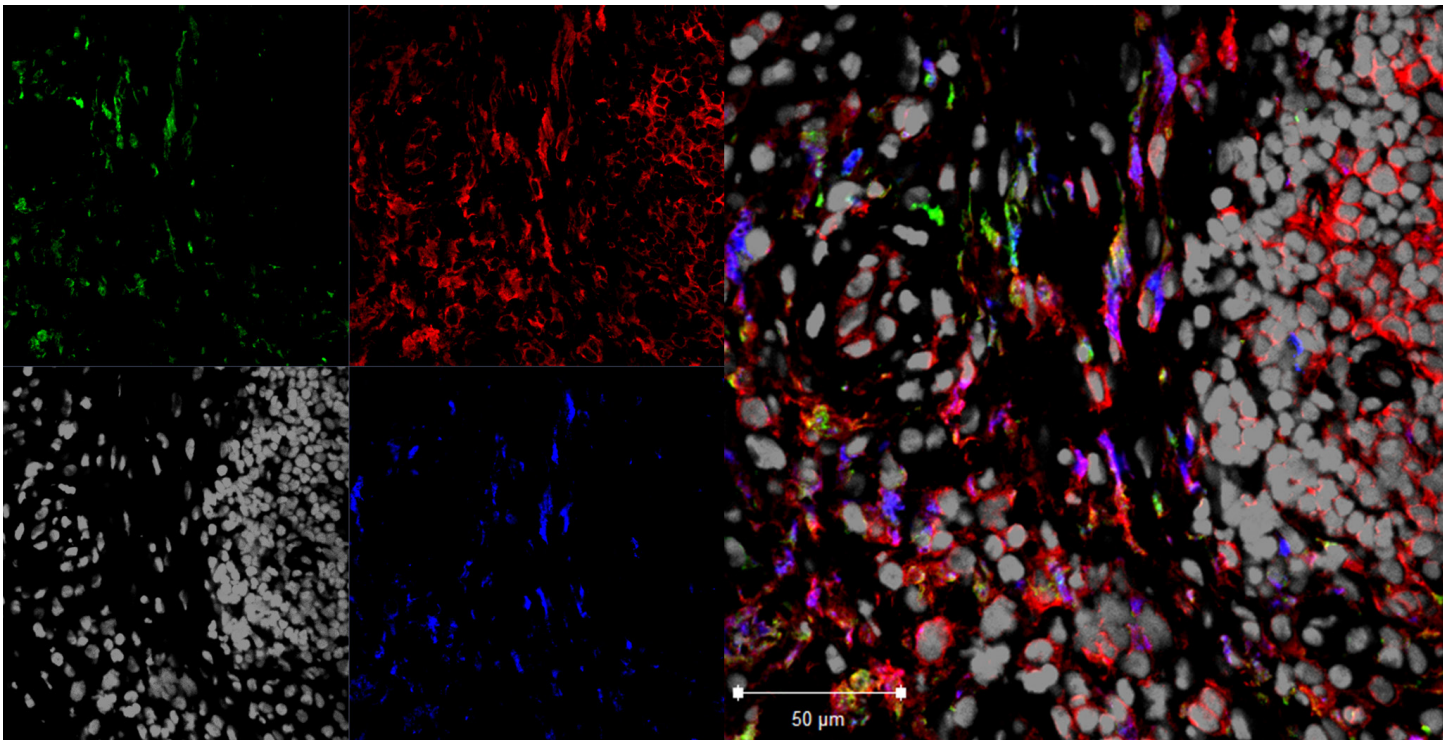
Breakthroughs

Feinberg School of Medicine Research Office

June 2016



Different kinds of macrophages, shown in a mouse joint, can cause either joint destruction or joint repair.

New Chief, New Approaches in Rheumatology Research

Existing drugs for rheumatoid arthritis only offer lasting relief to 50 percent of patients with the disorder, but Harris Perlman, PhD, the new chief of the Division of Rheumatology, believes personalized medicine could improve that statistic and lead to better treatments for all people with rheumatic disease.

Perlman's lab is making leading-edge discoveries in the field of personalized medicine by studying patients' own immune cells, which can play a role in the development and remission of rheumatic disorders.

"I believe immune cells, such as macrophages, have the potential to create improved personalized therapies by providing genetic signatures for individual patients with inflammatory disease," Perlman said. "By isolating macrophages in patients with rheumatic disease, we can begin to identify potential biomarkers to more precisely determine which therapies will work for any given individual."

