models and scientific priorities of different fields vary so greatly," said Bonnie Spring, PhD, director of NUCATS' Collaboration and Team Science Program. "This program offers online training, workshops, and consultation to help teams launch and mature."

During the new phase of funding, the institute will also focus on measuring the impact of research with novel real-time, data-driven systems in collaboration with the Galter Library Metrics and Impact Core, including visualization techniques, alternative metrics and targeted strategies that enhance the discoverability of investigator's research.

"We want to better understand the amazing discoveries of Northwestern Medicine investigators and biomedical research more broadly," said Kristi Holmes, PhD, director of NUCATS' Evaluation and Continuous Improvement Program. "Through targeted approaches, we can use scholarly outputs to make a real distinction between counting publications and really understanding where those discoveries lead. This enables us to better identify the impact of clinical and translational science on changes in practice and health."

NUCATS leaders Justin Starren, MD, PhD, and Donald Lloyd-Jones, MD, said the new grant will help research translate from bench to bedside more quickly.

The CTSA award enables new programs to empower the scientists that drive all of this research.

"Investigators already leverage the CTSA infrastructure to make them more competitive for federal funding," said Rex Chisholm, PhD, vice dean of Scientific Affairs and Graduate Education. "In its next phase, NUCATS will strengthen its available resources, providing additional training initiatives, practical tools for multidisciplinary team science and a culture of continuous improvement."

Among new NUCATS-funded initiatives, a Multidisciplinary Clinical and Translational Research Pre-doctoral Training (TL1) Program will train graduate students from under-represented minorities, doctoral students and post-doctoral fellows to work in the critically important area of child and adolescent health. The institute will also spearhead new diversity efforts, including an online testing module that examines for implicit bias and qualitative research to develop strategies for overcoming barriers that impede the participation of underrepresented racial and ethnic minorities, persons with disabilities, and women in the workforce.

"Whether you want to take discoveries in the lab closer towards treatments in humans, get started with a clinical trial and find participants, or actually implement the knowledge gained from a clinical trial into the clinic or community, we have resources for the entire pipeline of translational research," Lloyd-Jones said.

NUCATS launched in 2007 as a hub to support and accelerate research across six schools at Northwestern University and three clinical partners in Chicago: Northwestern Memorial Healthcare, the Ann & Robert H. Lurie Children's Hospital of Chicago and the Rehabilitation Institute of Chicago. Over the last five years, NUCATS served 3,174 investigators and assisted in the publication of 974 scientific papers.

CONTENTS

Feinberg Welcomes New PhD Students to Campus

This fall, new PhD students from around the world will arrive on the Chicago campus to join the Driskill Graduate Program in the Life Sciences (DGP), Northwestern University Interdepartmental Neuroscience Program (NUIN), Medical Scientist Training Program (MSTP), Clinical Pyschology PhD program, Doctor of Physical Therapy/PhD program and Health Sciences Integrated PhD (HSIP) Program.

DGP welcomes 26 new PhD students. This group includes individuals with undergraduate degrees from schools as close as the Midwest and as far away as China, Colombia and Italy. These students will complete courses and lab rotations during the first year, which allow them to explore several types of research before selecting a dissertation lab and project.

The new NUIN students hail from across the United States from California and Oregon to New York and Baltimore. The entering class is comprised of 17 PhD candidates.

The MSTP welcomes 13 new students who will earn both their MD and PhD degrees at Northwestern. They will complete two years of medical school before starting their doctoral program in a lab.

Once they earn their PhD, they will return to medical school to complete their Doctor of Medicine degree. This year's entering class has earned undergraduate degrees from institutions that include Stanford University, Cornell University and Massachusetts Institute of Technology.

Seven new students are beginning the Clinical Psychology PhD program. This year's class come from near and far, including Georgia, Connecticut, Indiana and Illinois.

They will spend six years at Feinberg for training in the clinical practice and science of psychology along with specific training needed for careers as clinical psychologists conducting research and/or clinical work in academic medical centers or other health care settings.

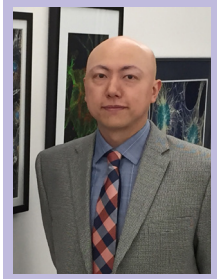
New PhD students in the Driskill Graduate Program in the Life Sciences program

The DPT-PhD(Eng) program welcomed one new student, Allison Bingqing Wang, who will earn a Doctor of Physical Therapy (DPT) degree and PhD in biomedical engineering at Northwestern.

She will complete two years of engineering school before starting the DPT program at Feinberg. Once she earns her DPT, she will return to the engineering program to complete the PhD degree. This year's entering student earned her undergraduate degree from the University of Rochester.

Finally, four new students join the HSIP program to become its fourth entering class. Founded in 2012 and unique to Northwestern, HSIP trains students in processes and methodologies in clinical and population sciences through the Institute for Public Health and Medicine. The class comes from Nigeria, Massachusetts and Pennsylvania. All of the students previously earned master's degrees.

