Breakthroughs

Feinberg School of Medicine Research Office

April 2019



Exploring Food Allergy Origins and Treatments

By Emily Ayshford

Food allergies are a growing problem, affecting 8 percent of children and 10 percent of adults.

Despite the prevalence — and despite the life-threatening nature of many of these allergies — the field still has many open questions regarding disease origin and potential treatment.

Feinberg investigators are now conducting basic science research, epidemiological studies and drug trials of new therapies to uncover the breadth of the problem, understand the basic cellular pathways and develop new avenues of treatment.

Understanding the Problem

When she began her career 15 years ago, <u>Ruchi Gupta, MD,</u> <u>MPH</u>, professor of <u>Pediatrics</u> and director of the Science and Outcomes of Allergy and Asthma Research (SOAAR) Program, found the field had limited epidemiological information on the prevalence, severity and types of food allergies. She and her collaborators set out to change this. In recent years, she conducted surveys of more than <u>40,000 adults</u> and <u>40,000</u>



<u>children</u> that showed just how widespread and problematic food allergies are; the studies were published in *JAMA Network Open* and *Pediatrics* respectively.

Gupta and her team found that one in 13 children have a food allergy or 8 percent (with the most common allergens being peanut and milk). Gupta was surprised by the prevalence, not only of adults with food allergies (more than 10 percent), but of adults who reported having a food related condition (20 percent).

The study data indicated that the most prevalent food allergens among U.S. adults are shellfish (affecting 7.2 million adults), milk (4.7 million), peanut (4.5 million), tree nut (3 million), fin fish (2.2 million), egg (2 million), wheat (2 million), soy (1.5 million) and sesame (.5 million). Surprisingly, half of those with a food allergy reported developing it as an adult.

"With so many adults developing new allergies as adults, we need to understand this new phenomenon," Gupta said. "By studying adults, we can learn more about potential triggers to allergy development in both adults and children."

Mitigating Racial Disparities

Gupta and her collaborators have also received a <u>grant from</u> <u>the National Institutes of Health</u> to study racial disparities among children with food allergies, especially between African-American and white children. At four sites around the country, investigators will study a wide range of issues among 1,000 food-allergic children, including their food allergy types, presentations, development and outgrowth, skin and gut microbiome, genomics, daily life issues, psychosocial factors and more.

A previous study conducted by Gupta showed that while African-American children had similar food allergy rates to white children, they had half the chance of being diagnosed. "We need to understand how best to care for all our patients and to understand potential difference in food allergy presentation and diagnosis by many factors including race, ethnicity and SES," she said.

Developing New Therapies

Peanut allergy is the most common food allergy in the U.S., affecting more than 1.6 million children, and it accounts for the majority of deaths related to food allergy. Currently, there are no approved treatments. The standard of care has been a strict elimination diet and timely administration of rescue medications in case of an allergic reaction from accidental exposure.

But a recent clinical trial <u>published</u> in the *Journal of the American Medical Association (JAMA)* showed that immunotherapy could be a real option for those allergic to peanuts. A recent clinical trial at Ann & Robert H. Lurie Children's Hospital of Chicago reported that 35 percent of children who wore a peanut patch for one year as immunotherapy were able to tolerate a significantly higher dose of peanuts before experiencing a reaction.

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April 2019

"The positive results are reassuring, suggesting that the peanut patch could reduce severe allergic reactions from accidental exposure to small amounts of peanut," said study author <u>Jacqueline Pongracic</u>, <u>MD</u>, head of Allergy and Immunology at Lurie and professor of Pediatrics and Medicine at Feinberg. "While not a cure, this kind of protection would make a huge difference in the lives of children with peanut allergy."

A Cancer Drug, Repurposed

Bruce Bochner, MD, Samuel M. Feinberg Professor of Medicine in the Division of <u>Allergy and Immunology</u>, looked outside the field to an unlikely source for new treatment and prevention options: a chemotherapy drug. The oral drugs, ibrutinib and acalabrutinib, work by blocking Bruton's tyrosine kinase (BTK), an enzyme inside of cells that helps B-cells grow and proliferate. These drugs were designed to treat B-cell lymphomas and other cancers, but BTK also plays a role in allergic cell signaling, so the theory was that BTK inhibitors would block allergic reactions.