Macrophages produce the cytokine TNF-alpha, a protein implicated in the inflammatory processes that lead to destructive autoimmune conditions including rheumatoid arthritis, systemic lupus erythematosus and scleroderma.

In his new position, Perlman plans to create the Northwestern Medicine Center for Precision Medicine in Rheumatology, where scientists will analyze populations and single cells for their epigenetic, genetic and proteomic profiles and ultimately develop better, individualized treatments for patients.

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Northwestern Medicine®

New Approaches in Rheumatology Research

(continued from cover page)

"My central goal is for Northwestern Medicine to become the premier rheumatology program in the United States," Perlman said. "This will be accomplished by bringing new skills, energy, enthusiasm and international recognition to the division, which can propel us to the forefront of the field."

Northwestern Medicine's rheumatology division currently ranks 13th in the nation, according to *U.S. News & World Report,* and Perlman's vision is to establish the division as one of the leaders in genomics, proteomics and other emerging areas.

Perlman, also a member of the Interdepartmental Immunobiology Center and the Robert H. Lurie Comprehensive Cancer Center of Northwestern University, first came to Northwestern 18 years ago as a postdoctoral fellow in the lab of former chief and now Solovy-Arthritis Research Society Professor Richard Pope, MD.

In Pope's lab, Perlman studied apoptosis and the cell cycle, and he joined the faculty as an assistant professor in Rheumatology in 2001, with a secondary appointment in Microbiology-Immunology. Perlman left to serve as a professor in Saint Louis University's Department of Molecular Microbiology and Immunology before returning to Feinberg in 2008.

Immune Cells in Inflammatory Disease

Perlman's lab focuses on the impact that macrophages and dendritic cells play in rheumatoid arthritis and systemic lupus erythematosus. He also studies the relationship between systemic inflammation and atherosclerosis, or hardening of the arteries.

Harris R. Perlman, PhD, professor in Medicine-Rheumatology, will succeed Richard Pope, MD, as chief of Rheumatology, starting September 1.

His team was the first to show that macrophage plasticity drives the pathogenesis of rheumatoid arthritis. They documented that monocytes, white blood cells that eventually differentiate into macrophages, are needed for the development of inflammatory arthritis in mice. Furthermore, the team also demonstrated that the mice still get arthritis despite the depletion of inflammatory monocytes, which were previously thought to be the first responders to inflammation.

The scientists found evidence that the resident monocyte population is the central monocytic cell initiating the disorder. According to Perlman, this finding represents a major shift in the understanding of monocyte recruitment and the differentiation of macrophages in the joint.

New Faces of Rheumatology

Perlman is building on an already-strong team of scientists and physicians and is recruiting more people who share his vision for scientific discovery that impacts human disease. New faculty members include Amy Archer, MD, PhD, '15 GME, assistant professor of Medicine in the Division of Rheumatology. She is creating the division's new vasculitis clinic to treat inflammation in blood vessels.

"I've had the great opportunity to create the clinic, and I'm excited to have the chance to develop it as a resource for patients and as a way to collaborate with other divisions," Archer said.

Mary Mahieu, MD, a rheumatology fellow, will run lupus and scleroderma clinical trial programs starting this summer.

"These are the new faces of rheumatology," Perlman said. "We are fortunate to have many senior faculty members to provide us with the continuity we need to push forward our division and build the next generation of leaders in our specialty."

CONTENTS

Unraveling Gene Expression in Human Epithelia

Ann Harris, PhD, Pediatrics, Human Molecular Genetics

Ann Harris, PhD, professor of Pediatrics in the Division of Human Molecular Genetics, has worked to elucidate the genetics behind cystic fibrosis.

Harris's interest in gene expression in human epithelia tissues began during her graduate studies at the University of London, where she studied the regulatory mechanisms for a single gene, cystic fibrosis transmembrane conductance regulator (CFTR) gene. When mutated, this gene causes the inherited disease cystic fibrosis.

She came to Northwestern University Feinberg School of Medicine in 2003 to direct the Human Molecular Genetics Program at Stanley Manne Children's Research Institute. Harris is also a member of the Center for Genetic Medicine and Robert H. Lurie Comprehensive Cancer Center.

Q&A

What are your research interests?

