UPDATE TO THE BOARD

in advance of the November 20, 2020,
Board of Trustees Meeting

KEY UPDATES

Rankings
Northwestern maintained the 9th spot overall in this year’s 2021 U.S. News & World Report Best Colleges ranking of National Universities, tied with Johns Hopkins University and Caltech. In the Wall Street Journal/Times Higher Education 2021 College Rankings (Top U.S. Colleges), Northwestern improved one spot to 10th from 11th last year. Northwestern’s rank in the four key global rankings that were released this year showed slight fluctuations from last year. Northwestern was ranked 24th this year in the Times Higher Education World University Rankings, a drop from last year’s 22nd spot. The QS World University Rankings placed Northwestern 29th in the world, an improvement from last year’s 31st ranking. In the Shanghai-based Academic Ranking of World Universities, Northwestern’s rank dropped to 30th this year from 29th last year. The 2021 U.S. News & World Report Best Global Universities ranking placed Northwestern 24th for the fourth consecutive year. Additional details about these rankings are provided in the following pages.

Feinberg physician elected to National Academy
Feinberg School of Medicine’s William Grobman, vice chair for clinical operations and the Arthur Hale Curtis, MD, Professor of Obstetrics and Gynecology, has been elected to the National Academy of Medicine (NAM). NAM, one of three academies that make up the National Academies of Sciences, Engineering, and Medicine, aims to improve health for all by advancing science, accelerating health equity and providing trusted and authoritative advice. Grobman’s scientific and clinical work focuses on prediction and prevention of adverse obstetric health outcomes, such as preterm birth and preeclampsia. This research includes evaluations of chronic stress and other social determinants of health. He also has focused on determining approaches to labor and delivery that can help to safely reduce the chance of cesarean delivery.

Northwestern names Vice President and Associate Provost for Diversity and Inclusion
Robin R. Means Coleman will be named Vice President and Associate Provost for Diversity and Inclusion, effective February 1, 2021. In this role, Coleman will report to the Provost and serve on the President’s senior staff as the University’s Chief Diversity Officer. She will be responsible for heading the Office of Institutional Diversity and Inclusion and leading and coordinating efforts to create a diverse, inclusive, equitable, accessible, and welcoming environment for all Northwestern University students, faculty, staff, administrators, trainees, and alumni. Coleman will also serve as the inaugural Ida B. Wells and Ferdinand Barnett Professor in the Department of Communication Studies in the School of Communication, with courtesy appointments in the Department of Radio/TV/Film in the School of Communication, and in the Department of African American Studies in the Weinberg College of Arts and Sciences.
Coleman currently serves as Professor and Vice President and Associate Provost for Diversity at Texas A&M University and was selected after extensive outreach to faculty, staff, students, and alumni was done by the search committee, which was chaired by Vice President for Human Resources Manuel Cuevas-Trisán and charged by Provost Kathleen Hagerty.

**COVID Updates**
Northwestern’s campus community has remained diligent and due to collective efforts, the campus-wide testing positivity rate has been below 0.6% for much of the fall. There was a slight uptick in late October to just below 1%. The positive cases primarily have been in small clusters of students, many resulting from off-campus social gatherings. There have been few documented cases of on-campus transmission among students, and none among students and faculty or staff. Kellogg School of Management held Evanston classes exclusively remotely from October 19-30 after several students tested positive for COVID-19 and more than 50 full-time Kellogg MBA students were identified as close contacts due to large gatherings off-campus. In-person and hybrid instruction resumed on Monday, November 2.

**Winter Quarter Updates**
On October 28, Northwestern announced to students, faculty, and staff plans for the winter quarter, which will bring back to campus all undergraduates, including the first- and second-year undergraduates who were not allowed back on campus during the fall quarter. Efforts are underway to determine housing assignments and course modalities. The majority of classes will continue to be remote due to space constraints and in order to socially distance. A Wildcat Wellness modified quarantine period (January 3-17) will precede the return to campus activity at the start of the winter quarter, as it did in the fall. In anticipation of the increased density on campus, health and safety protocols have been bolstered: the campus mask mandate has been strengthened and the number and frequency of tests of the campus community will be increased.

**FINANCIAL UPDATE**
The finance team continues to analyze and manage the pandemic’s financial impact on Northwestern. Management is also now focusing on the fiscal year end and the reporting and audit activities involved in measuring financial activity for 2020.

