

2020 Year in Review

2020 has been an extraordinary year of challenges and uncertainties not only in the United States but across the globe. But out of those circumstances came innovations and resilience! Let's look back at some of the accomplishments here at Northwestern Medicine and Northwestern University.

Medical School Research Funding Breaks Records in 2020

Northwestern University Feinberg School of Medicine principal investigators secured a record-breaking [\\$643 million](#) in research funding and awards during the 2019-2020 fiscal year, an impressive 20 percent increase over the previous year.

Despite research challenges presented by a global pandemic, more than \$24 million in awards were awarded to Feinberg investigators for [COVID-19 related research](#).

“This record-breaking year for Feinberg’s sponsored research awards is a tribute to the creativity and innovative thinking of our investigators. This is especially so in a year where the challenge of a global pandemic could have been a great distraction. We can be sure that the discoveries enabled by this external support will contribute to improving the health of our patients,” said [Rex Chisholm, PhD](#), vice dean for scientific affairs and graduate education and the Adam and Richard T. Lind Professor of Medical Genetics.



Among the many ongoing COVID-19 related research projects at Northwestern Medicine, investigators have been ramping up production of a promising drug that has proven effective in obliterating SARS-CoV in cellular cultures.

Northwestern Opened Largest Biomedical Academic Research Building in U.S.

The **Louis A. Simpson and Kimberly K. Querrey Biomedical Research Center** is the largest new building solely dedicated to biomedical research at an American medical school. The 12-story building adds more than 625,000 square feet of research space to Northwestern's Feinberg School of Medicine and is designed for a future expansion that would allow it to more than double its size with up to 16 additional floors.

“Inside this modern new building, scientists will pioneer discoveries that will impact the practice of medicine and transform human health,” Dr. Eric G. Neilson, vice president for Medical Affairs and Feinberg's Dean, said in a statement. “Here, we will accelerate the pace of lifesaving medical science!”



Northwestern Investigators have Developed a Novel Vaccine that Utilizes a Specialized Group of B-Cells to Promote Anti-Tumor Immunity Against Glioblastoma, According to Findings Published in the *Journal Of Experimental Medicine*.

The vaccine, which is still in pre-clinical stages, is the first of its kind and may be an alternative to currently available immunotherapeutic approaches to treat the fatal brain cancer, according to Catalina Lee Chang, PhD, research assistant professor of Neurological Surgery and first author of the study.

“In the last hundred years, there have only been four FDA approved treatments for glioblastoma. We still measure survival in months rather than years, so there is a desperate need to make scientific advances,” said Maciej Lesniak, MD, chair and the Michael J. Marchese Professor of Neurosurgery and senior author of the study.

According to Lesniak, most immunotherapy research has historically focused on T-cells — immune cells that promote adaptive, long-term immunity against viral pathogens and cancer cells. However, previous work regarding B-cells, which support long-term immunity and can also produce antibodies to kill cancer cells, show more promise.

The National Cancer Institute’s five-year SPORE grant supports the advancement of translational research and improve outcomes for patients with brain cancer. Northwestern Medicine's Lurie Cancer Center, one of six programs in the U.S. to have received the competitive grant, is leading a brain cancer SPORE with a special emphasis on glioblastoma.

New Brain Tumor Imaging Developed by a Northwestern University Scientist Detects Smaller Tumors Sooner

Imaging doubles contrast between tumors and normal brain tissue

A new three-dimensional imaging technique has been developed that greatly improves the visibility of brain tumors in magnetic resonance imaging (MRI) scans. The new technique, invented by a scientist at Northwestern University Feinberg School of Medicine, will potentially enable earlier diagnosis of tumors when they are smaller and more treatable.

In a study of 54 patients with brain tumors [published](#) in *Science Advances*, the technique was found to provide a two-fold improvement in the contrast between tumors and normal brain tissue compared with existing MRI techniques in widespread use.

“Our goal is for the new technique—T1RESS—to help thousands of patients at high risk for cancer by allowing malignant tumors to be detected at an earlier, more curable stage,” said inventor and lead author [Robert Edelman, MD](#), clinical professor of [Radiology](#). “We also hope the improved visibility of the tumor margins on contrast-enhanced scans will result in better outcomes from surgery or radiotherapy.”

Skilled Surgeons Boost Colon Cancer Survival by 70%

Patients of more technically skilled surgeons, as assessed by review of operative video, have better long-term survival after surgery for the treatment of colon cancer, reports a new Northwestern Medicine study.

Patients whose surgery was performed by a highly skilled surgeon had a 70 percent lower risk of dying over five years compared to patients with a lower skilled surgeon, the study found.

Related audio: Listen to a [podcast](#) about this study.

