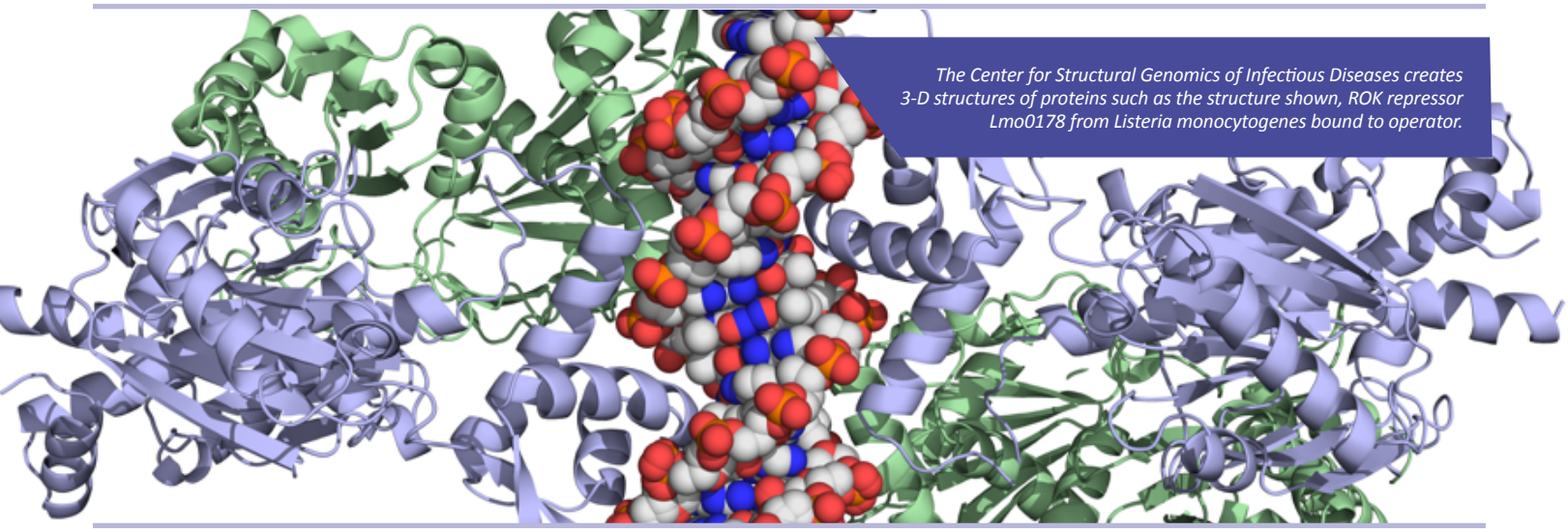
Breakthroughs

Feinberg School of Medicine Research Office

September 2017



The Center for Structural Genomics of Infectious Diseases creates 3-D structures of proteins such as the structure shown, ROK repressor Lmo0178 from Listeria monocytogenes bound to operator.

Satchell to Lead Major Infectious Diseases Grant

By Michelle Mohney

The art (and science) of war against the world's most dangerous infectious diseases is approached by an international team of scientists with an adage from the ancient Chinese military leader Sun Tzu: Know your enemy.

In this case, the Center for Structural Genomics of Infectious Diseases (CSGID), based at Northwestern University Feinberg School of Medicine, and its sister center, the Seattle Structural Genomics Center for Infectious Disease (SSGCID), map the atomic structure of proteins or other molecules that have an important biological role in human pathogens and infectious diseases. Funded by the National Institute of Allergy and Infectious Diseases (NIAID), the CSGID began its third five-year contract on September 1, with new leadership from Feinberg's Karla Satchell, PhD, professor of Microbiology-Immunology.

She will co-direct the CSGID with Andrzej Joachimiak, PhD, director of the Structural Biology Center and the Midwest Center for Structural Genomics at the Argonne National Laboratory. Joachimiak is also a senior fellow of the Institute for Genomics and Systems Biology at the University of Chicago. Wayne Anderson, PhD, professor of Biochemistry and Molecular Genetics, who headed the Center since its 2007 launch, is stepping down, transitioning towards retirement.

The centers are especially focused on emerging and re-emerging infectious diseases in NIAID Category A-C priority lists, which include Ebola, dengue virus and antimicrobial-resistant pathogens, as well as other organisms responsible for dangerous infectious diseases, such as Clostridium difficile and Zika virus.

"I met with all of the Center co-principal investigators and was inspired by their enthusiasm to have an expert in microbiology assume the leadership," said Satchell, who is also a member of the Robert H. Lurie Comprehensive Cancer Center of Northwestern University. "Indeed, I have found over the past year that there is great strength in the structural biology expertise of the Center and an opportunity to revitalize the infectious disease focus."