In October, Northwestern announced that it would resume university retirement contributions on January 1, 2021, at the same level (5% automatic and 5% matched) as before the suspension in June.

On October 28, the University announced that it would welcome first- and second-year students to campus in the Winter Quarter to join the third- and fourth-year undergraduates and graduate students already on campus. Financial impacts stemming from this decision, as well as from Fall Quarter decisions, were not included in the FY 2021 operating budget and continue to be quantified by management.

The FY 2021 operating budget assumed balanced operations. However, given the evolving nature of the pandemic and the resulting operational impacts, the approved FY 2021
budget reserved $25 million for incremental COVID-related expenses. This was accomplished through reduced unit appropriations while revenue-generating units were directed to generate surpluses where possible to offset any potential revenue shortfalls.

**Liquidity and Debt Management**
Treasury, Investments, and Budget and Planning continue to collaborate closely with respect to liquidity monitoring, planning, and debt management in support of the University’s operating and capital needs.

**Investments**
As of August 31, 2020, the Long-Term Balanced Pool had an estimated value of $11.3 billion based on preliminary returns. For the fiscal year, which runs from September 1, 2019, through August 31, 2020, the preliminary return of the Pool was 7.2%. Cash flows from illiquid investments for this fiscal year period have been slightly negative as calls outpaced distributions by $2.1 million.

The search for Northwestern’s next Chief Investment Officer is proceeding under the helm of Investment Committee chair Tim Sullivan and Senior Vice President Craig Johnson and with the guidance of a search committee that includes trustees and faculty. Interim leadership of the Investment Office is jointly held by four managing directors, with investment decisions made as a group under the guidance of Mr. Johnson.

**Development**
As of October 31, 2020, Northwestern raised $57 million in new gifts and commitments towards the $520 million fiscal year goal, compared with $55.1 million last year at the same time.

**RANKINGS**

**Northwestern maintains No. 9 ranking in 2021 U.S. News Best Colleges rankings**
In the ranking released in September, the top 10 universities were: Princeton (1), Harvard (2), Columbia (3), MIT (4), Yale (4), Stanford (6), Chicago (6), Pennsylvania (8), Northwestern (9), Johns Hopkins (9), and Caltech (9). This year, Northwestern had an overall index score of 93, a one point improvement from last year. The overall score is derived from the sum of weighted, normalized values across 17 indicators within the various ranking categories. This year, one point separates Northwestern’s 9th rank from Pennsylvania (8) while two points separate Northwestern from the two schools ranked 6th, Chicago and Stanford. One point also separates 9th ranked Northwestern from 12th ranked Duke. The scores of the top 13 ranked schools were very tightly grouped as the difference between the score of Princeton (100) and the score of Dartmouth (91), the 13th ranked school, was 9 points. Northwestern’s strongest position in any one ranking category continued to be in Faculty Resources, ranked 5th, and weighted at 20% of the overall score; the rank in this category has stayed in the top 10 since 2003. Northwestern’s rank in Financial Resources, weighted at 10%, improved two spots to 7th from 9th and has been in the top 10 for the sixth consecutive year. The rank in Alumni Giving, (3% weight), moved up to 10th from 12th with an average alumni giving rate of 31.4% (up from 30.9% last year). Within the Expert Opinion category, weighted
at 20%, Northwestern’s peer assessment score was 4.5 (out of 5), the same as last year. Northwestern’s rank in the Graduation and Retention measure (22% weight) within the Outcomes category, was 10th, the same as last year. Northwestern continues to place strongly within the Student Excellence category (7% weight) where test scores continue to improve in a similar manner as our peers.

**Northwestern improves to 10th in the WSJ/THE 2021 Colleges Rankings**
Northwestern improved one spot in the Wall Street Journal/ Times Higher Education 2021 College Rankings (Top U.S. Colleges) by moving up to 10th from 11th last year. The ranking was launched in 2016 and places focus on the success of students after graduation. This year, the top ten schools were: Harvard (1), MIT (2), Yale (3), Stanford (4), Brown (5), Duke (5), Caltech (7), Princeton (7), Cornell (9), and Northwestern (10). The ranking measures four key areas: Resources, Engagement, Outcomes, and Environment using a total of 15 separate indicators. Northwestern was ranked 7th for Resources, its strongest performance area, which includes the measures of finance per student, faculty per student, and research papers per faculty. Northwestern was ranked 48th for Engagement, which measures student engagement, student recommendations, interaction with teachers and students, and number of accredited programs. Northwestern ranked 11th for Outcomes, which measures graduation rate, value added to graduate salary, debt after graduation, and academic reputation. Lastly, Northwestern ranked 186th for Environment, which measures the proportion of international students, student diversity, student inclusion, and staff diversity.