The main research focus in the laboratory is on transcriptional networks that coordinate gene expression in human epithelia. The unique properties of the epithelia lining the respiratory, digestive and reproductive systems are determined by transcription factors that establish and maintain the specific program of differentiation. Our interest in this topic developed through elucidation of the regulatory mechanisms of the CFTR gene. CFTR encodes a chloride ion channel that is critical to the function of many epithelia. The CFTR gene encompasses nearly 200 kilobases of genomic DNA, which is isolated within a single transcriptional domain. Within this, distal cis-acting regulatory elements are brought into close proximity with the gene promoter to modulate its activity. We identified many of the cell-type-selective transcription factors (TFs) that bind to these cis-elements.

In recent work, we revealed the targets for several of the key TFs genome wide, using ChIP-seq together with open chromatin mapping by DNase-seq. These studies enabled us to start determining the transcriptional networks that control epithelial cell identity and how individual TFs contribute to this coordinated gene expression.

In a closely related project, we are investigating the molecular basis of genetic elements affecting lung disease severity in CF. A genome-wide association study (GWAS) performed by others demonstrated that SNPs at Chr11:p13 tracked with this phenotype. These SNPs lie in an intergenic region that is flanked on one side by two epithelial-selective TFs and on the other by a gene involved in apoptosis. We are using a range of state of the art molecular and cell biological methods to find out how this region of chromosome 11 impacts lung health and disease.

Another interconnected project focuses on the human male genital duct epithelium. Normal sperm maturation requires a tightly regulated luminal environment in the epididymis, the proximal part of these ducts, which is dependent on a healthy epididymis epithelium. Working with human cells we are defining the critical genes and biological pathways that control the unique properties of the epididymis epithelium and that fail in many diseases associated with male infertility.

What is the ultimate goal of your research?

The development of new therapies for diseases of human epithelial function, including cystic fibrosis.

How is your research funded?

The Harris lab is funded by the National Institutes of Health awards NIH 1R01HD068901, Transcriptional Networks Regulating Luminal Environment in the Epididymis and NIH 1R01HL117843, Mining open chromatin to define molecular mechanisms of CF modifier genes.

We are also supported by the Cystic Fibrosis Foundation awards Harris14P0, Tissue specific regulation of a gene essential for normal airway epithelial function and Harris15XX0, Exploiting the Developmental Regulation of CFTR for therapeutic benefit.

Lurie Children's support of infrastructure in our Research Institute is also important.

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Exploring the Role of Transcription Factors in Lymphatic Diseases

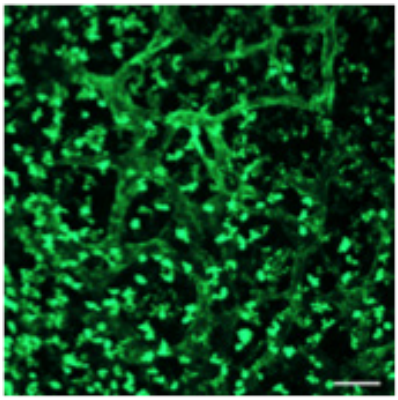
In a recent study published in the *Journal of Clinical Investigation,* Northwestern Medicine scientists identified a pathway through which transcription factor proteins regulate lymphangiogenesis, the formation of lymphatic vessels from pre-existing lymphatic vessels.

These results suggest a new mechanism for diseases associated with lymphatic vessels, which transport fluid out of tissues as part of the body's lymphatic system. This system is important for fluid management, immune function and fat absorption, and also plays a role in the spread of tumor cells.

"The area of lymphatic research is expanding, with lymphatics having an important role in tumor growth and vascular disorders," said senior author Tsutomu Kume, PhD, associate professor of Medicine in the Division of Cardiology and of Pharmacology. "In patients with lymphatic disorders, our results are important for new developments for therapeutic approaches."

Using mouse models, Kume observed the expression of transcription factors Foxc1 and Foxc2, proteins that bind to specific DNA sequences, in the lymphatic system of developing embryos. Kume removed the Foxc1 and Foxc2 genes, which resulted in increased activation of a chain of proteins, called Extracellular Signal-regulated Kinase pathway (ERK). This in turn led to the proliferation of lymphatic endothelial cells, enlarged lymphatic vessels and abnormally-shaped lymphatic vessels.

The team also discovered how the Foxc1 and Foxc2 genes control signaling pathways of the ERK proteins leading to lymphatic vessel growth.



Tsutome Kume, PhD, associate professor of Medicine in the Division of Cardiology, observed Foxc1 and Foxc2 expression in the lymphatic system of developing mouse embryos to investigate lymphatic cells and their role in disease.