"We thought, is there a new way that we can target pathways or receptors that might not just have clinical relevance and therapeutic benefit, but also teach us how allergic responses work?" Bochner said.

In a recent study, <u>published</u> in the *Journal of Allergy and Clinical Immunology*, <u>Melanie Dispenza</u>, <u>MD</u>, <u>PhD</u>, instructor of Medicine, who works with Bochner, gave patients with peanut and tree nut allergies a seven-day course of ibrutinib. After two days, the patients had an average 77 percent reduction in the size of their food allergy skin test, with 44 percent becoming negative. Similar testing on blood cells involved in allergy also became negative.

Side effects are minimal, and Dispenza and Bochner are now studying these drugs in cell cultures and mouse models to further define their anti-allergy effects. They say it's possible that this drug could be used short-term by patients in situations where they may be at higher risk for having a food allergy reaction, like when traveling in a foreign country. Patients could even use the therapy to take a life-saving drug to which they are allergic.

"There is currently no known therapy to prevent allergic reactions," Dispenza said. "This could potentially be a paradigm-shifting discovery, especially if we can prevent anaphylaxis."

Hear This

Subscribe to our podcast and rate it <u>here</u>.

Listen to Gupta's podcast episode about food allergies <u>here</u>.



Celebrating Research Day 2019 Winners

Basic Science

First place: Vania Vidimar, PhD, postdoctoral fellow, "RAS Processing as a Strategy to Inhibit RAS-driven Tumors" Second place: Jack Shireman, research associate, "Single Cell Nucleosome Occupancy and RNA Sequencing on recurrent GBM"

Third place: Yaqi Zhang, a second-year student in the Driskill Graduate Program in Life Sciences (<u>DGP</u>), "DOT1L, a New Target in Ovarian Cancer Stem Cells."

Clinical Research

First place: <u>Vishal Kothari, PhD</u>, research assistant professor of Urology, "Investigating a Novel Class of Aggressive, Low AR Active Pca."

Second place: <u>Yinan Zheng, PhD</u>, research assistant professor of <u>Preventive Medicine</u> in the Division of <u>Cancer Epidemiology</u> and <u>Prevention</u>, "Elevated Cumulative Blood Pressure May Lead to Irreversible Epigenetic Aging."

Third place: Patrick Campbell, MD, a second-year resident in internal medicine, "Association Between Plasminogen Activator Inhibitor-1 and Non-Alcoholic Fatty Liver Disease."

Public Health & Social Sciences Research

First place: Sadiya Khan, '09 MD, '14 MSc, '10 '12 '16 '17 GME,

assistant professor of <u>Medicine</u> in the Division of <u>Cardiology</u> and of Preventive Medicine, "Cardiovascular Health Trends (1999 to 2014) and Projections to 2050."

Second place: Tami Bartell, MPH, research coordinator, "Elder Suicides in Illinois, 2015: Illinois Violent Death Reporting System."

Third place: Leah Rethy, visiting scholar, "Racial Disparities in Heart Failure Prevalence in US Adults: 1999-2016."

Education Research

First place: Rhami Khorfan, MD, a second-year fellow in the Surgical Outcomes and Quality Improvement Center (SOQIC), "Long-term Effects of Flexible Duty Hour Policies on Surgery Residents."

Second place: Jordan Sell, a second-year medical student, "Implementing an Ultrasound Guided IV Training Curriculum for Hospital Nurses."

Third place: <u>Blair Golden, MD</u>, instructor of Medicine in the Division of <u>General Internal Medicine and Geriatrics</u>, "Continuity Improves Primary Care Training and Mitigates Burnout."

Medical Women Faculty Organization Founders Award

Basic Science: Farners Amargant, PhD, postdoctoral fellow, "The Ovarian Hyaluronan Network is Dysregulated with Advanced Reproductive Age."



Clinical, Public Health and Education: Yulia Lagoutina, graduate student, "Cortical Atrophy as Predictor of Recall Change in Aging Women."

ARCC Community-Engaged Research Partnership Award

This award went to Building Capacity for a Community-Based Research Partnership to Optimize Physical Activity in Lung Cancer Survivors (Be-Lung). Be-Lung is an intervention to increase physical activity among lung cancer survivors in Chicago. It is a partnership between <u>Shirley Ryan AbilityLab</u>, the <u>Robert H. Lurie Comprehensive Cancer Center of Northwestern</u> <u>University</u> and Gilda's Club Chicago, a community organization that supports individuals and their families and friends whose lives have been impacted by cancer.