Welcome New Faculty

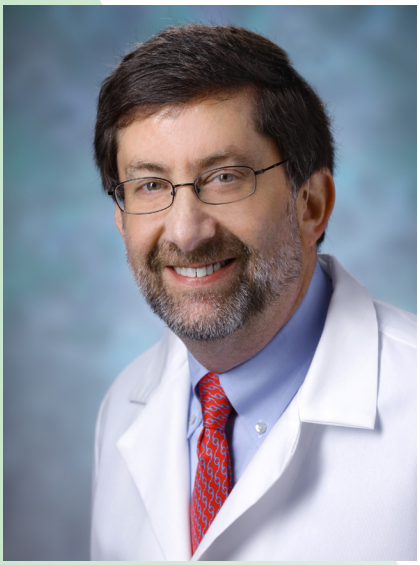


Dai Horiuchi, PhD, joins as assistant professor in the department of Pharmacology and a member of the Robert H. Lurie Comprehensive Cancer Center. He earned a doctorate degree from Indiana University, Bloomington in cell and molecular biology and recently completed a postdoctoral fellowship at University of California, San Francisco in cancer biology in the department of cell and tissue biology and in the Helen Diller Family Comprehensive Cancer Center.

The major focus of Horiuchi's lab is studying the mechanisms of tumor maintenance and progression in breast cancer and to identify novel therapeutic targets and treatment strategies. To achieve these goals, the lab utilizes a collection of human breast cancer cell lines, preclinical animal models and high-throughput screening approaches along with state-of-the-art bioinformatics through collaboration with experts in the field.

Better Treatments for Allergies, Asthma and Sinusitis

Bruce Bochner, MD, Samuel M. Feinberg Professor in Medicine



As a physician-scientist, Bruce Bochner, MD, Samuel M. Feinberg Professor in Medicine, investigates the mechanisms behind allergies, asthma, sinusitis and other diseases associated with eosinophils and mast cells.

He focuses on pathways involving a surface protein called Siglec-8 that is expressed on these cells as a possible target for future therapies.

Bochner, a professor of Allergy-Immunology in the Department of Medicine, joined Feinberg in July of 2013 after spending 28 years at Johns Hopkins University, where he began as a fellow training with Robert Schleimer, PhD, who is now chief of Allergy-Immunology at Feinberg.

Q&A

What are your research interests?

I've always been interested in trying to find new treatments for my patients, especially when existing drugs are not adequate. As a result, my lab focuses on cells called eosinophils and mast cells. Eosinophils are one of the least common white blood cells. They help fight off parasite infections, but in certain diseases too many accumulate in specific tissues and cause trouble.

Mast cells, on the other hand, are normally found in virtually all tissues. But during allergic reactions, they get inappropriately activated to release their contents, including histamine and other substances. If enough mast cells get activated around the same time, a serious allergic reaction called anaphylaxis can occur.

Given the fact that mast cell activation can lead to serious life-threatening reactions, and that eosinophils are inappropriately increased and activated in a variety of conditions ranging from allergies, asthma, and sinusitis to certain skin diseases to gastrointestinal disorders such as eosinophilic esophagitis, the lab has been in search of ways to get rid of excess eosinophils and to prevent unwanted mast cell activation.

How does your research advance medical science and knowledge?

About 15 years ago, we discovered a surface protein uniquely shared by both eosinophils and mast cells called Siglec-8. When Siglec-8 is triggered, two important things happen: It causes eosinophils to die and disappear, and it makes it much harder to activate mast cells during an allergic reaction. We then discovered that Siglec-8 binds to unique sugar structures and that exposing these cells to sugar structures could kill eosinophils by binding to and activating Siglec-8.

As a result of our work and others, we now know that both Siglec-8 and its closest mouse counterpart, Siglec-F, bind sugars on certain types of mucus. We discovered that when the right type of mucus binds to Siglec-F on eosinophils, it causes them to die. And mice missing an enzyme necessary for putting these sugars onto the mucus accumulate more eosinophils in their airways in a model of asthma.

So we think that one way the body tries to protect itself from too many wayward eosinophils is by producing mucins on the mucosal surface that help get rid of these eosinophils. It's our hope that Siglec-8 directed treatments might some day become available.

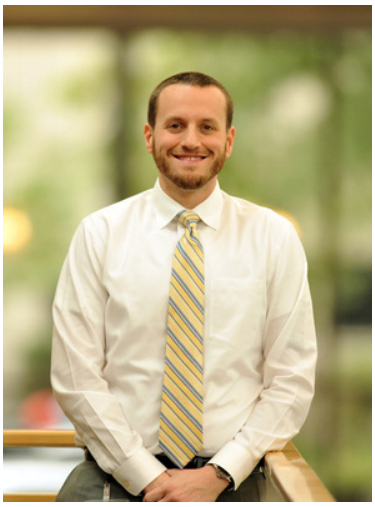
How is your research funded?