"This finding expands our knowledge of lymphatic vessel formation and provides new insights into other disease processes," said Kume, who is a member of the Feinberg Cardiovascular Research Institute, the Center for Genetic Medicine and the Robert H. Lurie Comprehensive Cancer Center of Northwestern University.

In future research, he plans to characterize the deletion of Foxc1 and Foxc2 in the knockout mouse model.

The research was supported by National Institutes of Health grants HL 126920 and EY019484 and American Heart Association grant AHA-14POST20390029.

Residents Investigate Regulation of Women's Health Devices

Some high-risk medical devices used in obstetrics and gynecology were approved by the FDA based on flawed data, according to a recent study conducted by Northwestern Medicine residents.

The investigators assessed the regulation of women's health devices approved by the FDA in the last 15 years. The authors suggest that their results, published in the journal *Obstetrics and Gynecology*, indicate that the agency's approvals should be based on clinical studies more rigorous than currently required, both before and after the devices go to market.

"Devices are a huge part of the medical care that we provide women on a daily basis," said study first author Jessica Walter, MD, a resident in the Department of Obstetrics and Gynecology. "We found that there's an opportunity to increase the burden of proof required for a device to be approved for public use." Read more.

Extending the Reach of Scientific Discoveries at Northwestern

Camille Vicino, Communications Specialist, Northwestern University Clinical and Translational Sciences (NUCATS) Institute

Where are you originally from?
I grew up in Hinsdale, which is in the western suburbs of Chicago.

What is your educational background?
I received my Bachelor's Degree in communication and psychology from the University of Illinois-Urbana Champaign. This month, I will begin pursuing a Master's Degree in integrated marketing communications at the Medill School of Journalism here at Northwestern University.

Please tell us about your professional background (ie. other places you have worked prior to Northwestern, or, other jobs you've held at Northwestern).
Before coming to Northwestern, I worked for Advocate Health Care. During my time there, I worked at Advocate Lutheran General Hospital, Advocate Good Samaritan Hospital as well as Advocate's corporate office. I served in a variety of communications and marketing capacities including working in media relations, developing marketing materials, managing social media, writing for their newsletter and serving on a team that managed the organization's news website, which reported on the latest health research.

Why did you choose to work at Northwestern?
I've always been very interested in health and wellness, especially when it comes to new ideas to help people live healthier lives. Working at NUCATS was appealing to me because it has given me the opportunity to write about novel discoveries in healthcare as well as well as to share resources that can help research teams as they work to make medical discoveries.

How do you help scientists and/or research students at the medical school?
As the communications specialist at NUCATS, my job is to raise awareness about the resources NUCATS offers to investigators at Feinberg to help them as they conduct research. I do this in a variety of ways, including writing for the NUCATS monthly newsletter (sign up here), which includes stories about research being conducted with the support of NUCATS and information about the services available through NUCATS. I also manage the NUCATS Twitter and Facebook pages and develop marketing plans to spread the word about upcoming events and promote various NUCATS resources. Overall, my goal is to make sure that those at the medical school are informed about the wide variety of ways NUCATS can help them with their research.

What is your favorite part of the job?
My favorite part of my job is hearing about the research happening here at Northwestern. It's so incredible to hear about the exciting breakthroughs that are happening on a daily basis.

What do you like to do in your spare time?
I love running along the lake, watching sports (especially the Cubs) and exploring Chicago.

First HSIP Student Defends Dissertation

The Health Sciences Integrated PhD Program (HSIP) recently celebrated the first successful final dissertation defense in the program's history. Cindy Barnard, part of one of HSIP's first cohorts of PhD students, began her graduate studies in 2012. She recently defended her dissertation, "An Innovative RAPPORT Model of Patient-Centered Quality," and will graduate this summer. Barnard's dissertation committee included David Cella, PhD, chair of Medical Social Sciences, Donna Woods, PhD, research associate professor of Pediatrics, and Gary Noskin, MD, professor of Medicine in the Division of Infectious Diseases. According to HSIP, Barnard is likely the first student nationwide to earn a PhD with a research focus on healthcare quality and patient safety.

Examining Longevity Proteins and Tumor Progression

Xianghou Zou, Driskill Graduate Program in Life Sciences

Xianghou Zou, a fourth-year student in the Driskill Graduate Program in Life Sciences, studies the role of sirtuins, longevity proteins, in tumor progression in the laboratory of David Gius, MD, PhD, professor of Radiation Oncology and Pharmacology.