**Northwestern maintains strong position across global rankings**
The four major global rankings, each with a considerable focus on measuring the research impact of universities, continues to rank Northwestern among the top 30 universities in the world. The Times Higher Education World University Rankings, a U.K.-based global ranking focused on research and teaching, ranked Northwestern 24th, down two spots from last year. Oxford (1), Stanford (2), Harvard (3), Caltech(4), and MIT (5) were the top five universities in this ranking. The QS World University Rankings, also a U.K.-based global ranking that stresses various reputational measures along with research metrics, ranked Northwestern 29th, up from 31st last year. MIT (1), Stanford (2), Harvard (3), Caltech (4), and Oxford (5) were the top five ranked institutions. Northwestern was ranked 30th in the Academic Ranking of World Universities that is produced by Shanghai Rankings, down from 29th last year. Harvard (1), Stanford (2), Cambridge (3), MIT (4), and UC-Berkeley (5) were the five top ranked institutions this year. Lastly, the U.S. News & World Report Best Global Universities ranking placed Northwestern 24th for the fourth consecutive year. The top 5 universities this year remain the same as last year: Harvard (1), MIT (2), Stanford (3), UC-Berkeley (4), and Oxford (5). This year, six of the top 25 universities in this ranking were from non-U.S. institutions: Oxford (5), Cambridge (9), Toronto (17), University College London (19), Imperial College London (20), University of Melbourne (25). The highest ranked university from China was Tsinghua University (28).
**RESEARCH UPDATE**

**Award Funding**
Northwestern’s research award funding for FY 2020 rose to $887.3 million, an 11 percent increase ($89 million) over the previous year. This makes Northwestern the largest academic research site in the state of Illinois. The number of awards totaled 3,428, representing a 4 percent increase from last year’s total (3,288).

**Research News**
Northwestern is key partner in $115 million national center to build revolutionary quantum computer
Northwestern quantum science leadership is playing a major role in a new national research initiative, with 17 faculty members from the Weinberg College of Arts and Sciences and the McCormick School of Engineering contributing expertise in physics, materials science, and electrical and computer engineering. In August, the U.S. Department of Energy’s Fermi National Accelerator Laboratory was selected to lead one of five national centers to bring about transformational advances in quantum information science as a part of the U.S. National Quantum Initiative. The initiative provides the new Superconducting Quantum Materials and Systems Center (SQMS) at Fermi with a five-year $115 million commitment from the Department of Energy to build and deploy a quantum computer based on superconducting technologies. The research will focus on breakthroughs important for medicine, life sciences, national security, and physics. The center also will develop new quantum sensors that could lead to the discovery of the nature of dark matter and other elusive subatomic particles. Anna Grassellino of Fermilab, who has a joint appointment at Northwestern as a faculty member in the department of physics and astronomy, is the center’s director. James Sauls, professor of physics, is the center’s deputy director. Sauls and Grassellino also co-direct the Center for Applied Physics and Superconducting Technologies (CAPST), another Northwestern-Fermi collaboration that helped lead to the new large national center. In addition to the researchers involved in the SQMS Center, Northwestern also has three faculty members affiliated with one of the other newly funded National Quantum Initiative centers — Q-NEXT at Argonne National Laboratory. “The role of chemists and materials scientists in Q-NEXT is making new materials and studying their properties,” said Michael Wasielewski, the Clare Hamilton Hall Professor of Chemistry, one of those affiliated with the Argonne center. “Exquisite atom-by-atom control is desirable to create a new material that has the right functionality...designing from scratch what you want, rather than just taking what nature gives you.”

Physicist receives prestigious Packard Fellowship
Northwestern University physicist Timothy Kovachy has received a 2020 Packard Fellowship for Science and Engineering from the David and Lucile Packard Foundation. The prestigious fellowship includes an unrestricted grant of $875,000 over five years to pursue innovative and experimental research. Kovachy’s group is developing atom interferometers, in which each atom is placed in a quantum superposition of two macroscopically separated locations at the same time. These instruments offer the potential to probe quantum mechanics in an unexplored regime, search for dark matter and detect gravitational waves in a new frequency range. The Packard Fellowships for
Science and Engineering are among the nation’s largest nongovernmental fellowships, designed to allow maximum flexibility in how the funding is used.