Satchell explained that Joachimiak will lead technical implementation, while she will focus on streamlining the center administration, broadening outreach and expanding partnerships with the microbiology research community. Among Satchell's primary goals for the CSGID is to integrate advances in next-generation sequencing into the structural biology platforms of the Center.

"In particular, I want the Center to better encompass the changes in technology that have dramatically transformed microbiology and how microbiologists view genomics and proteomics," Satchell said. "For instance, we rarely think in terms of 'species' anymore, but rather how variants within a species can cause a spectrum of disease."

Northwestern Medicine®

(continued on page 2)

CSGID Grant

(continued from cover page)

Next-generation technology allows scientists to sequence a specific bacterial genome from a sample microbial community, or sequence the whole genome of numerous pathogens simultaneously in one run. This genome data is instrumental for examining pathogenesis -- the biological mechanisms of diseases -- identifying drug resistance relationships and investigating a range of mutational studies, including the co-evolution of hosts and parasites, and genetic mutations that increase the virulence of pathogens.

The CSGID currently boasts over 10,000 proteins active its database, according to Satchell. The scientific community requests approximately one-third of the protein targets. Coincidentally, Satchell requested the very first community target solved by the center in 2009 for research related to the activation of a toxin in the bacteria Vibrio cholerae.

"Most recently, we utilized the center to solve the structure of a protein that has potential impact related to cancer treatment," Satchell said.

Consortium members each specialize in a particular part of the assembly line to process and crystallize the proteins and apply computational methodology to produce the structures.

"Northwestern is a major site for protein production, crystallization and structure determination, accounting for about 40 percent of all structures solved," Satchell said.

Satchell's lab is collaborating with CSGID scientists to improve the successful crystallography of proteins that are intrinsically unfolded and fold only upon interaction with ligands -- molecules that bind to a site on a target protein. The advances will make such proteins more viable candidates for successful synchrotron imaging and structure determination.

The new CSGID leadership team also includes investigators from Sanford Burnham Prebys Medical Discovery Institute, University of Calgary, University of Chicago, University of Texas Southwestern Medical Center, University of

Karla Satchell, Ph.D., professor of Microbiology-Immunology, named co-director of CSGID, effective Sept. 1.

Virginia and Washington University School of Medicine. New member, Purdue University, will bring expertise in cryo-electron microscopy, virology and screening of ligands.

One of the primary activities CSGID engages in is using a technique called X-ray crystallography to create 3-D models of proteins' atomic structures at the Argonne National Laboratory's Advanced Photon Source (APS). After a protein is cloned and expressed, it is crystallized and positioned within the path of the APS's synchrotron X-ray beam. Images are generated through diffraction patterns recorded when the intense light bounces off the atoms, giving a detailed view of the position of and distance between atoms.

Protein structures determined by the Center are then deposited into the Protein Data Bank. The CSGID recently achieved the milestone of completing 1,000 structures. "Determining a single protein structure took several years when I was a graduate student," Anderson said. "The CSGID was able to average 100 structures per year."

Recent breakthroughs have been published in journals such *Nature Chemical Biology* and *Antiviral Research*. A recent study published in *Nature Microbiology* examined each of the proteins involved in a previously unknown metabolic pathway in Listeria (the cause of listeriosis, which is the result of eating contaminated food products).

"The structures allowed us to define the activities and biological functions of each protein, which led to the discovery of how the system provided an advantage to Listeria in the competition with other bacteria for nutrients in the human gut, enabling their growth and initiating an infection," Anderson said.

CSGID protein structures are freely available to the research community, in addition to data related to protein-ligand complexes, clones, peptides, purifications and molecular screening of complex proteins. Academic, not-for-profit, industry and government investigators may also request protein gene-to-structure services from the center. Proposals for targets submitted by the community are reviewed and approved by NIAID staff.

If you are interested in submitting a community target request to the CSGID, please visit csgid.org to review NIAID criteria and submission guidelines.

CSGID is funded by the National Institute of Allergy and Infectious Diseases, National Institutes of Health, under contract no. HHSN272201700060C.

CONTENTS

Focus on the Dysfunction of the Basal Ganglia

Mark Bevan, PhD, professor of Physiology

Mark Bevan, PhD, professor of Physiology, leads a lab focused on the basal ganglia, a group of subcortical nuclei. Educated in the United Kingdom, he established an independent laboratory 15 years ago and has trained and mentored more than a dozen graduate students and postdoctoral fellows, with several going on to run their own labs in academia.

Bevan takes training and mentorship as seriously as any aspect of a running a laboratory, with the goal of producing ethical, independent and creative scientists who will make impactful contributions to biomedical research and related fields. His love for research puts him in the lab most days, either performing his own experiments or participating in and supervising the work of others.