Zou earned his undergraduate degree from the University of Illinois at Urbana-Champaign. Upon beginning his graduate work at Northwestern, he was immediately drawn to translational research and says he hopes to apply to medical school after completing his PhD so he can practice "bench to bedside" medicine.

Q&A

Where is your hometown?

I was born in Shenyang, China. It is a big city in the Northeastern part of China. I lived there for 18 years before I decided to begin my undergraduate studies in the United States.

What are your research interests?

Before I started graduate school, I always wanted to do research in the field of cancer biology, and thought it would be great to work on clinically related research. Back then I didn't know the concept of translational research, but luckily I joined the lab of David Gius, where I am able to work on translational research projects.

What exciting projects are you working on?

In David Gius's lab, we study the role of sirtuins. Sirtuins are also known as longevity proteins. Their main function is to regulate cellular energetic homeostasis and to make sure that cells will use their energy efficiently. Loss of sirtuins will decrease life span and result in many different types of cancer, including breast and pancreatic cancer. Therefore, the central hypothesis of our lab is that loss of sirtuin activity will lead to tumorigenesis and tumor permissive phenotypes. Specifically, my thesis project is to study how acetylation of IDH2 at lysine 413, due to loss of sirtuin 3 activity, may result in breast cancer malignancy risk and tumor permissive phenotypes.

What attracted you to the PhD program?

The location of Northwestern was a big draw for me. Chicago is a great city to live in, with lots of restaurants, shops, museums and a great lake. Feinberg is located in the center of Chicago, and it has many faculty members and research areas for students to choose from. In addition, during my interview process, I met many DGP students and our associate program director, Steve Anderson, PhD, and they were all very patient with me and happy to answer my questions. It was a great experience and really supported my decision to pursue a PhD degree at Northwestern.

What has been your best experience at Feinberg?

Winning my first-ever award in graduate school at Research Day has been my favorite experience yet. My graduate work moves very slowly. I tried six different projects before finally landing on my thesis project. So I think that winning my award on Research Day is recognition of all my previous efforts and a reward for never giving up. But most importantly, the award will motivate me to work even harder in my research area so that I will continue achieving my research goals and so that in the future my research can be used in clinical settings.

How would you describe the faculty at Feinberg?

The faculty members at Feinberg are all very nice. Many of the faculty members that I know are great mentors to students and they are supportive to the development of a student. My advisor, David Gius, allows me to make mistakes and try different things in my project, giving me freedom in my research, because he believes that students must make mistakes to learn. This environment encourages students to make new discoveries and make progress in research.

What do you do in your free time?

I either play tennis or go to the gym in the evening. I also like cooking and baking and will occasionally play piano to relax. I am also a big fan of learning foreign languages, because I know learning additional languages will help me integrate to different countries faster.

What are your plans for after graduation?

My advisor is a physician-scientist, and I really like his work style. Seeing him run research in a lab while seeing patients and using what has been discovered in the research field to solve clinical problems is very inspiring. I hope that I can become a physician-scientist one day as well, but it certainly takes time.

Watch a video to learn more about Zou's research.

Research in the News

Chicago Tribune, May 2

Landmark heart disease study marks 30 years of research
Donald Lloyd-Jones was quoted.

TIME Magazine, May 3

Why Your Heart Disease Risk May Not Be as High as You Think
Donald Lloyd-Jones was quoted.

Fox News, May 13

Doctors need to know if patients are skipping pills
Neil Stone and Rosemary Hines were quoted.

- This research was also featured in *Reuters.*

The New York Times, May 17

Finding Organ Donors Concealed in Plain Sight
Juan Carlos Caicedo was quoted.

HealthDay News, May 24

Updated Heart Failure Treatment Guidelines Issued
Clyde Yancy was quoted.

USA Today, May 25

Some Brazilian babies with Zika-related birth defects show eye problems
Lee Jampol was quoted.

Philadelphia Inquirer, May 26

Study: FDA needs tougher device rules to protect women
Steve Xu was quoted.

More media coverage available online.

Northwestern University
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NUCATS Corner

Early career investigators: Apply now for MSCI program

Improve your knowledge of research methods, processes, epidemiology and biostatistics by receiving a Master of Science in Clinical Investigation (MSCI). The MSCI program offers residents, fellows and junior faculty who are interested in pursuing a career in research the opportunity to receive formal research training.

Upon completing the degree, students will complete a research project and submit it for publication. Graduates will also have the skills to design effective research studies, the ability to analyze findings and will be more competitive for NIH-funded grants.