**New leadership at longstanding Northwestern University Research Institutes and Centers**

Effective Sept. 1, two distinguished faculty members have been appointed to direct a pair of the University’s long-running research centers, designed to spur cross-disciplinary investigation. Award-winning author and Board of Trustees Professor of English in the Weinberg College of Arts and Sciences Chris Abani now leads the Program of African Studies (PAS), while chemical engineer Justin Notestein leads the Center for Catalysis and Surface Science (CCSS). In total, more than 40 University Research Institutes and Centers (URICs) exist, attracting talent from throughout Northwestern. PAS was founded in 1948 and is considered the first formally established academic program of African Studies in the U.S. CCSS has a celebrated history dating back nearly four decades. Affiliated with Northwestern’s Institute for Sustainability and Energy (ISEN) since 2014, CCSS promotes boundary-spanning research fundamental to the discovery and controlled synthesis of catalysts that help optimize the sustainability of industrial and consumer goods.

**Parneshia Jones named director of Northwestern University Press**

Parneshia Jones, who has advanced Northwestern University Press as editor for the last two decades, was named its new director in September. An Evanston native and a published poet, Jones joined NUP in 2003 as marketing assistant and served in several progressively more responsible positions. She revitalized the Press’s storied TriQuarterly imprint, developing its award-winning poetry list with several exceptional acquisitions. In addition to her publishing work, Jones is on faculty in the Vermont College of Fine Arts MFA in Writing Program. Her contributions to the Chicago literary community were cited by *NewCity* in its 2019 list “Lit 50: Who Really Books In Chicago 2019.” She also serves on the advisory board of ShoreFront Legacy Center, a nonprofit organization and foundation that documents African American history on the North Shore of Chicago. Jones becomes one of only two Black women currently leading a university press.

**Research Highlights**

**Inflammation linked to Alzheimer’s**

A new Northwestern study provides a missing link between inflammation and protein deposits that contribute to Alzheimer’s disease, according to findings published Sept. 2 in *Nature*. These findings will help future investigation of underlying mechanisms and treatments for Alzheimer’s disease, said Robert Vassar, the Davee Professor of Alzheimer Research and a co-author of the study. Amyloid-beta fragments are believed to be one of the main causes of Alzheimer’s disease, accumulating in the brain and leading to brain cell death. Production of amyloid-beta is known to be controlled by the γ-secretase enzyme complex, a protease complex that also regulates a variety of other mechanisms. Inhibiting the complex’s production of amyloid-beta while preserving other functions has been studied as an emerging therapeutic strategy. The Northwestern research findings reveal a mechanism in which γ-secretase is modulated by neuroinflammation via IFITM3 and the risk of Alzheimer’s disease is thereby increased. “Our study suggests that anti-inflammatory drugs that cross the blood-brain barrier may
lower IFITM3 levels and reduce amyloid-beta production, which should delay the onset and progression of Alzheimer’s disease,” Vassar said.

Improving immunotherapy for breast cancer
Treatmnt-resistant breast cancer could be made vulnerable to immunotherapy by flipping a metabolic “switch,” according to a Northwestern Medicine study published in Cancer Discovery. This strategy could represent a breakthrough in treating tumors that otherwise don’t respond to cancer immunotherapy, according to Yong Wan, PhD, professor of Obstetrics and Gynecology in the Division of Reproductive Science in Medicine and senior author of the study. “This model could be very attractive for treating triple-negative breast cancer,” said Wan, who is also a professor of Pharmacology and a member of the Robert H. Lurie Comprehensive Cancer Center of Northwestern University. Xinxin Song, MD, PhD, and Zhuan Zhou, PhD, were co-first authors of the paper. In the current study, Wan and his collaborators analyzed protein levels in 81 patients with triple-negative breast cancer, a form of breast cancer that does not respond to most therapies. They found that high levels of an immune-dampening protein called B7-H4 correlated with worsening disease progression and resistance to immunotherapy. “This protein is very involved in ‘don’t eat me’ immune signaling,” Wan said. “This behavior suggests it could be a good target.” By degrading the protein, the researchers hope to inhibit aspects of its action to produce results that might have clinical use.