Q&A

What are your research interests?
I am interested in the basal ganglia. The basal ganglia are group of subcortical brain nuclei important for habitual, goal-directed and motivated behavior. They're also the sites of dysfunction in psychomotor disorders including Parkinson's disease, Huntington's disease, obsessive compulsive disorder and addiction.

What is the ultimate goal of your research?
I want to determine the mechanisms underlying basal ganglia function and dysfunction and to use this knowledge to better inform patient therapy.

How does your research advance medical science and knowledge?
Our work utilizes animal models of human diseases so we can determine how disease processes affect the normal operation of the basal ganglia. The recent development and application of powerful new tools like optogenetics and chemogenetics to interrogate and manipulate brain microcircuits has been critical in this regard.

Specifically, we focus on the causes of abnormal brain activity and behavior at the molecular, cellular, and circuit levels. We then use this knowledge to try to correct brain activity and rescue function in animal models. Ultimately, we hope this information will be used to design more effective treatments for patients.

Who makes up your research team and what role does each individual play in your research?
My lab members include Jeremy Atherton, PhD, research assistant professor of Physiology; postdoctoral scientists Hong-Yuan Chu, PhD, and Josh Callahan, PhD; and three graduate students from Northwestern University Interdepartmental Neuroscience (NUIN); Eileen McIver, Ryan Kovaleski and Asha Lahiri.

The lab is a meritocracy with minimal hierarchy to promote the best science. Although each scientist has his or her own major project, there is also considerable interaction and collaboration within the group. Each week there is a lab meeting where projects, ideas and opinions are freely exchanged. Ultimately, each member of the team is encouraged to develop expertise in and utilize all the technical approaches that are available in the lab.

What resources at Northwestern have been helpful for your research?
Although our research at Northwestern is well supported by the numerous state-of-the-art cores facilities, the major source of help, guidance and inspiration comes from the outstanding and vibrant neuroscience research community at Northwestern in Chicago and Evanston. Northwestern faculty, post- and pre-doctoral scientists and support staff make this institution a wonderful place to conduct neuroscience research.

How is your research funded?
My funding is mainly from the National Institutes of Health National Institute of Neurological Disorders and Stroke (NINDS). I have a NINDS Javits Neuroscience Investigator Award and I also participate in the NINDS-funded Northwestern University Udall Center of Excellence for Parkinson's Disease Research. My lab's Huntington's disease research is funded by the Cure Huntington's Disease Initiative. We have also been supported by the Parkinson's Disease Foundation.

Incoming PhD Students Arrive on Campus

New PhD students from around the world have arrived on campus, joining the Driskill Graduate Program in the Life Sciences (DGP), Northwestern University Interdepartmental Neuroscience Program (NUIN), Medical Scientist Training Program (MSTP), Clinical Psychology PhD program, Doctor of Physical Therapy (DPT)/PhD program and the Health Sciences Integrated PhD (HSIP) Program. This year DGP welcomes thirty new PhD students from as far away as Puerto Rico, Russia, India and as close as the Midwest. DGP students complete courses and lab rotations during their first year, which allows them to explore various types of research before selecting a dissertation lab and project.

"I love that the DGP program takes professional development seriously," said Hannah Happ, an incoming DGP student. "The program administrators understand that some students will end up in academia, but also that there are so many other options to explore after graduating."

NUIN has 20 incoming students who will rotate in at least three different laboratories and complete coursework before committing to a single lab to conduct thesis research.

MSTP welcomes 15 new students who will earn both their MD and PhD degree 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 includes students coming from competitive universities such as Dartmouth, Harvard and Yale.

Four new students are joining the Clinical Psychology PhD Program, coming from the east and west coasts and as close as Evanston. 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 healthcare settings.

The DPT/PhD (Eng) program welcomed one new student, Marsalis Smith, who will earn both his DPT degree and PhD in biomedical engineering at Northwestern. He will complete two years of engineering school before starting the DPT program at Feinberg. Once he earns his DPT, he will return to engineering to complete his PhD degree. Smith is from Washington D.C. and holds two Bachelor degrees.

First-year graduate students arrive on campus to pursue degrees in a variety of health and medical fields.

Three new HSIP students make up the program's sixth entering class. Unique to Northwestern, HSIP trains students in processes and methodologies in clinical and population sciences through the Institute for Public Health and Medicine. This year's students come from the Philippines, New York and Chicago.

See page 9 for the list of incoming students.