Tripartite Legacy Faculty Prize

Kathleen Green, PhD, the Joseph L. Mayberry, Sr., Professor of Pathology and Toxicology, associate director of Basic Science Research at the Robert H. Lurie Comprehensive Cancer Center of Northwestern University and a professor of <u>Dermatology</u>. Watch video

Medical Faculty Council Mentors of the Year

<u>Tamara Isakova, MD, MMSc</u>, director of the <u>Center for</u> <u>Translational Metabolism and Health</u> in the Institute for Public Health and Medicine and an associate professor of <u>Medicine</u> in the Division of <u>Nephrology and Hypertension</u>.

John Varga, MD, director of the <u>Northwestern Scleroderma</u> <u>Program</u>, the John and Nancy Hughes Distinguished Professor of Rheumatology and a professor of Medicine in the Division of <u>Rheumatology</u>, <u>Dermatology</u> and <u>Pharmacology</u>.

Watch video

Gleaning Pathology From Those Who Have Passed Eileen Bigio, MD, Paul E. Steiner Research Professor of Pathology



Eileen Bigio, MD, the Paul E. Steiner Research Professor of <u>Pathology</u>, investigates a variety of neurodegenerative diseases.



What are your research interests?

My main research interest is the field of neurodegenerative disease. For 20 years, I have engaged in studies of frontotemporal lobar degeneration (FTLD), carefully distinguishing pathologic subtypes, exploring the relationship of these subtypes with various clinical presentations, and discovering subtypes not previously recognized.

FTLD is present in up to 30 percent of cases of amyotrophic lateral sclerosis (ALS) and there are overlapping pathologic entities that present either with cognitive impairment or with a movement disorder.

Northwestern has been a perfect environment for me to study these diseases, with resources such as the National Institutes of Health-funded <u>Mesulam Center for Cognitive</u> <u>Neurology and Alzheimer's Disease</u>, the <u>Les Turner ALS Center</u> and the <u>Parkinson's Disease</u> and <u>Movement Disorders Center</u>.

What is the ultimate goal of your research?

The ultimate goal of all studies of neurodegenerative diseases is to prevent them, cure them or delay onset long enough to decrease the number of individuals affected.

To date, pathologic evaluation at autopsy is the gold standard of elucidating the underlying pathophysiologic condition of a patient with neurodegenerative disease. Imaging modalities with biomarkers for amyloid and tau proteins or cerebrospinal fluid biomarkers for tau and amyloid are excellent, but not perfect, at identifying a patient with Alzheimer's disease prior to death.

But, there are no biomarkers for identifying a patient with FTLD. In addition, the brains of patients who died of a neurodegenerative condition often have multiple pathologies. To date, it is not possible to identify multiple pathologies by the use of biomarkers prior to the patient's death.

In order for clinical trials of potential therapeutic interventions to be carried out effectively and the results interpreted most accurately, we must develop this capability. The brain autopsy has been instrumental in identifying this fact: Most neurodegenerative brains do not simply have one underlying pathologic condition, and treatment of one pathologic condition may not be effective treatment for the patient.

How did you become interested in this area of research?

I became interested in Alzheimer's disease when I was a pathology resident. The family of a wealthy deceased woman had been excluded from her will, and so they had her body exhumed for a brain autopsy to prove she had dementia. It was so dramatic!

Later, I became intrigued by the more uncommon forms of dementia, and published the first paper showing that one variety, called FTLD-U, was the single most common form of FTLD. Most cases of FTLD-U are now known to be FTLD-TDP, still the single most common form of FTLD.

Understanding the Effect of Adverse Early Experiences on the Developing Brain

Christine Paula Lewis-de los Angeles, Medical Scientist Training Program



C. Paula Lewis-de los Angeles, a seventh-year student in the Medical Scientist Training Program (MSTP), studies the relationship between perinatally-acquired HIV and brain structure in adolescence in the laboratory of Lei Wang, PhD, associate professor of Psychiatry and Behavioral Sciences and Radiology.

Q&A

Where is your hometown?

I was born in New York City and my family moved to Connecticut when I was young. Since then, I've lived all over the United States, including California and Massachusetts, and have spent some time living abroad, in Geneva, Switzerland. I have lived in Chicago for the past seven years.