Breast and ovarian cancer drug extend prostate cancer survival
Men with metastatic, hormone-resistant prostate cancer who were treated based on the genetic makeup of their cancer survived significantly longer than those treated with traditional hormone treatments, according to a large, international phase 3 clinical trial co-led by investigators from Northwestern Medicine, The Institute of Cancer Research in London and The Royal Marsden NHS Foundation Trust. The study was published September 20 in the New England Journal of Medicine. “Our results show genetically targeted treatment can extend the lives of patients with advanced prostate cancer that has progressed after several types of therapies, including hormone therapy,” said Northwestern Medicine oncologist Dr. Maha Hussain, co-leader of the PROfound trial, which investigated the drug Olaparib, found to extend survival about 5 months in some cases. “We are now entering a new era of personalized care and precision medicine for metastatic prostate cancer. This will change clinical care for prostate cancer.” Hussain is the Genevieve E. Teuton Professor of Medicine at the Feinberg School of Medicine. She also is deputy director of the Robert H. Lurie Comprehensive Cancer Center of Northwestern.

Uncovering racial differences in genomic profiles of prostate cancer
Black men with metastatic prostate cancer were more likely to have tumor mutations than white or Asian men, according to findings published in The New England Journal of Medicine. These findings highlight the significance genetic drivers have in increasing one’s risk for developing aggressive prostate cancer. “This study provides insight into the differences in the biology of the tumors based on an individual’s race, different genetic mutations that may act as drivers of cancer aggressiveness and, in the future, hopefully result in more precision medicine-based treatment approaches,” said Edward Schaeffer, MD, PhD, chair and the Edmund Andrews Professor of Urology, and a co-
author of the study. “Prostate cancer is hormonally driven and the enhanced alterations in the androgen receptor may suggest that tumors from black men may exhibit differences in responses to hormonal suppression, a foundational treatment for some prostate cancers,” said Schaeffer, who is also a member of the Robert H. Lurie Comprehensive Cancer Center of Northwestern.

**Study: White Americans still vastly overestimate racial progress**

A recent Northwestern study is shedding light on how differences in perception based on race may be hindering social progress. In 2016, a Black family on average had $10 in wealth for every $100 in wealth the average white family had. But white Americans, on average, thought the wealth figure was about $70. The discrepancy in perception among white Americans shows a far more optimistic view of the racial progress that has been made since the 1960s, according to a new study by Ivy Onyeador, a professor at the Kellogg School of Management. In 1963, for every $100 in wealth a white family had, the average Black family had around $5. White Americans thought it was $38. Onyeador set out to see what interventions could correct this perception gap, since robust policies to address racial inequality may face obstacles if underestimates of the economic gap may make it difficult to garner support for large-scale initiatives to address these disparities. Onyeador invited study participants to read articles about systemic racism and how it affects outcomes for Black Americans and other racial minorities. “We wanted participants to read about the persistence of racial discrimination in the United States so we could see whether that would improve their perception of racial inequality,” Onyeador said. The study, “Disrupting Beliefs in Racial Progress: Reminders of Persistent Racism Alter Perceptions of Past, But Not Current, Racial Economic Equality,” was published recently in the journal *Personality and Social Psychology Bulletin.*

