By Will Doss

Over the next few years, Northwestern University Feinberg School of Medicine’s research enterprise will undergo an exciting stage of growth, with the planned hiring of hundreds of new scientists and research staff, and the opening of the Louis A. Simpson and Kimberly K. Querrey Biomedical Research Center. At the same time, the medical school is expanding its strategic research plan, adding the following five, new crosscutting themes to its existing plan, which was developed in 2012:

• Healthcare Engineering, Analytics & Outcomes
• Computational Biology and Big Data
• Healthy Aging
• Health Policy and Economics
• Precision Medicine, Pharmacogenomics and Enterprise Data Warehouse

In addition, a new Behavioral Biology disease focus was added to the strategic plan, reflecting the impact mental health can have on all aspects of health.

“These added cross-cutting themes and the new disease focus will strengthen the Feinberg research mission for years to come,” said Rex Chisholm, PhD, vice dean for Scientific Affairs and Graduate Education and the Adam and Richard T. Lind Professor of Medical Genetics. “I want to thank all who participated for sharing unique insights on the topics they are so passionate about.”

The additions to the strategic plan grew from a research retreat, held in February, where nearly 300 Feinberg scientists gathered for a day of brainstorming and discussion. The retreat’s output was reviewed with a broad cross-section of the medical school, including department, institute and center leadership, the retreat sponsor group and the Northwestern University Board of Trustees’ Northwestern Medicine committee, to refine and distill the ideas into actionable plans.

“We wanted to understand our strengths and weaknesses along with the environmental trends in healthcare and the trajectory of biomedical research,” said Alfred George Jr., MD, chair of Pharmacology. “Quite a few great ideas came out of this enterprise.”

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As patients are living longer and the baby boomer generation hits Medicare eligibility, the issue of healthy aging will increasingly affect research and patient care, leading to Healthy Aging being one of the broad focus areas generated by the research retreat attendees.

This trend is illustrated by shifting interests in Human Immunodeficiency Virus (HIV) research, according to Brian Mustanski, PhD, professor of Medical Social Sciences and director of the Institute for Sexual and Gender Minority Health and Wellbeing.

“Previously, we didn’t ask what someone’s health was like after being on HIV treatment for 20 or 30 years, because they weren’t living that long,” said Mustanski, also a professor of Psychiatry and Behavioral Sciences and the co-director of the NIH-funded Third Coast Center for AIDS Research.

“Now that people are living near-normal lifespans, we are looking at how to reduce the chronic disease and morbidities associated with living with HIV.”

Another new category with big cross-departmental potential is Computational Biology & Big Data — an explosion in biomedical and genetic data over the past decade has fueled scientists’ need for more processing power and analysts, according to Elizabeth McNally, MD, PhD, Elizabeth J. Ward Professor of Genetic Medicine and the director of the Center for Genetic Medicine.

“Whether you’re dealing with electronic health records, or you’re a geneticist, or a biochemist, every one of us has a need for increasing computational power,” she said. “There’s so much data out there, I think every aspect of our enterprise would benefit.”

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New Plan
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Equally important as the crosscutting categories is the new disease focus area: Behavioral Biology.

Mental illness is one of the most common diseases in the United States and untreated mental illness correlates with a number of negative outcomes, according to Mustanski.

“Mental health doesn’t just impact an individual; it affects their family, employability, relationships and children,” Mustanski said. “Mental health issues cross over between a lot of specialty areas at Feinberg, and this new disease focus allows us to grow across centers and departments.”

Inside the Research Retreat

The roots of the retreat stretch back to 2012, when Eric G. Neilson, MD, vice president for Medical Affairs and Lewis Landsberg Dean, began his tenure at Feinberg. He organized the first research retreat, which resulted in the first iteration of the research strategy. The decision to split the Department of Molecular Pharmacology and Biological Chemistry into the separate departments of Pharmacology and Biochemistry and Molecular Genetics was also made at the last research retreat.

While no changes were proposed to existing departments this time around, the February 2017 retreat at the Fairmont Hotel in Chicago resulted in the generation of the new cross-departmental research priorities, extracted from the suggestions and experiences of the participants.

These large cross-discipline meetings are valuable for collaboration, George said, because without them, scientists can end up in silos, spending a majority of time with other scientists in the same field.

“As investigators, we spend 99 percent of our time hyper-focused on our area of research,” said George, who is also the Magerstadt Professor of Pharmacology and the director of the Center for Pharmacogenomics.

Retreat 2017 Recap

“Getting out of that comfort zone and opening up your mind to other perspectives is really important.”

McNally, also a professor of Medicine in the Division of Cardiology and of Biochemistry and Molecular Genetics, said it was especially important to crowdsource these ideas because it’s often the investigators themselves that are reviewing grants and papers, attending specialty meetings and being involved in conversations with grant funding institutions such as the National Institutes of Health.

“A lot of it is having your ear on the ground, talking to colleagues about what’s emerging,” McNally said. “You hear about what’s important and what pressures are being exerted.”

Another benefit of the research retreat’s democratic process is that it gives investigators ownership over the direction of the organization, according to George.

“Everybody has their own fiefdom with their own ideas, but once everybody starts putting their cards on the table you realize you’re all talking about the same thing — we’re just using different perspectives,” George said. “At the end of the day, this is a grassroots enterprise, and people buy in much better when they have a seat the table rather than simply being told what to do.”