What are your research interests?

I am fascinated by all aspects of the brain and have focused on studying the effect of adverse early experiences, biological and environmental, on developmental trajectories of the brain using neuroimaging in healthy and clinical populations. My research has focused on studying structure and function of the brain at both the individual region and network levels.

What exciting projects are you working on?

For my PhD, I worked in the Neuroimaging and Applied Computational Anatomy Laboratory directed by Lei Wang, PhD. Specifically, I investigated the relationship between perinatallyacquired HIV and brain structure in adolescence. I found that even if children had well-controlled perinatally-acquired HIV, there were lasting cognitive effects in adolescence, likely due to infection of the brain during a critical period of development. This work was done in collaboration with faculty from the Division of Pediatric Infectious Diseases at the Ann & Robert H. Lurie Children's Hospital of Chicago, as well as the NIH Pediatric HIV/AIDS Cohort Study (PHACS). I was supported through individual fellowships, including an F30 research fellowship award for MD/PhD students through the National Institute of Child Health and Human Development (NICHD) as well as the Dr. John N. Nicholson Fellowship for Northwestern PhD students.

What attracted you to the MD/PhD program?

I was attracted to Northwestern's MD/PhD program because of its ability to train well-rounded physician-scientists who are strong both clinically and scientifically. I also was drawn to the

interdisciplinary approach to neuroscience in the <u>Northwestern</u> <u>University Interdepartmental Neuroscience</u> (NUIN) PhD program.

I also found that Chicago is a wonderful place to train. While the summer is lots of fun with the lakefront and almost daily festivals in various neighborhoods in Chicago, the winters in Chicago also offer their own charm, including Lincoln Park Zoo's ZooLights, ChriskindImarket, as well as the Maggie Daley Park ice skating ribbon.

What has been your best experience at Feinberg?

One of my favorite experiences at Feinberg was serving as both a student director and mentor for a volunteer program called PRISM, which stands for <u>Promoting Inner-City Youth in</u> <u>Science and Medicine</u>. Every other Tuesday, MSTP students meet with high school students at one of the Boys & Girls Clubs in Chicago to teach them about science and medicine through experiments and clinical cases. I have also enjoyed being involved with various organizations encouraging young women to pursue careers in STEM fields.

How would you describe the faculty at Feinberg?

The faculty at Feinberg have been extremely supportive of me as an aspiring physician-scientist and parent. They have been there for me through both failed and successful experiments, every grant submission, challenging and rewarding patient cases on the wards, as well as through the milestones of my growing family. I know these mentoring relationships will last a lifetime.

What do you do in your free time?

In my free time, I enjoy spending time with my husband and my two-year-old daughter. Seeing my daughter grow and develop sparks of new understanding every day brings me joy. Together, as a family, we often walk from our apartment in Streeterville to local farmer's markets, flower shops, museums and libraries. We also spend a lot of time in the kitchen at home, trying out new recipes for fun ice cream flavors or bread. Otherwise, I like to spend my time knitting, reading memoirs and solving puzzles.

What are your plans after graduation?

I am starting residency at the Brown University Triple Board Program, which is an interdisciplinary program that will train me to be a pediatrician and a child psychiatrist at the same time. I plan to continue my career as a physician-scientist, devoting time to both patient care and research. In the future, as a physician-neuroscientist with triple board training, my clinical and research focus will be on neurodevelopmental populations, adverse early experiences and brain development.

Connect with Paula on LinkedIn.

Using Financial Systems and Data to Analyze and Streamline Operations

Kevin Burrows, Executive Director of Finance, Dean's Administration





Where are you originally from?

I was born in the suburbs of Chicago, but grew up in Pennsylvania Dutch Country outside of Philadelphia. Even though I have a beard, no, I am not Amish. I have been living and working in the Chicago area since 2007.

What is your educational background?

I studied finance at the Fisher College of Business at the Ohio State University. I'm currently enrolled in the healthcare leadership program, which is a partnership between the Kellogg School of Management and Northwestern Medicine.

Please tell us about your professional background.