**New model examines how societal influences affect U.S. political opinions**

Northwestern researchers have developed the first quantitative model that captures how politicized environments affect U.S. political opinion formation and evolution. Using the model, the researchers seek to understand how populations change their opinions when exposed to political content, such as news media, campaign ads and ordinary personal exchanges. Though modeling social behavior dates back hundreds of years, most quantitative models rely on network science, which simulates person-to-person interactions. The Northwestern team takes a different, but complementary, approach. The researchers break down all interactions into perceptions and reactions. A perception accounts for how people perceive a politicized experience based on their current ideology. The math-based framework is flexible, allowing future data to be incorporated as it becomes available. “It’s really powerful to understand how people are influenced by the content that they see. [Doing so] could help us understand how populations become polarized, which would be hugely beneficial,” said David Sabin-Miller, a Northwestern graduate student who led the study. “Quantitative models like this allow us to run computational experiments,” said Associate Professor of Engineering Sciences and Applied Mathematics Daniel Abrams, the study’s senior author. “We could simulate how various interventions might help fix extreme polarization to promote consensus.” The paper was published on Oct. 1 in the journal *Physical Review Research.* Sabin-Miller is a graduate student in Abrams’ laboratory.
New presidential election forecast runs hourly predictions
A Northwestern University data scientist has developed a novel forecasting platform that updates hourly the odds of President Donald Trump or Joseph Biden winning this year’s presidential election, simulating 1 million hypothetical elections per hour using a betting market. With this level of precision, viewers can see how single events might affect the potential outcome of the U.S. presidential election. “It works so well that I barely have to turn on the news,” said Northwestern’s Thomas Miller, who developed the forecast platform. “I just watch the time series of election forecasts, and, if I see a big jump, then I know something significant has happened.” Miller is faculty director of the master’s in data science program in Northwestern’s School of Professional Studies. He first developed his forecasting system for baseball. But when the novel coronavirus pandemic truncated the 2020 season, he decided to look at the U.S. presidential election instead. “Instead of simulating games, I’m simulating the election,” Miller said. The final prediction made just prior to the opening of the polls on the east coast stated that the Democratic ticket had a 75.7% chance of winning the election.

Survey shows why 2020’s ‘Election Day’ might turn into ‘Election Week’
A new Northwestern survey indicates rationale for unpredictable results at the end of election night on Nov. 3. The researchers, who surveyed more than 20,300 Americans between Sept. 4-27, find a substantial increase in the number of those who say they plan to vote using mail-in or absentee ballots. They estimate 82 million voters will cast such ballots in the 2020 U.S. presidential election, six times more than those who did in 2016. The research findings also reveal a deep partisan divide when it comes to preferences for how people plan to vote: 68 percent of those who favor Trump say they will turn out on Election Day to cast their ballot versus just 23 percent who favor Biden. But likely voters overall favored Biden by 50 percent to 40 percent. “It is conceivable that Trump will be winning at the end of the Election Day but will lose once all the votes, including mail-in or absentee, are counted,” said James Druckman, the Payson S. Wild Professor of political science in the Weinberg College of Arts and Sciences and member of Northwestern’s interdisciplinary Institute for Policy Research.

Research shows link between criminal arrests and ‘America First’ ideology
Northwestern research has shown an association between lifetime criminal arrests and a belief in a form of political populism known as “America First,” which reflects economic frustrations and resistance against internationalism and “outsiders.” A new study by Northwestern sociology and law researchers sheds light on this relationship. John Hagan is the John D. MacArthur Professor of Sociology and Law in the Weinberg College of Arts and Sciences and a faculty associate in the Institute for Policy Research at Northwestern, as well as a research professor at the American Bar Foundation. He is co-author of the study with professor Ron Levi and Ph.D. candidate Ioana Sendroiu, both at the University of Toronto.

Scientists detect first-of-its-kind ‘intermediate-mass’ black hole
An international research collaboration including Northwestern astronomers has witnessed the birth of an “intermediate-mass” black hole. This is the first conclusive discovery of this object that has long eluded astronomers. The cosmic event, its energy detected on Earth in the form of gravitational waves, is the most massive black hole
merger yet observed in gravitational waves. Two black holes likely collided and merged to create a more massive black hole with a final mass 142 times that of the sun, or 142 solar masses. “One of the great mysteries in astrophysics is how do supermassive black holes form?” said Christopher Berry, the CIERA Board of Visitors Research Professor in Northwestern’s CIERA (Center for Interdisciplinary Exploration and Research in Astrophysics) and an LSC Editorial Board reviewer for the discovery paper. Chase Kimball, also an LSC member and a Northwestern astronomy Ph.D. student, contributed to the analysis of the astrophysical origins of the phenomenon dubbed GW190521 in the implications paper. Kimball is co-advised by Berry and Vicky Kalogera, the principal investigator of Northwestern’s LSC group, director of CIERA and the Daniel I. Linzer Distinguished University Professor of Physics and Astronomy in the Weinberg College of Arts and Sciences.