I am extremely grateful that this work has been funded for more than 15 years, mainly by the National Institute of Allergy and Infectious Diseases and the National Heart, Lung, and Blood Institute. I've also received funding from the Dana Foundation and worked with scientists at GlaxoSmithKline.

(continued on page 10)

From Banking to Basic Science

Matt Temkin, Basic Science Administration



Where are you originally from?
I was born in Chicago, but I was raised in Evanston since I was three years old.

What is your educational background?
I received my bachelor's degree in political science and legal studies from the University of Wisconsin-Madison in 2002. After a few years of working full time, I pursued a master's degree in public administration at University of Illinois at Chicago. I worked full time and attended school part time until graduating in 2008.

Please tell us about your professional background. (ie. other places you have worked prior to Northwestern, or, other jobs you've held at Northwestern.)
My first job out of college was with Bank One (now Chase Bank). After one year, I quickly realized the corporate sales environment was not for me. I was hired at Northwestern in 2003 as a financial assistant on the Evanston campus in the International Institute for Nanotechnology. This was a great starting point at Northwestern and provided me experience working on a large federally sponsored center grant in a developing technology.

After three years, I started working on the Chicago campus in the office of Accounting Services for Research and Sponsored Programs. This gave me a deeper understanding and appreciation of the work involved with pre- and post-award research administration and this prepared me for my next role as the center administrator for the Center for Genetic Medicine.

I spent almost four years honing my skills in managing an administrative group, preparing the annual center budget and leading the pre- and post-award research administration. In May 2014, I began working as the interim executive department administrator in the basic science administration group and was named permanent administrator in August 2014.

Why did you choose to work at Northwestern?
I grew up in Evanston and spent a lot of time around the campus as a child and teenager. My mother worked at Northwestern in a couple different positions, with her longest tenure in the Office for Sponsored Research in Evanston. I moved back to Chicago after graduating from UW-Madison and found that I enjoy working in higher education and in a research environment. Northwestern seemed like a natural fit and I've been here ever since!

How do you help scientists at the medical school?
Basic Science Administration (BSA) is a group that supports five departments and two centers. Our group is committed to providing administrative assistance to our departments and centers. We provide all criticalbusiness functions from human resources, procurement, expense report processing, recharge billing, pre- and post-award research administration and space management across our departments and centers so that faculty and their staff and students can focus their time and energy on their research rather than the behind the scenes mechanisms.

What is your favorite part of the job?
My favorite part of the job is being a leader and mentor to a large staff of talented and committed individuals. We've come a long way since the start of this administrative unit and we have more growing to do together, but I look forward to what's ahead.

What exciting projects are you working on?
Our faculty members are continuously working on exciting research, and many have been awarded major new sponsored research awards. We look forward to working with the faculty and their labs, helping them facilitate these projects and be a part of new discoveries. As an administrative group, we are looking at refining our processes to be more efficient with our time while maintaining our high-quality standards. In the next fiscal year I'm hoping to collaborate with our finance teams to take advantage of our shared experiences and build a better unit moving forward. I'm also looking to develop a communications plan to help manage our outreach and web presence within departments and individual labs.

What do you like to do in your spare time?
I'm lucky enough to be married to a wonderful woman and have the most adorable and fun two-year old daughter. Outside of work, we're always doing fun things together as a family. I also have a great group of friends, with whom I enjoy getting together with them to watch a game, check out a concert, or get our families together.

Anything else we should know about you?
Despite growing up in Evanston and working at Northwestern, my college sports loyalties are with the Wisconsin Badgers. I'm a diehard Badger football and basketball fan. My Dad and I watch most games together, we can be a little nuts when it comes to watching the games, but it's fun. I'm always pulling for Northwestern, however, when they are not playing the Badgers!

A Focus on RNA and Breast Cancer Research

Samuel Harvey, Medical Scientist Training Program

Samuel Harvey, a second-year MD/PhD student in Northwestern University's Medical Scientists Training Program, studies the relationship between RNA processing and breast cancer in the laboratory of Chonghui Cheng, MD/PhD, assistant professor of Hematology/Oncology in the department of medicine.

Harvey earned a Bachelor of Science degree in biology from the College of William & Mary in Williamsburg, Va. After pursuing research projects in high school and during his undergraduate studies, he knew graduate school was a natural fit for scientific research.

Q&A

Where is your hometown?

I grew up in the small town of Salem, nestled in the Roanoke Valley of southwestern Virginia, only minutes from the Appalachian Trail. My childhood in a more rural area was full of natural beauty and wonder, but we were also fortunate to live only a short drive from the larger community of Roanoke, which offered access to more urban amenities.

What are your research interests?