My career started in IT consulting, but quickly pivoted into the world of healthcare finance. I have spent the last 10 years working in various roles at NM, holding seven different roles in that time span. Every role I have held while at Northwestern has been focused on operations and the financial landscape of physician groups. I've had the opportunity to work in many different areas within NM's finance portfolio, including accounting, budget and planning, decision support, business development, physician compensation and financial operations. Many of these roles have been focused on our academic physicians who also have faculty appointments at Feinberg. I started my position at the Feinberg School of Medicine at the beginning of March.

Why do you enjoy working at Northwestern?

It goes without saying how rewarding it is to be part of a premier integrated academic health system that is at the forefront of scientific discovery and patient care. What truly makes Northwestern great, though, is the quality of the people. Throughout my career at Northwestern, the colleagues I've worked with have always made our "patients first" mentality a top priority and have strived for excellence in all that they do. Northwestern has also proven to be an institution that encourages and empowers its staff to be creative and develop novel approaches to achieve better results, which makes working here tremendously fulfilling.

What is your favorite part of the job?

I enjoy using financial data and systems to help analyze and streamline operations, leading to more informed decisionmaking, improved efficiencies and ultimately better results. Applied within the context of the medical school, the goal is to maximize available funding for medical student education, while simultaneously cultivating high-impact research.

What exciting projects are you working on?

Efforts are currently underway to develop and refine the Feinberg School of Medicine's long-range financial plan, which provides a five-year prospective roadmap of the anticipated financial picture for the school. This is exciting work as it involves thinking through the overall strategic direction and goals of the school, determining projects and enhancements that will help achieve those goals, and then calculating the costs and locating the funding sources that will help pay for it. The resulting plan will help inform targets for the annual budget cycle, which kicks off in spring.

What do you like to do in your spare time?

I enjoy spending time with my wife and two-year-old daughter. I also like to unwind by listening to podcasts while on long walks with my dog, cycling along the lake and playing volleyball a couple times a week. My wife and I are fans of live music and like to go to concerts as often as we're able. I also like going on backcountry backpacking trips with friends and am trying to visit as many national parks as I can.

Anything else we should know about you?

I have an extensive collection of extreme hot sauces and have yet to find one I deem "too spicy." I was president of my high school table tennis club. I'm a fan of all sports and, in particular, am a big supporter of the Liverpool Football Club, the Philadelphia Eagles and, of course, the Ohio State Buckeyes.

Connect with Kevin on LinkedIn.

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Research in the News

U.S. News & World Report, March 4

Acne Drug Accutane May Not Depress Mood After All Bethanee Schlosser, MD, PhD, was quoted.

► This research was also featured in *WebMD* and *HealthDay*.

WTTW News, March 7

<u>Report: Young Black Men at High Risk of Homicide by Firearm</u> Maryann Mason, PhD, was quoted.

WTTW News, March 11

FDA Approves Ketamine Nasal Spray as New Depression Treatment

Danesh Alam, MBBS, was quoted.

Associated Press, March 15

Are Eggs Good or Bad For You? New Research Rekindles Debate

Norrina Allen, PhD, was quoted.

This research was also featured in The New York Times, National Public Radio, The Washington Post, USA Today, TIME, Reuters, CNN, HealthDay and others.

HealthDay, March 15

Funding Gap Leaves Women Scientists at a Lifelong Disadvantage: Study

Teresa Woodruff, PhD, was quoted.

This research was also featured in U.S. News & World Report.

National Public Radio, March 15

Many Guidelines for Heart Care Rely on Weak Evidence Robert Bonow, MD, was quoted.

Crain's Chicago Business, March 20

<u>Valve Replacement Could Replace Open-Heart Surgeries</u> S. Chris Malaisrie, MD, was quoted.

More media coverage available online.

Northwestern University NUCATS Clinical and Translational Sciences Institute

NUCATS Corner

Free Recruitment Tool for Reaching Chicagoland Research Participants

The NUCATS Institute is partnering with the CTSA hubs at the University of Chicago and the University of Illinois at Chicago to launch a new online Chicagoland clinical research recruitment portal. The purpose of this new recruitment tool, which is based on infrastructure developed at the <u>University of Michigan</u>, is to provide Chicagoland residents with a single, robust <u>online portal</u> to learn about and match with research studies that are publicly recruiting at any of the three institutions or their clinical affiliates.