New technique co-crystallizes different molecules to make two-photon excited near-infrared materials
Northwestern researchers have developed a new low-cost, relatively simple strategy for designing materials used in live cell imaging, photodynamic therapy for cancer and night-vision technologies. For these applications, scientists use specialized materials that absorb and emit near-infrared light. Compared to visible light, near-infrared light can penetrate materials deeper with lesser scattering and cause lower levels of photo damage. To develop these materials, researchers currently use a chemical synthesis process that modifies the molecular structure. The Northwestern approach only needs to co-crystallize two different molecules — a convenient and efficient method based on supramolecular chemistry. The paper was published Sept. 15 in the journal *Nature Communications*. “Our work simplifies the production process and lays a foundation for practical application,” said Fraser Stoddart, senior author of the study and a Nobel Prize-winning chemist and the Board of Trustees Professor in the Weinberg College of Arts and Sciences. “This strategy will appeal to scientists working in a wide range of disciplines — from chemistry to crystal engineering to materials science.” Yu Wang, a postdoctoral fellow in Stoddart’s laboratory, is the paper’s first author.

‘Like a fishing net,’ nanonet collapses to trap drug molecules
A team of Northwestern researchers has discovered a new, rapid method for fabricating nanoparticles from a simple, self-assembling polymer. The approach presents novel possibilities for diverse applications, including water purification, diagnostics and rapid generation of vaccine formulations, which typically require many different kinds of molecules to be captured or delivered simultaneously. Using a polymer net that collapses into nanoscale hydrogels (or nanogels), the method efficiently captures more than 95 percent of proteins, DNA or small molecule drugs — alone or in combinations. By comparison, other nanoparticle delivery systems typically load between 5 and 20 percent. “We use a polymer that forms a wide net throughout an aqueous solution,” said McCormick School of Engineering’s Evan A. Scott, who led the study and who is the Kay Davis Professor of Biomedical Engineering. “Then we induce the net to collapse. It collects anything within the solution, trapping therapeutics inside of nanogel delivery vehicles with very high efficiency.” Fanfan Du, a postdoctoral fellow in Scott’s laboratory, says the method “works like a fishing net, which first spreads out due to electrostatic repulsion and then shrinks upon hydration to trap ‘fish.”’ The paper was published Sept. 29 in the journal *Nature Communications*. Northwestern professors
COVID-19 News and Research

COVID ventilator patients can have permanent nerve damage

Severely ill COVID-19 patients on ventilators are placed in a prone (face down) position because it’s easier for them to breathe and so reduces mortality. But that life-saving position can also cause permanent nerve damage in these vulnerable patients, reports a newly accepted study from Shirley Ryan AbilityLab and Northwestern Feinberg School of Medicine. Scientists believe the nerve damage is the result of reduced blood flow (due to coagulated blood) and inflammation. Other non-COVID-19 patients on ventilators in this position rarely experience any nerve damage. The study has been accepted by the British Journal of Anaesthesia. “It’s shocking how big a problem it is,” said lead investigator Dr. Colin Franz, a physician-scientist at Shirley Ryan AbilityLab and an assistant professor of physical medicine and rehabilitation and neurology at Feinberg.

“This is a much higher percentage of patients with nerve damage than we’ve ever seen in any other critically ill population. Ordinarily, very sick people can tolerate the position that helps their breathing. But COVID patients’ nerves can’t.” Franz and colleagues have been performing some therapeutic nerve stimulation, which has shown in other work to help regrow nerves. Franz collaborates on this research with John Rogers, biomedical engineer at Northwestern’s McCormick School of Engineering, and Dr. Sumanas Jordan, an assistant professor of surgery at Feinberg and a Northwestern Medicine plastic surgeon.

Social media contributes to misinformation about COVID-19

Those receiving their news from social media are more likely to believe misinformation about coronavirus conspiracies, risk factors and preventative treatments, according to the latest survey results examining Americans’ attitudes and behaviors around COVID-19. Of the 21,000 individuals surveyed across the nation between Aug. 7 and 26, 28 percent of Snapchat users, 23 percent of Instagram users and 25 percent of Wikipedia users believed inaccurate claims. Of the 8 percent surveyed who received news from Facebook Messenger in the previous 24 hours, 26 percent were likely to believe a false claim. That number was 31 percent for those surveyed who used WhatsApp. In contrast, the lowest levels of misperceptions emerged for those who received news about the pandemic from local television news, news websites or apps, and community newspapers (11 percent in each case). “The results confirm the initial fears that social media would contribute to misinformation about COVID-19. This misinformation may in turn have dire consequences when it comes to individual behaviors and group attributions,” said Northwestern’s James Druckman, the Payson S. Wild Professor of political science in the Weinberg College of Arts and Sciences and member of the University’s Institute for Policy Research. Druckman is part of the university consortium among Northwestern, Harvard, Northeastern and Rutgers conducting the survey.
ACADEMIC AFFAIRS UPDATES