My favorite biological macromolecule is ribonucleic acid, or RNA, and currently I am studying the relationship between RNA processing and breast cancer. In particular, I study alternative splicing of RNA, the process whereby one gene encoded in DNA is transcribed into pre-RNA that can then be recombined and reconfigured via splicing into different splice isoforms that sometimes have distinct functions once they are translated into protein.

Alternative splicing is a major gene regulatory mechanism responsible for generating the diversity of the human proteome, and I am particularly interested in how changes in alternative splicing can promote breast cancer metastasis.

What exciting projects are you working on?

Recently I have been studying the heterogenous nuclear ribonucleoprotein M, abbreviated hnRNPM. hnRNPM is a splicing factor, a protein that binds to RNA and drives alternative splicing towards particular splice isoforms and shortly before I joined, the lab discovered that hnRNPM drives a global splicing program in breast cancer that strongly promotes breast cancer metastasis. We have some insight into the mechanism by which hnRNPM drives metastasis, but the protein modulates the splicing of thousands of different transcripts. If hnRNPM is as powerful a metastasis-promoter as we think, there is much to learn in how hnRNPM causes breast cancer cells to metastasize as well as what we can do to abrogate this function.

What attracted you to the MD/PhD program?

I have been interested in science and medicine ever since I was a child. Many of these interests stemmed from the influence of my parents. My father is an engineer and taught me the value of precision and systematic thinking, and my mother is a clinical nurse specialist with a PhD in nursing who introduced me to the beauty of the medical profession and how well research integrates within the medical mission.

My first glimpse into the MD/PhD career was in high school when I attended a life sciences summer camp at Virginia Commonwealth University. This was the first time I interacted with MD/PhDs and other physician-scientists and after that summer program I was convinced that the union of medicine and scientific research was the career for me. I endeavored all through college on various research projects and tried to make myself competitive to apply to MD/PhD programs like the one here at Northwestern. In my opinion, the integrated MD/PhD training program offers an unparalleled medical and research education and I am so grateful for the opportunity to pursue my training here at Feinberg.

What has been your best experience at Feinberg?

The most meaningful experience I have had through Feinberg was provided by a generous travel grant afforded by the Robert H. Lurie Comprehensive Cancer Center. I relished the opportunity to attend the 20th Annual RNA Society meeting in Madison, WI with my research mentor, members of my lab and other students from the Feinberg community, where I presented the work from my first year of PhD research. This meeting was especially important for my development as a young scientist within a global research field, and I am thankful that Feinberg provides students the opportunity to grow as communicators of science and to share their research with the wider world.

What are your plans for after graduation?

I am currently most interested in pursuing a residency in anatomic pathology with specialization in the molecular genetics of solid tumors. After residency I hope to work at an academic medical center as a principle investigator of my own research program.

Research in the News

***Reuters* August 27**
Few gay, bisexual teen males being tested for HIV
Brian Mustanski's research was featured.

► This study also was covered in *The New York Daily News, U.S. News & World Report* and more.

***Chicago Tribune* August 26**
Domestic-violence researcher works up a profile
Robert Hanlon's research was featured.

► This study also was covered in *Fox News* (national), *Yahoo! News* and *The Washington Post.*

***Good Morning America* August 26**
New PCOS research may offer hope in infertility struggle
Andrea Dunaif's research was featured.

***The Huffington Post* August 26**

5 things you should know about oncofertility
Teresa Woodruff's research was featured.

***Reuters* August 25**
Spinal injections of steroids temporarily ease low back pain
Zack McCormick is quoted.

***WGN-TV* August 18**
Uncovering traumatic memories in the brain
Jelena Radulovic's research was featured.

***U.S. News & World Report* August 17**
Taking stock of what's in that lunchbox
Donald Lloyd-Jones's research was featured.

***The Washington Post* August 12**
The science of skipping breakfast
Linda Van Horn was quoted.

***The Associated Press* August 11**
Kids with cancer get futuristic chance at saving fertility
Erin Rowell was quoted and oncofertility research mentioned.

► This also was covered in *The Washington Post, The Chicago Tribune* and *The Philadelphia Inquirer.*

***Yahoo! News* August 6**
Music lessons can make students smarter
Nina Kraus' research was featured.

► This also was covered in *The Durango Herald.*

More media coverage available online.

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NUCATS Corner

Cite and Acknowledge the CTSA

Have you received funding from the NUCATS Institute? Have you utilized any of the Institute's resources and services, facilities, tools or navigator and studio consultations?

If yes, please remember to cite the Institute's new CTSA grant number UL1TR001422 in your publications.

The National Institutes of Health (NIH) requires acknowledgement of the NUCATS Clinical and Translational Science Award (CTSA) grant number in your publications.

The CTSA grant allows NUCATS to provide investigators at Northwestern with essential infrastructure, resources and services to support the translational research enterprise.