Feinberg investigators with IRB-approved, publiclyrecruiting research studies are invited to utilize this new (and free) recruitment tool. The portal is scheduled to launch in fall 2019, but we need to do intake of studies now. Investigators who are interested in posting one or more of their active research studies on the portal are invited to complete the <u>on-line intake form</u>. For convenience, investigators may wish to copy and paste study description content from Study Tracker into this portal intake form. For a limited time, science writers are available to support local investigators with writing lay-friendly, accessible study descriptions for the portal; this support will be provided to local study teams at no cost.

For more information about this exciting new recruitment tool, contact Clare McFadden, NUCATS Institute Content Development Manager, at <u>clare</u>. <u>mcfadden@northwestern.edu</u> or 312-503-1967.

Latest Podcast Episodes

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New Evidence on Eggs and Heart Health with Norrina Allen, PhD. Listen <u>here</u>.



Serious Eczema Symptoms Beyond the Skin with Jonathan Silverberg, MD, PhD, MPH. Listen <u>here</u>.

Breakthroughs

Sponsored Research



PI: Seema Khan, MD, the Bluhm Family **Professor of Cancer Research**

Sponsor: National Cancer Institute

Title: Determinants of Transdermal Drug Delivery to the Normal and the **Radiated Breast**

Breast cancer prevention is possible

through use of one of several anti-hormone pills that have been tested in clinical trials, but many women are reluctant to use these because of concerns about side effects.

A new concept for breast cancer prevention is that of putting medications in a gel that can be applied to the breast skin, rather than taking a pill. Transdermal delivery is a well-recognized and effective method. However, there are significant knowledge gaps regarding the causes of individual variations in dermal permeation. Furthermore, current studies exclude women who have undergone breast radiation, because this may alter dermal permeation and/or distribution through the breast.

In this trial, the investigators will test one such medicated gel (4- hydroxytamoxifen) in women treated for breast cancer, who have finished breast radiation.

The goals of the study are 1) to identify the skin features that drive inter-individual variation in dermal drug permeation between individuals, and 2) to assess the feasibility of transdermal drug delivery to the radiated breast.

The findings will help better understand which women are likely to benefit from this treatment, and whether the radiated breast can also be treated in this way.

Read more about this project.



PI: Joseph Mazzulli, PhD, assistant professor of Neurology

Sponsor: National Institute of **Neurological Disorders and Stroke**

Title: The Role of Glycosphingolipids in the Progression and Heterogeneity of **Synucleinopathies**

Parkinson's disease (PD) is characterized by the presence of Lewy body inclusions in the nervous system comprised of insoluble alpha-synuclein (a-syn). The mechanisms that dictate the conversion of a-syn from its physiological state into pathogenic aggregates are not completely understood Furthermore, clinical and pathological disease comorbidity, such as dementia, frequently occurs with PD for unknown reasons.

Genetic studies have provided clues into the etiology of PD and causative factors that might promote a-syn inclusions. Among these, mutations in lysosomal GBA1 have been identified as the strongest risk factor in PD, and are also highly associated with early onset dementia in PD patients.

In this research, the investigators propose to use patientderived midbrain cultures and other models to examine mechanisms that lead to protein accumulation and disease comorbidity, including prion-like replication and spreading, heterologous cross-seeding of tau and Aβ, and lysosomal dysfunction.

If successful, these studies will provide novel insight into the mechanisms of GBA1-associated PD. They also may help to explain the high frequency of dementia and disease heterogeneity in PD patients, and provide novel therapeutics to eliminate pathogenic propagation induced by glycosphingolipids.

Read more about this project.



Welcome New Faculty

Christina Boisseau, PhD, joins as associate professor of Psychiatry and Behavioral Sciences. Her work focuses on OCD and anxiety disorders in two overlapping areas: the hypothesis-driven development and adaption of empirically supported treatments for emotional disorders, as well as using translational research methods to identify critical, transdiagnostic mechanisms of dysfunction and barriers to recovery. Boisseau earned her PhD in clinical psychology from Boston University and completed her internship and postdoctoral fellowship at the Alpert Medical School of Brown University. She has been a principal investigator and co-investigator on numerous research grants funded by the National Institutes of Health, the Norman Prince Neurosciences Institute and the Carney Institute for Brain Sciences. She is the recipient of many awards and honors for her research and leadership achievements, and has mentored many students and fellows.

Bigio

(continued from page 4)

Which honors are you most proud of and why?