This part-time program is offered in the evenings at Northwestern's Chicago campus and can be completed in approximately two years. Applications are accepted on a rolling basis. The deadline for Fall Quarter is July 5, 2016. For more information contact the program administrator.

Chandel Named Outstanding Investigator

Navdeep Chandel, PhD, David W. Cugell Professor of Medicine in the Division of Pulmonary and Critical Care Medicine, has received the National Cancer Institute's Outstanding Investigator Award. The seven-year, $6.4 million grant supports leaders who have made significant contributions in cancer research and are pursuing areas with unusual potential to move the field forward. Chandel, whose work focuses on cellular organelles called mitochondria, will be exploring the mechanisms of mitochondrial metabolism that contribute to tumor formation and investigating related enzymes that may be targeted for future therapies. Read more about the award.

Sponsored Research

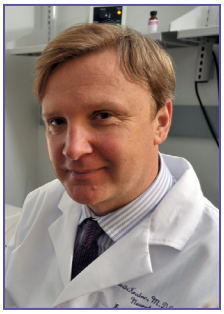
Co-PIs: Kathleen Grady, PhD, professor of Surgery in the Division of Cardiac Surgery and of Medicine in the Division of Cardiology; and Elizabeth Hahn, Associate Professor in Medical Social Sciences and Preventive Medicine

Sponsor: National Heart, Lung, and Blood Institute

Title: Mechanical circulatory support: Measures of adjustment and quality of life

Mechanical circulatory support (MCS) devices are implanted surgically in patients with advanced heart failure and help the heart pump blood throughout the body. There is a critical need to develop better measures to assess patient adjustment to MCS devices and health-related quality of life (HRQOL). Grady and Hahn's team will develop, test and evaluate an MCS-specific measurement system and then explore usability of its measures via a mobile app. This research will lead to more clearly defined benefits and risks of this evolving technology as compared with medical therapy or other strategies, making the concept of "survival" more meaningful. The project will also provide clinicians with tools to better inform patients who are considering device implantation and, after implant, to identify the potential for poor adjustment and HRQOL, in order to better assist individual patients to improve their outcomes.

Read more about this project.



Co-PIs: Dimitri Krainc, MD, Aaron Montgomery Ward Professor and chair of the Department of Neurology; Rajeshwar Awatramani, PhD, associate professor of Neurology

Sponsor: National Institute of Neurological Disorders and Stroke

Title: Rational derivation of DA neuron subtypes from iPS cells for improved modelling of Parkinson's disease

Through this research, the team aims to define key molecular pathways in the pathogenesis of neurodegeneration and to uncover novel targets for therapeutic development. In this project, Awatramani and Krainc seek to understand why Parkinson's disease (PD) mutations lead to dopamine (DA) neuron degeneration in the substantia nigra pars compacta more so than in the dorsal tier of the SNc or ventral tegmental area. DA deficiency, caused by DA neuron degeneration, underpins the devastating motor symptoms of PD, but why DA neurons display differential vulnerability remains enigmatic. The goal of this research is to generate distinct DA subtypes from induced pluripotent stem cells to help understand the selective vulnerability of ventral tier substantia nigra neurons in PD. Read more about this project.

Welcome New Faculty

Masha Kocherginsky, PhD, joins the department of Preventive Medicine as an associate professor. She earned her PhD in statistics from the University of Illinois at Urbana-Champaign. Prior to joining Feinberg, she worked in the Biostatistics Laboratory in the Department of Public Health Sciences at the University of Chicago, where she focused primarily on cancer and was involved in the National Social Health and Aging Project (NSHAP), a longitudinal, population-based survey of physical health and social factors in older Americans. Her extensive statistical experience and interests include experimental design, design and analysis of clinical trials, and analysis of correlated, longitudinal data, competing risks, survival and survey data. She has co-authored over 80 peer-reviewed publications. In her new role, she will join the Biostatistics Collaboration Center (BCC), collaborate with RIC investigators, continue working in cancer research, and teach in the Master of Science in Epidemiology and Biostatistics program.