Since publications are the key metric that Congress, the NIH, and NU use to demonstrate effective use of grant funding, it is critically important that you cite the NUCATS grant. When you cite the CTSA grant, you help:

- NU researchers continue to get essential infrastructure, resources, and services
- NUCATS demonstrate productivity and effectively compete for CTSA renewal
- NU maintain prestigious CTSA funding
- NIH demonstrates positive results to Congress to continue the CTSA program
- You also make yourself more competative for federal funding by leveraging existing federal resources at NU

Sponsored Research

PI: Erica Marsh, MD, '08 MSCI, assistant professor of Reproductive Endocrinology and Infertility in the Department of Obstetrics and Gynecology

Sponsor: The Patient-Centered Outcomes Research Institute & the Agency for Healthcare Research and Quality

Title: "Comparing Options for Management: Patient-Centered Results for Uterine Fibroids (COMPARE-UF)"

Northwesern is one of nine centers nationwide taking part in COMPARE-UF, a five-year and $20 million project to evaluate the effectiveness of different treatment strategies for women with uterine fibroids. Marsh will be the site Principal Investigator at Northwestern for COMPARE-UF and will be responsible for leading a team to recruit a diverse cohort of women from the Chicago area for the project.

Each center will contribute information about geographically, racially, ethnically, and clinically diverse women who have received medical or surgical treatment for uterine fibroids. They will report on patient outcomes over time after their treatments.

Uterine fibroids are the most common non-cancerous tumors in women of childbearing age and the second-most common reason that women of childbearing age undergo surgery. They can lead to significant pain, bleeding, and fertility problems. Treatments range from noninvasive approaches such as watchful waiting to invasive procedures such as hysterectomy. However, there is little evidence about the effectiveness of these therapies or their outcomes, including impact on the ability to have children.

Her research area of interest is health disparities within reproductive endocrinology and infertility with a focus is uterine fibroids. She seeks to understand the challenges of fibroids, addressing the pathophysiology, epidemiology and clinical impact of these benign but very morbid tumors. She also aims to understand the patient experience from symptoms and diagnosis to treatment.

From the basic science perspective, she is interested in the extracellular matrix (ECM) and understanding the role of microRNA in the development of fibroid ECM. Clinically, she is interested in the interplay between obesity and fibroid development, particularly in understudied populations. From the patient perspective, she seeks to understand drivers of patient knowledge of fibroids and factors that guide patient decisions.

PI: Joe Mazzulli, PhD, assistant professor of neurology

Sponsor: National Institute of Neurological Disorders and Stroke

Title: "The role of a-synuclein accumulation in lysosomal hydrolase trafficking and function"

Mazzulli's lab is examining how protein aggregates lead to neurotoxicity through focusing on mechanistic links between sporadic Parkinson's disease and rare genetic lysosomal diseases.

Parkinson's disease is neurodegenerative disorder characterized by the accumulation of protein aggregates primarily made of a synaptic protein called a-synuclein. While inclusions are clearly correlated with disease, their mechanism of formation and relationship to neurotoxicity is unclear.

Recent work by Mazzulli and others demonstrated that GBA1 mutations that cause a rare lysosomal lipid storage disorder, Gaucher Disease, result in a-synuclein accumulation similar to that observed in Parkinson's brain. Previous data from their lab indicates that inclusions are formed specifically when lysosomal function is compromised.

Mazzulli's team also found that once a-synuclein inclusions are formed in neurons, they inhibit cellular degradation capacity through blocking enzyme trafficking into the lysosomal compartment. This pathological process further promotes the growth of protein aggregates, leading to a state of cell-propagating disease.

The aim of this proposal is to elucidate the mechanism of this pathogenic cycle, by examining the effect of a-synuclein aggregates on the lysosomal degradation system. They will culture patient-derived midbrain neurons for hundreds of days to test the effect of inclusions formed naturally through age-dependent mechanisms.

Their goals are to define the relationship between distinct a-synuclein aggregates and lysosomal dysfunction and neurotoxicity; determine how a-synuclein affects lysosomal hydrolase trafficking; and discover new rescue pathways in Parkinson's neurons centered on promoting enzyme folding and stability.

These studies may provide new insight into the mechanism of how protein aggregates disrupt essential cellular processes, and identify novel therapeutic pathways for synucleinopathies focused on enhancement of the lysosomal clearance pathway.

Galter Library Connection

Choosing a Journal and Making a Match

Time to publish those research results? Wondering which journal to choose? There are many ways to get your research out there, but choosing a journal is an important step, so let's review a few interesting tools that can help.

The Traditional Approach
Some key tools for the more traditionally-minded include journal assessment reports developed from literature databases. But be warned, no report or associated metric is perfect, so take some time learn the pros and cons of each.

Journal Citation Report
Thomson Reuter's Journal Citation Reports is home to the well-known *Journal Impact Factor* (JIF), which measures the average number of citations received per paper published in a specific journal in the preceding two years. JIF is helpful if you want to compare different journals in a similar field.

