



NIH supports five “trailblazing” labs

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Five Pitt Med faculty members have received prestigious awards from the National Institutes of Health (NIH).

These grants accelerate scientific discovery by supporting trailblazing ideas in clinical and basic biomedical science that may struggle under the conventional funding mechanism but could have a transformative effect in addressing important challenges in medicine.

“The science put forward by this cohort is exceptionally novel and creative and is sure to push at the boundaries of what is known,” said former NIH Director Francis S. Collins. “These visionary investigators come from a wide breadth of career stages and show that groundbreaking science can happen at any career level given the right opportunity.”

“To have five of our faculty members recognized in a single year is, indeed, cause for celebration,” said Anantha Shekhar, senior vice chancellor for the health sciences and John and Gertrude Petersen Dean, School of Medicine. “These well-deserved awards recognize the outstanding potential of our early career investigators.”

Christopher Donnelly, assistant professor of neurobiology, has been selected to receive a \$9 million NIH Director’s Transformative Research Award. He will lead a five-year multicenter effort to identify the molecular and genetic mechanisms that cause amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig’s disease, and a related disorder called frontotemporal lobar degeneration (FTLD). “ALS and FTLD are two fatal neurodegenerative conditions with no current treatment to prevent, slow or stop brain cell death, and some patients develop both disorders,” Donnelly said. “We think that studying their common biological pathways will help us find solutions for both disorders more quickly.”

Jishnu Das, assistant professor of immunology, was awarded a \$2.4 million New Innovator Award funded by the National Institute of Allergy and Infectious Diseases (NIAID) for a project that aims to create three-dimensional maps of protein interactions; the work will shed light on how infectious pathogens interact with their hosts. Das and colleagues will apply their framework first to HIV and influenza,

with the goal of expanding to other infectious diseases in the future.

Three Pitt faculty members received the NIH Director’s New Innovator Awards.

These \$2.4 million grants are funded through the agency’s competitive High-Risk, High-Reward Research Program, which was initiated by the NIH to provide support to “exceptionally creative scientists pursuing highly innovative research with the potential for broad impact in biomedical, behavioral or social sciences within the NIH mission.”

While most cell death studies focus on how cells die, **Yi-Nan Gong**, assistant professor of immunology, received an award to probe how some cells can begin to undergo a cell death process called necrosis but eventually survive. The study seeks to understand how these survivor cells contribute to the development of cancers and determine new possible treatment targets.

Dwi Utami Kemaladewi, assistant professor of pediatrics, received the New Innovator Award for her research on muscular dystrophies. Studies to evaluate genetic treatments often fail to consider how people with diverse genetic backgrounds will respond to new therapies. Her work looks at how such studies can be applicable to a broader population.

“The New Innovator Award gives me the opportunity to focus on technological development prior to conventional hypothesis-driven research. To be able to do that as a junior investigator is very liberating,” she says.

Guang Li, assistant professor of developmental biology, received the New Innovator Award to develop heart “organoids” that mimic anatomical features to model and treat congenital heart defects, which occur in 1-2% of all live births.

“This award gives my group an opportunity to explore the scientific boundaries in the cardiovascular and stem cell fields,” Li said.

—Staff reports



Cartoon by Tara Kaloz