Unraveling Gene Expression in Human Epithelia

Q&A with Ann Harris, PhD

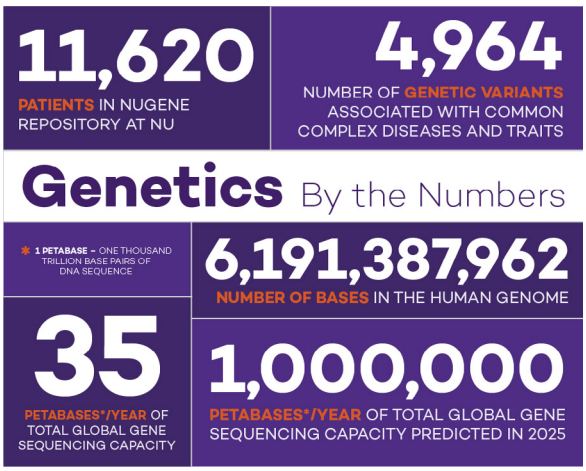
(continued from page 3)

Who makes up your research team and what role does each individual play in your research?
My lab is run by research assistant professor, Shih-Hsing Leir, PhD, and Mike Mutolo, MS, lab manager and program manager in the Human Molecular Genetics Program, both of whom have worked with me for many years. Four postdoctoral associates, James Browne, PhD, Sujana Ghosh, PhD, Andrew Hoffman, PhD, and Kay-Marie Lamar, PhD, each run individual projects within the overall research program of the lab.

In addition, three graduate students are pursuing their doctorate degrees in the lab, Sara Fossum (MSTP), Rui Yang (DGP) and Lindsay Stolzenburg (DGP). We also welcome Northwestern University undergraduate researchers to the team, currently Matthew Xu and Alex Ge, who are supervised by postdocs and students. Our senior administrative assistant, Brian Corstange, handles administrative duties across the program.

What do you enjoy about teaching/mentoring young scientists in the lab?
Growing their confidence as experimentalists; helping them to think creatively; helping them to discover their strengths; seeing their progression over the years of graduate school and beyond. Enabling them to reach their full potential —whatever that may be—to go forward in their careers irrespective of whether they choose a route in academia, industry, education or something completely different!

Infographic: Genes and Research



Funding

Partnerships for Structure-Based Design of Novel Immunogens for Vaccine Development (R01)

More information

Sponsors: National Institute of Allergy and Infectious Diseases

Submission deadline: October 3

Upper Amount: $750,000 per year, for up to five years

Synopsis: The purpose of this Funding Opportunity Announcement (FOA) is to solicit applications from multi-disciplinary teams for milestone-driven research projects that utilize novel, structure-based vaccine design approaches to generate candidate vaccine immunogens against infectious disease pathogens of clinical concern. The goal is the generation of candidate vaccines with demonstrated efficacy in appropriate models that are suitable for transition to the product development pathway.

Impact of Aging in Human Cell Models of Alzheimer's Disease (R01)

More information

Sponsors: National Institute on Aging

Submission deadline: September 28

Upper Amount: $250,000 per year, for up to five years

Synopsis: The goal of this FOA is to establish the impact of aging on the expression and/or modulation of Alzheimer's Disease (AD) pathological processes and to assess age-related AD genotype-phenotype relationships in human cell models. Research incorporating different brain cell types to promote neural circuit maturation and complexity in such cell models is expected to better recapitulate and give greater insight into AD pathological processes.

Specialized Alcohol Research Centers (P50)

More information

Sponsors: National Institute on Alcohol Abuse and Alcoholism

Submission deadline: December 5

Upper Amount: $1.15 million, for up to five years

Synopsis: The overall purpose of the NIAAA Alcohol Research Center program is to provide leadership in conducting and fostering interdisciplinary, collaborative research on a wide variety of topics relevant to the Institute's mission. These topics include, but are not limited to: the nature, etiology, genetics, diagnosis, treatment and prevention of alcohol use disorders and their biomedical, psychosocial and economic consequences across the lifespan.

View more funding opportunities

NIH Biosketch: Contributions and Capabilities

Last year Galter Library offered a classed called "How to Prepare a New NIH Biosketch." The response was overwhelming; we had found a topic that perplexed and challenged the FSM community. Now the new NIH Biosketch is almost a year old and no longer new to most researchers. But that hasn't ended our curiosity in how researchers craft their contributions to science in the NIH biosketch.

Mindset has something to do with it

Many researchers feel burdened when asked to write about their contribution to science. Some operate in a scarcity mindset, their modesty preventing them from accessing the wealth of topics available. Others view their research as a whole and struggle to tease out pieces to form multiple contributions. Others need to pare down their series of contributions and wrestle with decisions to combine or remove contributions from the list.

