

# Translating Patient-Impactful Research Into Practice

An Interview with Karina Davidson, PhD, Senior Vice President of Research, Northwell Health

**EDITORS' NOTE** *Dr. Karina Davidson also serves as Dean of Academic Affairs, Director and Professor, Institute of Health System Science, Feinstein Institutes for Medical Research, and Donald and Barbara Zucker Professor in Health Outcomes, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell. For more than 25 years, Dr. Davidson has served in leadership roles for teams focused on the advancement of scientific, educational and patient care missions through both the generation and implementation of evidence-based practices. She has been the principal investigator of more than 30 federally funded grants and authored over 300 peer-reviewed articles. Dr. Davidson is also past chair of the United States Preventive Services Task Force. She earned her Master of Applied Science degree in industrial/organizational psychology as well as her Ph.D. in clinical psychology from the University of Waterloo (Canada).*



Karina Davidson

## Will you provide an overview of your role and areas of focus?

I'm the Dean of Academic Affairs and the Director of the Institute of Health System Science at the Feinstein Institutes for Medical Research, the research arm of Northwell Health. I'm also honored to be the Donald and Barbara Zucker Endowed Professor in Health Outcomes at the Zucker School of Medicine and the Senior Vice President of Research for Northwell Health. Through these roles, I work with many talented faculty and staff to improve health by translating patient-impactful research into practice across the system. We have created the Northwell learning health system, allowing us to efficiently study gaps in care delivery and rapidly implement innovative and best practices to improve the quality of care.

## What have been the keys to the industry leadership of the Feinstein Institutes for Medical Research?

The Feinstein Institutes for Medical Research's foundation is built upon Northwell Health's patient-driven mission and entrepreneurial spirit to be more than just a healthcare system. Consequently, Feinstein's leadership promotes a culture of relentless innovation and collaboration for research. The impact of this

leadership is evident in our Institute for Bioelectronic Medicine which is developing new approaches to treating and diagnosing disease and injury through a convergence of molecular medicine, neuroscience, and bioengineering disciplines to make innovative therapies a reality. Another example of Feinstein's ability to be an industry leader is our strength in harnessing the power of big data to inform science and practice. Recently, we launched Northwell Health Vital Sign. This initiative leverages data analytics and AI to

understand various dimensions of health and well-being to enhance research and improve patient care. As a result of these efforts, research is a primary pillar of Northwell's mission and is a driving force across Northwell.

## How has the Feinstein Institutes allowed you to follow your passion for doing something disruptive and innovative in the research world?

Throughout my career, I have seen that data science is the backbone of all research. More than ever, the healthcare industry is poised to harness big data's potential and power. As a result, we can now apply new analytic tools and techniques to our vast patient and population-level data to make discoveries that improve patient care. So, Feinstein has provided me with a career-defining opportunity to transform data science at Northwell by creating and launching a new Quantitative Intelligence team. The goal of this innovative group of data scientists, statisticians, engineers, economists, and professional staff is to centralize research data and analytics infrastructure to increase research insights and pace. My passion will be realized when rapid-cycle research – problem analysis, design, development, implementation, and evaluation – is established and operating. The Feinstein Institutes for Medical Research will transform how research is done by attaining accessible, real-time data to enable discovery, enhance clinical trial conduct, and, ultimately, inform better patient care.

## Do you feel that Northwell Health's commitment and investment in research is a differentiator for the health system?

With over 5,000 scientists, clinical investigators, and professional staff at the Feinstein Institutes for Medical Research, Northwell is committed to investing in the careers of

disrupters and innovative thinkers to transform healthcare. Feinstein is recruiting outstanding scientists across various disciplines and training the next generation to be leaders in their field. We are committed to bringing our patients high-quality, cutting-edge care by supporting our employees to make impactful evidence-based discoveries. We're moving research beyond the bench and translating findings to the patient's bedside and throughout the community. We're engaging patients as research partners to inform the types of research problems that we tackle and reach underserved populations. We're sharing research findings with our communities and seeking to raise health for all.

## How critical are clear metrics and objectives to ensure the development of impactful research?

When conducting novel research with cutting-edge technology, clear metrics and objectives are vital to produce impactful research. Defining objectives and identifying specific metrics streamlines research and leverages various strategic, scientific, and operational expertise across Northwell.

One of our driving objectives is to ensure that underrepresented and vulnerable populations receive equitable health outcomes in our communities. Another ambitious objective is to use De-implementation science to remove evidence-free practices and paperwork from our clinicians' workload. We intend to give clinicians precious time back, and we relentlessly work when designing research to evaluate that we have done so.

## What are you looking forward to next in the healthcare industry?

Healthcare is uniquely poised to leverage cutting-edge technology and harness the power of big data and analytics to revolutionize and personalize how we deliver care to our patients. Big data provides us with population-level insights into the health of our communities. AI allows us to predict adverse health events in our patients before they occur. Automated shared decision-making tools allow us to hear the voice of each patient and emerging technologies offer us the tools to deliver personalized care solutions based on our patients' values and preferences. I am excited and energized by the opportunity to translate research findings into improved outcomes for our patients as rapidly as possible to help our patients achieve longer, high-quality lives. ●