I will be receiving the Meritorious Award for Contributions to Neuropathology at the upcoming June meeting of the American Association of Neuropathologists. This award recognizes my lifetime contributions to the field and is a satisfying award to receive at this point in my career.

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

We collaborate with <u>M. Marsel Mesulam, MD</u>, director of the Mesulam Center for Cognitive Neurology and Alzheimer's Disease and chief of <u>Behavioral Neurology</u> in the Ken & Ruth Davee Department of <u>Neurology</u> — along with others on studies of primary progressive aphasia. We've recently published in <u>Annals of Neurology</u>, <u>Journal</u> of <u>Neuropathology</u> and <u>Experimental Neurology</u>, <u>Neurology</u> and <u>Alzheimer's and Dementia</u>.

We've worked with <u>Hande Ozdinler, PhD</u>, associate professor of Neurology in the Division of <u>Neuromuscular Disease</u>, on studies of upper motor neuron dysfunction in ALS, and recently <u>published</u> a paper in *Acta Neuropathologica* with these findings. We also have strong collaborations with Rosa Rademakers, PhD, professor of Neuroscience at Mayo Clinic Florida, on genetic influences in FTLD and have recent publications in *Acta* <u>Neuropathologica</u> and <u>Lancet Neurology</u> with her group.



A group of neurons, one with a lens-shaped inclusion (middle) caused by frontotemporal lobar degeneration (FTLD) with TDP-43 proteinopathy.

Funding

Atopic Dermatitis Research Network Leadership Center (UM1 Clinical Trial Required)

More information

Sponsors: National Institute of Allergy and Infectious Diseases (NIAID)

Letter of Intent: June 7

Submission Deadline: July 8

Amount: \$2.8M

Synopsis: This opportunity will fund the NIAID Atopic Dermatitis Research Network Leadership Center which will provide the overall scientific strategy and organizational structure to the Atopic Dermatitis Research Network (ADRN) and will interact closely with the ADRN Clinical Research Centers to support the conduct of multisite clinical studies and trials under the ADRN.

Research Project Grants in Pediatric Rehabilitation (R01 Clinical Trial Optional)

More information

Sponsor: Eunice Kennedy Shriver National Institute of Child Health and Human Development

Submission Deadline: June 27

Upper Amount: \$499,999 in direct costs per year over a maximum period of five years

Synopsis: This funding opportunity will support research addressing the rehabilitation needs of children with chronic, physical disabilities.

2020 Vilcek Prizes for Creative Promise in Biomedical Science

More information

Sponsor: The Vilcek Foundation

Submission Deadline: June 10

Amount: \$50,000

Synopsis: Prizes were established to honor emerging to midcareer immigrant professionals who have demonstrated significant accomplishments early in their careers. Three winners will each receive an unrestricted \$50,000 cash prize. Eligible candidates must be independent investigators directly responsible for the design and execution of the work submitted for consideration; they should not be graduate students or postdoctoral fellows working under the supervision of a mentor. In addition, eligible applicants will have been born outside of the United States; be 38 years of age or younger; and hold a doctoral degree (MD, PhD or equivalent).

View more funding opportunities



By Sara Gonzalez, Data Librarian

Many research projects rely heavily on code for data analysis. For some, it's a relatively simple Python or R script. Others may be working with advanced algorithms, modeling, and homegrown databases. At a certain point in the life of a project, archiving the code may become necessary. Perhaps you want to freeze it in time, preventing further changes while still allowing others to view and download it. Or perhaps you wish to save a version of the code that can be released for data-sharing purposes as part of a funder's or a journal's requirements. To achieve these two goals, however, very different approaches and tools might be required.

Archiving in the Short-term

If you're working with code in <u>GitHub</u>, it's likely that you are already aware of GitHub's robust features for collaboration. But did you know that you can <u>archive</u> the code in your GitHub repositories? Archiving in GitHub makes all code, commits, pull requests, projects, issues, and wikis read-only. Others can still fork the repository, but no further changes can be made to the original. This can be a great solution for making completed project code available to colleagues in the short-term.