If you're curious about how quickly a journal's articles are cited, check out the journal's *Immediacy Index*. This index measures the number of citations a journal receives in a given year divided by the number of articles the journal published that same year.

Additionally, the report provides the *Cited Half Life* to parse out the citations a journal receives over one calendar year, because the articles cited will vary in age. If a journal's older articles are receiving the majority of the citations, this could indicate the continued influence of those articles in the published literature.

SCImago Journal and Country Rank
A similar report from Elsevier is the SCImago Journal and Country Rank, which includes the *SCImago Journal Rank* (SJR) which takes into account the subject field, quality and reputation of the journal so that you can compare different journals in similar fields. If you want to know how a journal stacks up to journals in other fields, check out the *Source Normalized Impact per Paper* (SNIP), which weights citations a journal receives based on the total number of citations in a subject field.

Reccomendation Engines
For those interested in personalized services, there are tools that make recommendations based on a proposed title and abstract.

The Journal Author Name Estimator (JANE), compares your title or abstract against MEDLINE articles, finding the top 50 articles that are most similar and determines a journal list accordingly.

The JournalGuide has four different options for matching you with journals, including a match based on your title or abstract. Additionally, you can use their Journal name or Publisher name database to locate and compare journals (using the SNIP metric described above), or search for journals based on category and subcategory.

Personal Reveiws
For those who enjoy personal review websites (think Angies List™), perhaps a tool that allows authors to share their experiences will pique your interest. Journalysis is a new tool for authors to share their experiences with academic journals. Their guidelines require contributors to provide facts where possible and to be honest but constructive in their reviews. Additionally, this site also provides metrics and reviews to assist you in your decision making process.

Open Access
The Directory of Open Access Journals (DOAJ) is exactly what it sounds like: an online directory that indexes and provides access to open access, peer-reviewed journals across all areas of science, medicine, technology and more. While DOAJ does not provide a customized ranking, it does have a voluntary editorial staff reviewing journal applications to ensure high quality standards are met by all journals added to the directory.

Quality Open Access Market (QOAM) provides a group of filters to help you narrow your open access journal search. QUAM has created a ranking based on the quality of service (gathered from academic crowd sources, authors and others) which is matched against the cost of publishing to better inform prospective authors.

Already published in a journal, but unsure if you can make your article openly available? Check out SHERPA RoMEO to find your publisher's copyright policies.

Galter Library's Metrics and Impact Core can help you wade through the metrics and reviews to find a list of journals that suits your needs. We can also help your students or class by providing an in-depth review of some of the resources listed here. If you'd like assistance, begin by contacting your liaison librarian. Also, see our guide "From Research to Publication" for more tools and resources.

Please note: Galter Library does not endorse any particular tool mentioned in this article. Instead, we provide ideas, options and guidance on the many tools available.

(Bochner profile continued from page 4)

What types of partnerships are you engaged in across campus?
I have regular interactions with Ikuo Hirano, MD and Nimi Gonsalves, MD, '02 '05 GME, both in Medicine-Gastroenterology and Hepatology, because of their interest and expertise in eosinophilic gastrointestinal disorders. I also share patients that have eosinophilia with Brady Stein, MD, in Medicine-Hematology/Oncology.

Who makes up your research team?
Everyone here is new. First to join my lab at Feinberg was Daniela Janevska, a graduate student from the Driskill Graduate Program in the Life Sciences. Her PhD project focuses on understanding the mechanisms by which engaging Siglec-8 on an eosinophil initiates the intracellular signals that lead to cell death. Second was a postdoctoral fellow, Jeremy O'Sullivan, PhD. He has a strong background in cancer immunology and focuses on using Siglec-8 to target eosinophils and mast cells in various disease conditions, including cancers involving these cells. Third was Yun Cao, a senior research technologist whose main responsibility is to purify human eosinophils from blood of donors.

Next was research associate professor Liliana Moreno-Vinasco, PhD, an expert in mouse models of diseases including asthma. Since we are developing new strains of mice that express Siglec-8, her skills and expertise will be essential in establishing these important models and testing Siglec-8-based treatments.

Finally, two Medical Scientist Training Program graduates, now allergy fellows, have joined my lab. Jen Regan, MD, PhD, is working on a project involving prevention of anaphylaxis with a new drug. Melanie Dispenza, MD, PhD, will be working on another aspect of Siglec-8-based therapeutics. I never imagined this "dream team" coming together so quickly and effectively.

NITRO Study Tracker Basics & Policy Update

A discussion and demonstration on NITRO Study Tracker (formerly eNOTIS) will be provided so that users can become familiar with the most commonly asked about "how-tos" of NITRO Study Tracker (formerly eNOTIS) usage.

These sessions will be held on the fourth Wednesday of every month. Here are details for the next session:

Wednesday, September 23, 2015
10:30 a.m. to 11:30 a.m.