Research Progresses on $3.5M HRSA Grant

Several research projects focused on addressing gaps in the medical care of diverse populations are underway at the Center for Primary Care Innovation (CPCI), one year after it received a $3.5 million, five-year grant from the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services. This was the first major grant awarded to CPCI to support its research activities. The center is part of the Northwestern University Institute for Public Health and Medicine.

The HRSA grant funds the center's Program in Primary Care, Health and Society program and its efforts to test, evaluate and then disseminate new curricula that could help residents and medical students and potentially other health professional trainees be well-equipped to care for patients and the social determinants of health that shape their outcomes.

"In the past year, we've conducted fairly systematic reviews of medical student and residency education related to the social determinants of health and how it's evaluated and taught to those medical learners," said Stephen Persell, MD, MPH, director of the CPCI and associate professor of Medicine in the Division of General Internal Medicine and Geriatrics.

The Center is also providing support for the randomized controlled trial of Feinberg's Education-Centered Medical Home (ECMH). It is a novel, team-based, four-year longitudinal primary care clerkship focused preparing medical students to best understand healthcare disparities in the communities where they serve.

This year the CPCI also provided four pilot grants, with funding from the Global Health Initiative, to Northwestern faculty that address a range of topics related to improving the delivery of primary care.

"The social and economic context in which people live can have huge impact on their health and life expectancy," said Persell. "We are taking a multi-disciplinary approach, giving family medicine, general internal medicine and pediatrics the opportunity to work together in areas where we share overlapping missions."

Other research projects supported by the HRSA award include:

- Social Determinants of Health in Family Medicine Residency
- Promoting Healthcare Equity through Residency Education
- Optimizing Student Learning About the Social Determinants of Health

Hofheimer Prize Rrecipient

Katherine Wisner, MD, the Norman and Helen Asher Professor of Psychiatry and Behavioral Sciences and professor of Obstetrics and Gynecology, was the recipient of the 2017 Hofheimer Prize, the American Psychiatric Association's annual award for research in psychiatry. Wisner is internationally recognized as an expert in the treatment of mood disorders in women, with particular expertise in pregnancy and the postpartum period. Read more.

A Passion for Translational immunology

Ashlee Bell-Cohn, Driskill Graduate Program in Life Sciences

Ashlee Bell-Cohn, a sixth-year student in the Driskill Graduate Program (DGP), studies translational immunology in the laboratory of Praveen Thumbikat, PhD, O'Connor Family Research Professor of Urology and associate professor in the Departments of Urology and Pathology.

Bell-Cohn earned her undergraduate degree in biology, with a minor in chemistry, from the University of Arkansas, Fayetteville. After earning her PhD, she would like to pursue a career in industry science and see her research translate into work that benefits patients.

Q&A

Where is your hometown?
I usually consider Pine Bluff, Arkansas, to be my hometown, but I've called several places home in my life. I was born in the suburbs of Chicago, Melrose Park specifically. I lived in Hoffman Estates until I was six. My mother worked for Sears and got a string of promotions that required us to move around the southern United States for a bit. I have lived in Mississippi, Oklahoma and Arkansas.

What are your research interests?
I am interested in immunology. I think it's amazing that we, as people, have this intricate, highly regulated, balancing act of cells and proteins that allows us to survive in this world. I put a lot of emphasis on balance because for how great and necessary our immune systems are, they can also cause a lot of pain and/or grief. The human immune system is the epitome of a tool. Depending on how or what is controlling it, it can be truly destructive or wonderfully beneficial. I want to help maintain and restore that balance in people with diseases. I think one of the best ways to fix or stop some diseases is to understand what causes or leads to immune dysfunction or to find a way to bolster the immune system. That's why dysregulated immune function, like autoimmunity or hypersensitivity, interests me most.

What exciting projects are you working on?
In my lab, I study how prostate immunology contributes to the development of lower urinary tract symptoms (LUTS) in men. LUTS is typically co-diagnosed and associated with benign prostate hyperplasia. These symptoms are highly prevalent in older men age 50 plus, but can also occur in younger men. Patients tend to struggle with voiding urine, feeling the need to urinate often and ejaculating. Specifically, my project is trying to understand how a particular clinical bacterial isolate leads to the development of a type 2 immune response. Then how that type 2 immune response leads to the development of fibrosis and subsequent LUTS.

What attracted you to the PhD program?
I love that DGP is so interdisciplinary. I consider myself an immunologist, but I have had to become acquainted with microbiology, surgery, histology and microscopy for my project. I remember back when I was applying to PhD programs, I always thought it was weird that I had to choose a particular department or discipline. It was intimidating, like I was choosing the rest of my life with that application. Science is a dynamic field, and it's really hard to make meaningful impacts in the field if you don't look outside your particular discipline. When I came across DGP, it was breath of fresh air. I could explore topics and labs in my first year and really get a feel for what I wanted to study. The fact that DGP is in downtown Chicago didn't impede the program's attractiveness.