“This is pretty mind blowing,” said lead author [Dr. Karl Bilimoria](#), professor of surgery at Northwestern University Feinberg School of Medicine and a Northwestern Medicine surgical oncologist. “The long-term effect is huge.”

Colon cancer is one of the most common cancers, with over 100,000 new cases diagnosed annually in the United States. In many cases, surgery is the primary treatment.

Further research is needed to determine whether efforts to improve surgical skill lead to improved technical skills and patient outcomes. Additionally, the actual methods to improve surgical skill need to be advanced and studied to determine whether they are effective at improving patient outcomes.

Bilimoria acknowledged the small study size but said, “Even in this size study, we see a large impact.”

Join a live discussion with a **Global Panel of Experts** to discuss how we can come together to manage the next global health crisis and care for our patients.

We hope to uncover and understand how each country responded with the goals of:

- Sharing unique country hospital experiences and responses
- Finding ways for continuous improvement during pandemics across hospitals
- Building vehicles to share developing learnings and observations in clinical care for future health crises

CHINA



Dr. Hongzhou Lu
Professor, Department of Infection and Immunity
Co-Director, Shanghai Public Health Clinical Center,
Fudan University



Dr. Wenhong Zhang
Chief, Department Center of Infectious Diseases,
Huashan Hospital of Fudan University

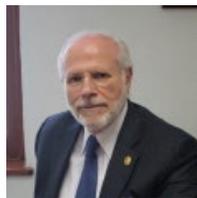
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Dr. Claudia Ruffini
Chief, Hospital Response Plan to Mass Casualty Incident and local EMS Unit
Luigi Sacco University Hospital

MEXICO



Dr. Enrique Ruelas
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International Institute for Health Futures

SOUTH KOREA



Dr. Ki Nam Jin
Professor,
Department of Health Administration,
Yonsei University

UNITED ARAB EMIRATES



Dr. Nawal Ahmed Mohamed Al Kaabi
Chief Medical Officer - Medical Affairs,
Sheikh Khalifa Medical City

UNITED STATES



Dr. Michael Ison
Professor, Infectious Diseases, Medical Director, Transplant & Immunocompromised Host Infectious Diseases Services,
Northwestern University



Dr. Enrique Schisterman
Senior Investigator and Epidemiology Branch Chief,
National Institutes of Health

Other Upcoming Breakthrough Webinar Series:

The Significant Impact of COVID-19 on the Heart

Dr. Clyde Yancy discusses concerns about long-lasting damage.

January 13, 2021

7:00 am US Central

For more information on any upcoming International Health events, please contact international@nm.org

A Message from the International Health Team



Jared C. Robins, MD
Medical Director,
International Health



Susan Helfrich, MBA, RN, BSN
Program Director,
International Health

We hope you are having a good summer in the midst of these challenging times. We want you to know that Northwestern faculty, staff, students and alumni are helping to lead the response to the global challenge that is the coronavirus pandemic.

From high-impact research, drug trials and innovative new projects, our scientists are helping mitigate COVID-19. In our communities, experts and volunteers are pitching in, performing tasks large and small to help lift up neighbors and those in need.

On campus, the fabric of the Northwestern University community is being remade in the digital space so everyone can work, learn and laugh together in ways that feed the soul and sustain us all.

We invite you to follow [Northwestern Now](#) for coverage of the pandemic and storytelling on how Northwestern is responding. As always, please feel free to reach out to Dr. Robins jared.robins@nm.org or Susan susan.helfrich@nm.org with any questions, thoughts or feedback on how we can better serve you.



Lindsey Kreutzer, MPH
Senior Practice Manager,
International Health

I am excited to join the International Health team and look forward to meeting with each of our international partners both virtually and in person. My previous position with Northwestern Medicine was as a Manager in Quality. I led a team responsible for implementing large scale, innovative quality initiatives across Northwestern Medicine utilizing rigorous quality and process improvement methodologies. I look forward to applying these skills in International Health as we continue to emphasize continuous quality improvement to further elevate the level of service we provide to our partners and every patient we serve. My educational background is in international studies and global health and it is paired with a personal love for travel and learning about new cultures. I am personally and professionally dedicated to International Health and am immensely excited to be part of this team.

COVID-19 has certainly provided many challenges not only for our patients but also for our team. It has required that our team work remotely which was a learning experience for us all. However, with each challenge there is also opportunity, and I've personally valued this time to meet and build a relationship with every member of our team. We are all dedicated to our work and cannot wait to be back in the office serving our patients. We've virtually celebrated every personal triumph of our patients whether it was a baby born to one of our IVF patients or an individual finally receiving a lifesaving organ. Our commitment is always to our patients near and far, and we are so excited to welcome you all back to Northwestern Medicine. Please always feel free to reach out to me with any questions, comments, or concerns at lindsey.kreutzer@nm.org.