Arthur Rubloff Building, 11th Floor
750 N. Lake Shore Drive
Chicago Campus

Click here to register for a session.

Contact the NUCATS Study Tracker Support team for details.

Funding

Novel Nucleic Acid Sequencing Technology Development

More information

Sponsor: United States Department of Health and Human Services, National Institutes of Health and National Human Genome Research Institute

Submission deadline: October 27

Upper Amount: $2.1 million

Synopsis: This funding opportunity announcement (FOA) solicits R01 grant applications to develop novel technologies that will enable new approaches to DNA and direct RNA sequencing. Applicants may propose to develop novel complete sequencing systems, investigate challenges underlying key novel system components, or propose improvements of at least an order of magnitude improvement to existing systems. Exploration of methods other than those currently in use is highly encouraged. High-risk/high-payoff applications are appropriate to achieve the goals of this FOA.

Integrated Preclinical/Clinical AIDS Vaccine Development (IPCAVD) Program

More information

Sponsor: United States Department of Health and Human Services, National Institutes of Health, National Institute of Allergy and Infectious Diseases

Submission deadline: March 9

Upper Amount: $2.5 million

Synopsis: The goal of this program funding opportunity announcement is to facilitate the translation of sufficiently advanced, innovative and promising vaccine candidates into early clinical testing. The IPCAVD program is designed to enable a multi-disciplinary team of investigators to complete all steps necessary from down-selection of a vaccine candidate through CGMP manufacture/testing/product release and into clinical trials.

View more funding opportunities

High Impact Factor Research

July 2015

Bhattacharya T, Tice DG, **Lingam P, Florek A,** Yates EM, **Weitzman S, Belknap SM**. Disclosure of Boxed Warnings to Research Participants. *JAMA Internal Medicine*. 2015 Jul 27.

Briley WE, Bondy MH, Randeria PS, Dupper TJ, **Mirkin CA**. Quantification and real-time tracking of RNA in live cells using Sticky-flares. *Proceedings of the National Academy of Sciences of the United States of America*. 2015 Aug 4;112(31):9591-9595.

Campbell EM, **Hope TJ**. HIV-1 capsid: the multifaceted key player in HIV-1 infection. *Nature Reviews: Microbiology*. 2015 Jul 16;13(8):471-483.

Dagdeviren C, **Shi Y,** Joe P, Ghaffari R, Balooch G, Usgaonkar K, Gur O, Tran PL, Crosby JR, Meyer M, **Su YW,** Webb RC, Tedesco AS, Slepian MJ, **Huang YG**, Rogers JA. Conformal piezoelectric systems for clinical and experimental characterization of soft tissue biomechanics. *Nature Materials*. 2015 Jul;14(7):728.

Goldberger JJ, Arora R, Green D, Greenland P, Lee DC, Lloyd-Jones DM, Markl M, Ng J, Shah SJ. Evaluating the Atrial Myopathy Underlying Atrial Fibrillation: Identifying the Arrhythmogenic and Thrombogenic Substrate. *Circulation*. 2015 Jul 28;132(4):278-291.

Gordon KB, Duffin KC, Bissonnette R, Prinz JC, Wasfi Y, Li S, Shen YK, Szapary P, Randazzo B, Reich K. A Phase 2 Trial of Guselkumab versus Adalimumab for Plaque Psoriasis. *New England Journal of Medicine*. 2015 Jul;373(2):136-144.

Jain S, Self WH, **Wunderink RG**, Fakhran S, Balk R, Bramley AM, Reed C, Grijalva CG, **Anderson EJ, Courtney DM**, Chappell JD, **Qi C**, **Hart EM,** Carroll F, Trabue C, Donnelly HK, Williams DJ, Zhu Y, Arnold SR, Ampofo K, **Waterer GW,** Levine M, Lindstrom S, Winchell JM, Katz JM, Erdman D, Schneider E, Hicks LA, McCullers JA, Pavia AT, Edwards KM, Finelli L. Community-Acquired Pneumonia Requiring Hospitalization among U.S. Adults. *New England Journal of Medicine*. 2015 Jul 30;373(5):415-427.

Jeong JW, McCall JG, Shin G, **Zhang Y**, Al-Hasani R, Kim M, Li S, Sim JY, Jang KI, **Shi Y**, Hong DY, Liu Y, Schmitz GP, Xia L, **He Z**, Gamble P, Ray WZ, **Huang Y,** Bruchas MR, Rogers JA. Wireless Optofluidic Systems for Programmable In Vivo Pharmacology and Optogenetics. *Cell*. 2015 Jul 30;162(3):662-674.

Miller GE, Yu T, Chen E, Brody GH. Self-control forecasts better psychosocial outcomes but faster epigenetic aging in low-SES youth. Proceedings of the *National Academy of Sciences of the United States of America*. 2015 Jul 13.