What has been your best experience at Feinberg?
The people in my lab are amazing and a very socially active group. One year I proposed we do one of those escape rooms together. Escape rooms are rooms in which you and a group of other people are locked in and you need to figure out how to get out; essentially it's a big puzzle. The particular one we did was zombie-themed and trust me, you haven't lived until you get see your principal investigator jumping out of the way of a fake zombie trying to attack him. That is hands down one of the best experiences I've had here.

What are your plans for after graduation?
Industry science! I will apply for industrial postdoctoral positions after graduation. I still like science and bench work, but I want to be in an environment where I can potentially see my research benefiting the world. I think industry science offers more of the translational focus that I want. Hopefully in industry, I'll get a chance to explore more of the immunology field, like autoimmunity or allergy. Also being a member of and president of a couple of student groups, I've come to find that I like leading people. Maybe I'll look to further my leadership ambitions in industry as well.

Creating Interdisciplinary Teams

Katya Klyachko, PhD, Team Science Program Administrator, Northwestern University Clinical and Translational Sciences Institute

Q&A

Katya Klyachko is a program administrator for the Team Science Program in the Northwestern University Clinical and Translational Sciences (NUCATS) Institute. Klyachko helps faculty members assemble and launch teams by helping to identify possible collaborations, funding opportunities and providing training to maximize efficiency and effectiveness of a team.

Where are you originally from?
I came from Moscow, Russia, in 1993 to pursue my PhD in Medicinal Chemistry at the University of Illinois, Chicago.

What is your educational background?
I have bachelor's degree in chemistry from Moscow State University, a PhD in medicinal chemistry from UIC and a master's degree in clinical research regulation and administration from Northwestern.

Tell us about your professional background.
After completing my postdoctoral work at Northwestern, I worked for five years at a startup company on the development of antibiotics against Methicillin-resistant Staphylococcus aureus. This was my first experience of something akin to team science. There were biologists, medicinal chemists, clinicians, business people and patent lawyers. It was a like a "Tower of Babel" situation. This experience made me realize how important communication is and how it is important to get everyone speaking the same language.

How do you help scientists at the medical school?
The main purpose of the Team Science Program is to help scientists and future scientists understand collaborative research. My hope is that this will help scientists become more experienced and adept at integrating their work with their peers.

What is your favorite part of the job?
As a life-long scientist, coming from a family of scientists, I can honestly say that I believe strongly in team science. I sincerely see the value of working in collaboration, but I also see that this is not something that scientists are necessarily trained in or something that just appears naturally, without good training involved. So, my favorite part of the job is seeing team science in action: watching professional scientists being trained and then being able to put the tools of team science to work for themselves.

What exciting projects are you working on?
We are updating, innovating and improving teamscience.net, the online learning tool for team science. This will enable researchers to get training in team science that they can apply in their own labs and on their projects. Another exciting project we are working on is a series of workshops for groups to enhance their team performance. The workshops are focused on strategic team mapping, team management, conflict resolution and collaboration tools. We are finishing the pilot run and anticipate that these workshops will be offered to the Northwestern community in the near future.

What do you like to do in your spare time?
Between work and managing a highschooler and a preschooler, I don't have that much spare time. But, I love art and painting, so whenever I have time, I am working on my art projects or taking classes at LillStreet art center. I also enjoy taking my kids to the Art Institute.

I love Chicago and honestly believe it's the best city in U.S. I love showing my friends and family around the city and my dream is to become docent for the Chicago Architectural Foundation.

Welcome New Faculty

Talia Lerner, PhD, joins as an assistant professor of Physiology. Her area of expertise focuses on learning how neural circuit principles explain dynamic reward learning and decision-making strategies in response to a changing environment. Ultimately, Lerner and her team want to use these principles to better treat psychiatric disease. Previously, she was a postdoctoral fellow at Stanford University. Lerner earned her bachelor's degree in molecular biophysics and biochemistry from Yale University and her doctorate degree in neuroscience from the University of California-San Francisco. She has published numerous journal articles and is currently the principal investigator on a R00 National Institutes of Health grant. She was also recently awarded the NARSAD Young Investigator Award from the Brain & Behavioral Research Foundation.