Though it may be tempting to use GitHub for permanent long-term storage after archiving your project, this is not recommended as a best practice. For an online repository to meet the requirements for long-term storage requested by most funders or journals requiring data-sharing, one very important criteria must be met: The repository must have a long-term plan for its preservation and the preservation of the digital objects that it holds. In addition, once you have become an authenticated user of the repository, you should be granted access to it (and to your deposited materials) in perpetuity. GitHub's Terms of Service contain no explicit commitment to maintain the website into the distant future. And as the terms outline, "GitHub has the right to suspend or terminate your access to all or any part of the Website at any time, with or without cause, without or without notice, effective immediately. GitHub reserves the right to refuse service to anyone for any reason at any time." (<u>GitHub Terms of Service</u>)

Long-term Solutions

If you have code, data, and/or files that currently reside in GitHub but which should be archived for the purposes of data sharing or long-term access, this can be done in a few simple steps. First, clone or download your repository onto secure storage with enough space to hold it, such as the Feinberg servers. Next, upload the contents of the repository to a trusted online resource designed for and dedicated to long-term storage of digital files. The repository you choose may be influenced by the type of materials you would like to deposit. If you have preprints to deposit, you might choose the popular repositories Arxiv or Biorxiv (pronounced "bio-archive). For data and code, you might choose generalist, datafriendly repositories such as Dryad, Figshare or Zenodo (whose maintainers have given some thought to long-term preservation and mention it in their policies; see Zenodo's and Dryad's). Additionally, Northwestern Medicine supports a robust institutional repository called DigitalHub, which is a long-term storage solution for all types of research outputs, from papers and data to posters and presentations.

DigitalHub has several examples of datasets that have been uploaded to comply with a publisher's data sharing policies: see Marilyn Cornelis's <u>data from studies on the</u> <u>epidemiology of coffee</u>, or Marta Perez's <u>pulmonary</u> <u>hypertension data in mice</u>. DigitalHub also makes it easier for people to find, and depending on the license you've used, re-use your data for further work. The repository offers a variety of file and compression formats and can work with file sizes up to 2GB (or beyond, as needed). If you need assistance or have further questions about uploading datasets to DigitalHub, please contact <u>DigitalHub@northwestern.edu</u>.

10

\ Breakthroughs

High-Impact Factor Research

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The Feinberg Research Office regularly tracks research published by Feinberg investigators. The citations are used on web pages, in newsletters and social media, for internal reporting and more. To more accurately track these journals, the Research Office asks that Feinberg investigators use the following institution name in the address field when publishing in peer-reviewed journals: "Northwestern University Feinberg School of Medicine."

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NIH News

Should the NIH Enhance Access to Grants Data? **Give Your Input.**

NIH offers online self-service tools, such as **<u>RePORTER</u>** and EXPORTER, which provide the public with non-sensitive award data information in an effort to remain transparent about who and what gets funded. (Learn more about the RePORT suite below.) Investigators have used such data in creative ways to analyze NIH funding decisions. On occasion, institutions, professional societies, advocates and investigators have requested access to more sensitive NIH data, which are requests granted under special circumstances.

NIH is currently considering enhancing access and exploring which categories of this sensitive data may be shared with investigators in compliance with applicable laws, while safeguarding sensitive, personally-identifiable and confidential information (NOT-OD-19-085). NIH is beginning the process of weighing the costs and benefits of providing approved research organizations controlled access to structured, de-identifiable NIH administrative and scientific information in a formal and controlled way — through a secure data enclave. If you would like to learn more and/ or express your opinion on whether or not the NIH should enhance access to grants data, click here. All responses must be submitted electronically by Thursday, May 30.

Using RePORT to Develop Your Grant Application

In a recent episode of NIH's All About Grants podcast, Brian Haugen, PhD, and Cynthia Danielson, PhD, from the NIH Office of Extramural Research talk about the <u>RePORT</u> suite of tools. Haugen and Danielson share their advice on applying these tools to help applicants throughout the grants process, touch on areas such as figuring out whom to contact at NIH to discuss research ideas, seeing what research projects NIH has funded, and how to apply these tools to strengthen a grant application. Tune in here (transcript linked here) to learn how you can strategically use the RePORT suite to enhance your next application.

NIH Annual Snapshot: Fiscal Year 2018

NIH has released its annual web reports and success rate data with updated numbers for the 2018 fiscal year. These webpages represent annual snapshots of NIH research investments. For highlights of this data, check out NIH Deputy Director for Extramural Research Mike Lauer's Open Mike blog post here.