After reviewing biosketches this year, we've compiled some thoughts for each of these mindsets. Regardless of which mindset you may (or may not) fall into, we urge researchers to share their biosketches with colleagues, who can provide feedback regarding content and interpretation.

The 'modesty' mindset:

Some researchers fret over their publication list and miss out on the full range of their contributions: giving international or national presentations, developing open source software, creating educational materials for students or trainees. These contributions show a rich competency in communicating science by making information more open and accessible to the entire research community.

If your publication list is short, or doesn't adequately support your written contribution, consider highlighting other non-publication research products: audio or video products; patents; data and research materials; databases; educational aids or curricula; instruments or equipment; models; protocols; and software or netware.

The 'research as a whole' mindset:

If you have trouble writing more than one contribution, consider how you talk about your work. Think about how you break up ideas to keep the listener from becoming overwhelmed. For each of those ideas, consider answering the questions framed by the biosketch instructions for contributions:

- What is the historical background that frames the scientific problem?
- What were your central finding(s)?
- How have the finding(s) influenced the progress of science or been applied to health or technology?
- What was your specific role in the described work?

The 'too much to communicate' mindset:

If you've identified too many contributions, you may be tempted to delete those extra paragraphs. Don't do it! Every grant you apply for is different, each requiring a biosketch that perfectly frames your contributions and capabilities. Though you can't have more than 5 contributions in one biosketch, you can save that extra text in a separate document or folder dedicated to biosketches and keep a running list for future use.

Putting your work to use

If you've gone to the trouble of writing out your contributions, consider how you can re-use that work in other ways. Consider adding these contributions to your CV or in any online profiles you've created. With a little wordsmithing, you've got a perfect biography for a speaking engagement, or the start of a blog post or podcast about your peer-reviewed research.

If you need further assistance, check out the NIH's Biosketch FAQ, and Galter Library's NIH Biosketch Guide.

High Impact Factor Research

April 2016

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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."

Calendar

Tuesday, June 21

Today's Innovations in Medical Education Lecture Series

Joan Anzia, MD, professor of Psychiatry and Behavioral Sciences and Medical Education, to present on physician suicide and depression

Time: **4:00 to 5:00 p.m.**

Location: **Robert H Lurie Medical Research Center**

Baldwin Auditorium, 303 E. Superior

Contact: FAME@northwestern.edu

More information

Tuesday, June 28

Division of Infectious Diseases Lecture

Michael Ison, MD, associate professor of Medicine in the Division of Infectious Diseases and of Surgery in the Division of Organ Transplantation, to talk on transplant infectious diseases.

Time: **Noon to 1:00 p.m.**

Location: **645 N. Michigan Avenue, Suite 900**

Contact: marla.block@northwestern.edu

More information

Tuesday, July 19

Women's Health Research Institute Forum

This month's lecture features Suena Massey, MD, assistant professor of Psychiatry and Behavioral Sciences and Medical Social Sciences.

Time: **Noon to 1:00 p.m.**

Location: **Prentice Women's Hospital**
250 E. Superior Street
3rd Floor Conference Room L South

Contact: womenshealthresearch@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

New US Overtime Rule and its Affect on Postdoctoral Stipends

NIH Director Francis Collins and U.S. Secretary of Labor Thomas Perez mentioned in a *Huffington Post* Op-Ed that the NIH supports an increased salary threshold for postdocs, as covered by the new rule in the Fair Labor Standards Act (FLSA). The Fair Labor Standards Act (FLSA) is the law that contains overtime pay provisions for employees across the United States, entitling all US workers to overtime pay unless they are exempted because they are paid on fixed, preset salaries or are engaged in executive, administrative or professional duties.

In response to the proposed FLSA revisions the NIH will increase postdoctoral NRSA stipends to levels at or above the new threshold of $47,476, effective December 1, 2016.

Read more here.

NIH Director Talks on Zika Vaccine with *CNNMoney*

National Institutes of Health Director Francis Collins talks to *CNNMoney* about finding a Zika vaccine and why funding medical research is a necessary investment for the economy.

Watch here.

Maureen Goodenow, PhD, Appointed as Associate Director for AIDS Research

Maureen Goodenow, PhD, has been appointed as the new NIH Associate Director for AIDS Research and Director of the NIH Office of AIDS Research (OAR). Goodenow has nearly 30 years of experience in HIV/AIDS research and advocacy. She is expected to join the NIH in July to lead OAR's efforts and will work closely with NIH institutes and centers to pursue new tools for preventing HIV infection.

Read more here.

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