Research in the News

***The New York Times*, August 4**
Can You Develop Food Allergies at Any Age
Ruchi Gupta was quoted.

***Crain's Chicago Business*, August 4**
Northwestern to offer home-based health training
Lee Lindquist was quoted.

***The Washington Post*, August 4**
The battle over Essure
Steve Xu was quoted.

***The New York Times*, August 7**
For Cosmetics, Let the Buyer Beware
Steve Xu was quoted.

***Huffington Post*, August 7**
Breathing Rhythm Found to Affect Memory and Fear
Christina Zelano was quoted.

***HealthDay*, August 14**
When Stress Hormone Falters, Your Health May Suffer
Emma Adam was quoted.
► This research was also featured in *U.S. News & World Report*

***The Washington Post*, August 14**
This scientist hopes 3-D-printed ovaries will help women have babies
Teresa Woodruff was quoted.

***Crain's Chicago Business*, August 22**
Northwestern doubles down on neurology
Roger Stupp was quoted.

***PBS*, August 23**
Chicago's gun violence crisis is also a mental health crisis
Inger Burnett-Zeigler was quoted.

***Associated Press*, August 29**
Medicare to foot the bill for treadmill therapy for leg pain
Mary McDermott was quoted.
► This research was also featured in *Chicago Tribune, The New York Times, The Washington Post* and *ABC News*

More media coverage available online.

Northwestern University
NUCATS
Clinical and Translational Sciences Institute

NUCATS Corner

New Resource for Multi-Center Clinical Trials, Studies

NUCATS is pleased to share a new resource available to faculty investigators who are developing and/or leading multi-center clinical trials and studies: the Trial Innovation Network (TIN). TIN is a new collaborative initiative from the National Center for Advancing Translational Sciences at the NIH. The goal of the network is to execute multi-center clinical trials and studies better, faster and more cost-efficiently by building on local NUCATS resources and leveraging the expertise, skills and knowledge of the 64-institution Clinical and Translational Science Award program consortium. The local NUCATS TIN liaison team will connect you to the national Trial Innovation Network. Opportunities for Northwestern scientists include proposing a trial you design to run across multiple sites in this network, or being a site investigator for a trial initiated at another TIN site.

TIN services for both design and operation of clinical trials include:

- Disseminating information about trials across the network
- Operationalizing central institutional review board services
- Operationalizing standard agreements
- Conducting electronic health record-based cohort assessments
- Recruitment feasibility assessment, plans and materials
- Community engagement consultation studios and more!

Services may be provided in collaboration with other NUCATS resources (Center for Clinical Research, Northwestern Medicine Enterprise Data Warehouse, Biostatistics Collaboration Center).

To learn more about TIN services, click here.

Sponsored Research

PI: John Kalapurakal, MD, Professor of Radiation Oncology and Neurological Surgery

Sponsor: National Cancer Institute

Title: "Retrospective NCI Phantom-Monte Carlo Dosimetry for Late Effects in Wilms Tumor"

Radiation therapy (RT) is the most important contributor to late toxicity in children. Unlike in adults, there is not much data on three-dimensional (3-D) normal tissue radiation tolerance in children. In this retrospective dosimetry study of target organs for late effects among Wilms tumor patients using NCI 3-D phantom Monte Carlo dosimetry models, Kalapurakal's team aims to improve the knowledge of radiation tolerance and help reduce the incidence of RT induced late toxicity and minimize their adverse impact on current and future childhood cancer survivors.

This study will be performed on matched phantoms of all 5,000 children with Wilms tumor (WT) who received RT on five National Wilms Tumor Study (NWTS) protocols between 1969 to 2002. The high survivorship (90%) of WT and the many advantages of the NWTS late effects database makes this an ideal platform for a detailed dosimetry study of late effects of therapy.

Read more about this project.

PI: Swati Kulkarni, MD, associate professor of Surgery in the division of Breast Surgery

Sponsor: National Cancer Institute

Title: "Evaluating the protective effect of a tissue selective estrogen complex (TSEC) in women with newly diagnosed ductal carcinoma in situ"

Tissue Selective Estrogen Complexes (TSECs) are a new class of compounds that were originally developed to improve symptoms of menopause in postmenopausal women. The recent discovery that TSECs can stop or even potentially reverse the development of pro-tumorigenic phenotypes in the breast epithelium and stroma has opened the possibility of a new therapeutic approach in women with ductal carcinoma in situ to prevent progression to invasive breast cancer.

Based on these preliminary data, Kulkarni's team hypothesizes that the TSECs, conjugated estrogens (CE) (Premarin®) and bazedoxifene (BZA) — CE/BZA — will have an anti-tumorigenic effect in the human breast. As a non-obligate precursor to IBC, ductal carcinoma in situ constitutes an ideal disease state to test their hypothesis.

Read more about this project.

Increase to Feinberg Seed Fund Grants

Effective immediately, Feinberg is increasing the award amount of its seed fund grant program from $15,000 to $30,000. These funds are intended for application preparation to initiate new Multi-Investigator Program Project or Center Grant applications involving Feinberg faculty. The funds support new applications, preferably to the National Institutes of Health. There is an expectation of casting a wide net, such that research projects ought to involve at least two faculty members from outside the home department of the principal investigator, which may include Evanston. Read more about this program.