Mitragotri S, Anderson DG et al. (including **Mirkin CA**) Accelerating the Translation of Nanomaterials in Biomedicine. *ACS Nano*. 2015 Jul 28;9(7):6644-6654.

Rajaram R, Chung JW, Kinnier CV, Barnard C, Mohanty S, **Pavey ES, McHugh MC, Bilimoria KY.** Hospital Characteristics Associated With Penalties in the Centers for Medicare & Medicaid Services Hospital-Acquired Condition Reduction Program. *JAMA*. 2015 Jul 28;314(4):375-383.

Robert A, Rossow MJ, Hookway C, Adam SA, Gelfand VI. Vimentin filament precursors exchange subunits in an ATP-dependent manner. *Proceedings of the National Academy of Sciences of the United States of America*. 2015 Jul;112(27):E3505-E3514.

Skinner OS, **Kelleher NL**. Illuminating the dark matter of shotgun proteomics. *Nature Biotechnology.* 2015 Jul 8;33(7):717-718.

Strale PO, Duchesne L, Peyret G, Montel L, Nguyen T, Png E, Tampe R, **Troyanovsky S**, Henon S, Ladoux B, Mege RM. The formation of ordered nanoclusters controls cadherin anchoring to actin and cell-cell contact fluidity. *Journal of Cell Biology*. 2015 Jul 20;210(2):333-346.

Taylor JC, Martin HC et al. (including **Langman C**) Factors influencing success of clinical genome sequencing across a broad spectrum of disorders. *Nature Genetics*. 2015 Jul;47(7):717.

Tierney AT, Krizman J, **Kraus N**. Music training alters the course of adolescent auditory development. *Proceedings of the National Academy of Sciences of the United States of America*. 2015 Jul 20.

Wainwright CE, Elborn JS et al. (including **McColley SA**) Lumacaftor-Ivacaftor in Patients with Cystic Fibrosis Homozygous for Phe508del CFTR. *New England Journal of Medicine*. 2015 Jul;373(3):220-231.

White-Schwoch T, Woodruff Carr K, Thompson EC, Anderson S, Nicol T, Bradlow AR, Zecker SG, **Kraus N**. Auditory Processing in Noise: A Preschool Biomarker for Literacy. *PLOS Biology*. 2015 Jul;13(7):e1002196.

Help Feinberg Track Journals

The Feinberg 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

Saturday, September 12

Comprehensive Stroke and Cerebrovascular Conference 2015

The goal of the program is to provide information on the state-of-the-art therapies for the treatment and management of cerebrovascular disease.

Time: 8:00 a.m. to 5:30 p.m.
Location: Off-campus
Sheraton Chicago Hotel and Towers
301 East North Water Street
Contact: deborah.danner@cadencehealth.org
More information

Wednesday, September 16

Proteomic Level Studies of Ion Channel Expression and Regulation in Mammalian Neurons

James S. Trimmer, PhD from the Department of Neurobiology, Physiology and Behavior, University of California, Davis will speak.

Time: Noon to 1:00 p.m.
Location: Ward Building, 5-230 More information
303 E. Chicago Avenue
Contact: liz.barrera@northwestern.edu
More information

Tuesday, September 22

Taking Responsibility for Resposible Conduct of Research

This course is for recipients of National Institutes of Health or other training awards that require training in Responsible Conduct of Research.

Time: 3:30 p.m. to 5 p.m.
Location: McGaw Pavilion, Kellerman Classroom
240 E. Huron
Contact: nucats-ed@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

Help the NIH Simplify Grant Application Instructions
The NIH wants your ideas for developing new ways to make application guides for electronic grant applications more concise and helpful.

They are considering a number of approaches to present the application instructions but want to know specific information most important to you in the current NIH application guides and feedback on other areas. Your suggestions may lead to new strategies in presenting this material to applicants. You have until Sept. 25, 2015 to submit comments to the NIH. All responses must be submitted electronically on the submission website.

Registration Open for 2015 NIH Regional Seminar
Are you a researcher, new or early career scientist, or research administrator interested in learning more about applying for NIH grants, mapping your career with NIH, or managing NIH awards? Meet the experts at the 2015 NIH Regional Seminar in San Diego Oct. 14 to 16. General registration ends Sept. 11.

There will be multiple sessions during this two-day event as well as several optional pre-seminar workshops on Wed., Oct. 14.

Evaluating the Peer Review System
The NIH's Office Extramural Research recently used formal surveys to evaluate peer review participation among PIs who have had active R01 or other RPG funding within the past five years. The survey is part of an ongoing effort to evaluate the level of service that most peer reviewers are willing and able to provide, and how peer review service fits within the scope of reviewers' other professional responsibilities.

The data show that more than percent of mid-career R01 recipients have served as reviewers at least once in the past five years. Furthermore, well over percent of grantees with more than $1 million in funding in the past five years have served.

Check out the complete survey results.

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