New Students

(continued from page 4)

Welcome new PhD students in these programs:

Driskill Graduate Program in the Life Sciences

Kishore Anekalla
Miranda Becker
April Bell
Young Rock Chung
Brandi Cobe
Garrett Eickelberg
Julie Fischer
Hannah Happ
Amanda He
Austin Holmes
Kennen Hutchison
Michael Kahl
Corey Kennelly
Sakshi Khurana
Connor Lantz
Sizhe Liu
Alberto Lopez
Akanksha Mahajan
Nikita Mani
Valentina Medvedeva
Khyati Meghani
Alina Murphy
Elan Ness-Cohn
Nicole Palacio
Maria Pereira Luppi
Craig Rathwell
Emma Schuster
Carly Weddle
Yaqi Zhang
Bin Zheng

Northwestern Interdepartmental Neuroscience Program

Amira Affaneh
May Ninghe Cai
Daayun Chung
Shiloh Cooper
Sara Dunlop
Dennis Echevarria
Rogan Grant
Devon Greer
Ashley Holloway
Taylor Jefferson
Gabriela Lopez
Sarah Lurie
Mauricio Medina
Kayla Miguel
Sam Minkowicz
Miranda Munoz
Oscar Ramos
Lauren Strohbehn
Hongkai Wang

Medical Scientist Training Program

David Amici
Bettina Cheung
Simrita Deol
Michael Drumm
Zachary Jessen
Stephen Lander
Sage Morison
Krishna Paranandi
Qiuyin Ren
Samantha Schroth
Nick Shawen
Ariel Thames
Elizabeth Tsui
Andreas Tzavelis
Vivian Zhang

Clinical Psychology PhD Program

Alexandra Morford
Amanda Nili
Geneva Jonathan
Matthew Olonoff

Health Sciences Integrated PhD Program

Adovich Rivera
Iva Terwilliger
Rick Weinmeyer

DPT- PhD (Eng)

Marsalis Smith

Funding

Burroughs Wellcome Fund: Career Awards for Medical Scientists

More information

Sponsors: Burroughs Wellcome Fund

Submission deadline: October 3

Amount: $700,000 over five years

Synopsis: The Career Awards for Medical Scientists (CAMS) is a highly competitive program that provides awards for physician-scientists who are committed to an academic career; the goal of the award is to help bridge advanced postdoctoral and/or fellowship training and the early years of faculty service. Proposals must be in the area of basic biomedical, disease-oriented or translational research.

Mitochondrial Biomarkers for Parkinson's Disease

More information

Sponsors: Michael J. Fox Foundation for Parkinson's Research

Submission deadline: September 27

Amount: Up to $200,000

Synopsis: The Michael J. Fox Foundation for Parkinson's Research seeks to support one-to-two year grants that will develop new or improved tools to identify mitochondrial biomarkers for Parkinson's disease (PD). The purpose of the Mitochondrial Biomarkers RFA is to seek proposals that focus on human biospecimen-derived data to identify relevant PD biomarkers that would inform disease diagnosis, disease progression, patient stratification and/or pharmacodynamic readouts.

Damon Runyon Physician-Scientist Training Award Overview

More information

Sponsors: Damon Runyon Foundation Cancer Research Foundation

Submission deadline: December 1

Amount: $460,000

Synopsis: The Foundation established a program designed to recruit outstanding U.S. specialty board-eligible physicians into cancer research careers by providing them with the opportunity for a protected research training experience under the mentorship of a highly qualified and gifted mentor after they have completed all of their clinical training.

View more funding opportunities

Alternative Metrics to Tell Your Story

Alternative Metrics

Perhaps you've heard of alternative metrics. Perhaps you haven't. But one thing is certain — alternative metrics are generating buzz in the scientific community and that buzz seems to be getting louder. Commonly called altmetrics, alternative metrics are a relatively new and rapidly-growing set of metrics intended to analyze scholarly output online. Traditional bibliometrics have long played a role in promotion and tenure and include benchmarks such as h-index, impact factor and citation counts. Altmetrics track your research on the social web through media coverage, citations in policy documents, Twitter mentions, and many other outlets. Additionally, altmetrics track more than journal articles, and can also gather data on books, datasets, posters, videos and more.

Why Use Alternative Metrics?

The world of scholarly publishing is slow and it can take two to three years for a paper to accrue citations. Likewise, the h-index is a time-dependent metric that can negatively affect early-career scientists and scientists in fields that don't cite prolifically. A big advantage of alternative metrics is that they are updated in real-time — you don't have to wait two years to see the dissemination of your work. Rather, you can see how other scientists, policymakers, and the public are engaging with your work today. Alternative metrics measure attention and are potential indicators for impact; they can complement traditional bibliometrics in your dossier and help tell your science story in a compelling way.

Finding Alternative Metrics

There are a few tools you can use to track your alternative metrics:

Altmetric Bookmarklet: This free tool from Altmetric.com allows you to view altmetrics at the click of the button. Easy to install and use, this is a low-investment tool that is a nice introduction to alternative metrics.

Impact Story: Anyone with an ORCID identifier can freely create an Impact Story profile. Geared toward individuals, Impact Story serves as a dashboard to compile altmetrics from all over the web and contextualizes the metrics in creative ways.

PlumX via Scopus: Scopus is a citation database licensed by the Galter Health Sciences Library & Learning Center that you can access via the library's website. Recently, Scopus integrated PlumX Metrics into their interface. Now, when you search for a document, you can easily view altmetrics alongside traditional bibliometrics.

Publisher Websites: Many publishers such as SpringerNature and Wiley, are now incorporating altmetrics into their websites. The data usually come from Altmetric or PlumX Metrics.

Telling Your Story with Alternative Metrics

You can incorporate alternative metrics into your science story in a variety of ways. If you're looking for a visual representation of altmetrics for your website or blog, consider embedding a colorful badge from one of the aforementioned altmetric tools.

Altmetric.com donut

PlumX Metrics plum print

Or, you can use altmetrics directly in your narrative. You can highlight both qualitative and quantitative altmetric information in the Media Coverage section of your CV, the Critical Reference Form of your dossier or in an NIH biosketch. Below are a few examples:

- This paper was featured in over 80 news outlets worldwide including *NPR*, *The New York Times* and *BBC News*.
- This paper was tweeted over 100 times in more than 15 countries, including by a women's health center in South Africa that disseminates information to our target population.
- This paper is in the 99th percentile of all *JAMA* papers tracked by Altmetric.com.

Learn More

The Metrics and Impact Core housed in Galter Health Sciences Library & Learning Center can help you communicate your work using traditional bibliometrics and alternative metrics. Librarians can present to your department or meet for one-on-one consultations. Please contact Patty Smith to learn more about using these metrics to tell your science story.

High Impact Factor Research

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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

Wednesday, September 13

Stanley Manne Children's Research Institute Fall 2017 Seminar Series

Youyang Zhao, PhD, of the Stanley Manne Children's Research Institute, Ann & Robert H. Lurie Children's Hospital of Chicago and Feinberg to present "Endothelial Regeneration and Resolution of Inflammation."

Time: Noon to 1:00 p.m.

Location: Wolfson Lecture Hall, 2430 North Halsted St, Chicago

Contact: d-lilly@northwestern.edu

More information

Friday, September 15

Friday Research Conference

Max Seibold, PhD, National Jewish Health, will present.

Time: Noon to 1 p.m.

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

Contact: justin.phillips@northwestern.edu

More information

Thursday, September 28

2017 TRIST Symposium

The focus of the program is "Enabling Immune Checkpoint Blockade in Cancer Therapy."

Time: Noon to 5:00 p.m.

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

Contact: cancer@northwestern.edu

More information

NIH News

Updates to the LPR Program

The NIH Loan Repayment Programs (LPRs) online application opened September 1 and will remain open until November 15. The LRPs are a set of programs established by Congress and designed to recruit and retain highly qualified health professionals into biomedical or biobehavioral research careers. The LRPs counteract financial pressure by repaying up to $35,000 annually, over a two-year contract, of a scientits' qualified educational debt in return for a commitment to engage in NIH mission-relevant research. Updates to the program, such as a new online dashboard and a LRP ambassadors program have recently been put into place. Read more about improvements to the program.

Single IRB & Exceptions Process Webinar

Mark your calendar for October 18, from 2:00 p.m. to 3:30 p.m., to learn more about the implementation of the NIH Single IRB policy. The purpose of this webinar is to acquaint applicants and officers with the policy.

Participants will:

- Learn how to implement the NIH single IRB policy
- Understand the expectations for the NIH single IRB policy
- Become familiar with the process to request exceptions to the policy
- Understand the responsibilities of the IRB, the investigator and the institutions in implementing the NIH single IRB policy

Register now

Happy Birthday, NIH!

In August of 1887, the NIH started out in a one-room laboratory, established under Dr. Joseph J. Kinyoun at the Marine Hospital, Staten Island, N.Y., for research on cholera and other infectious diseases. Now, 130 years later, there are more than 20,000 employees working to enhance health, lengthen life and reduce illness and disability. Browse the NIH timelines.

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