The Graduate School Updates
Graduate School Funding
The Graduate School (TGS) is focused on preserving graduate student funding. Even while the school’s operating budget was reduced, the financial aid budget has been increased, which included increasing the base stipend rate for PhD and MFA students by 2% to $33,504 for the 2020–21 academic year. TGS also partnered with Human Resources, Treasury Operations, and the Office of Budget and Planning to ensure international PhD and MFA students studying virtually from outside of the United States would retain their stipends via wire transfer payments, whereas many universities opted to suspend stipends for this student population. TGS is proud of the fact that over the past year, more than 260 PhD students have been awarded external fellowships. Sources of support range from private foundations to government agencies, including the National Science Foundation (NSF), Fulbright, the Mellon Foundation, the American Heart Association (AHA), the Social Sciences and Humanities Research Council (SSHRC), and NASA.

New Benefits Package for Postdoctoral Trainees
The Graduate School’s Office of Postdoctoral Affairs, in partnership with Human Resources, has launched a comprehensive new benefits package for postdoctoral trainees. This package allows all postdoctoral trainees to receive equivalent benefits, regardless of funding source, including Blue Cross Blue Shield health insurance, dental, vision, short- and long-term disability, and childcare assistance. A “buy-up” option provides an even higher level of in-network coverage. By placing all postdoctoral trainees into one benefits pool, TGS offers a better benefits package at a lower cost to the University with lower out-of-pocket premiums. This includes improved health insurance options, childcare assistance, and disability options for National Research Service Award (NRSA) and other direct grant-funded postdoctoral trainees who are not technically University employees.

Northwestern University – Qatar
NU-Q Student scholars win Prestigious Rosalynn Carter Fellowships for Mental Health Journalism to explore the topic in Qatar
Two Northwestern Qatar students – Inaara Gangji and Maryam Abujbara – have been selected as student scholars for a global mental health journalism program sponsored by the Carter Center. As student scholars, Gangji and Abujbara will receive intensive training and mentorship from mental health and journalism experts working at the Carter Center.

Administrative Update

Global Marketing and Communication
Rankings Promotion
As Northwestern maintained its number 9 spot in the U.S. News & World Report 2021 Best Colleges rankings for a second consecutive year and its third consecutive year in the top ten, OGMC leveraged this opportunity by sharing across channels. OGMC published a story on Northwestern Now, shared across social media, and encouraged influencers
to amplify. This resulted in strong reach and engagement with overwhelmingly positive engagement, including total influencer followers this year that were 4 times higher than the previous year (up from ~75K to ~341K).

Positive Behavior Campaign Update
Since OGMC launched the University-wide internal communications campaign to encourage positive and healthy behaviors of the Northwestern community under the umbrella theme line We’re N This Together, supporting efforts have included social media promotion across multiple platforms, a mask-shaped banner with theme line installed on the Weber Arch, signage for placement across both campuses and in local Evanston businesses, and the creation of a style guide to all schools and units for unified messaging. OGMC then rolled out a University leadership video series on Instagram reinforcing model behavior featuring President Schapiro, Coach Fitzgerald, and Dean Montgomery. The inspirational video series reached more than 221K users and the ongoing leadership video series reached more than 50K users thus far.

Top News Stories
Due in large part to COVID-19, Northwestern more than doubled its annual mentions in traditional media in FY 2020 compared to the previous year, with nearly 4,000 mentions in OGMC’s 75 priority news outlets and a total reach of 6.8 billion. Since August 31, top stories include Igor Koralnik’s study finding that COVID-19 alters the mental state of a majority of hospitalized patients (reach: 65 million); commentary by medical experts including Sadiya Khan, Kelly Michelson, Michelle Pricket and others on President Donald Trump’s COVID-19 diagnosis (reach: 59 million); mentions of alumna Joan Larsen, who was on the short list of potential nominees to replace Supreme Court Justice Ruth Bader Ginsberg (reach: 41 million); Vicky Kalogera and Christopher Berry’s involvement in detecting and confirming the existence of intermediate mass black holes (reach: 22 million); and Josiah Hester’s development of a battery-free Game Boy that draws power from players pushing its buttons (reach: 17 million).

Return to Campus Communications and Website Enhancements
OGMC continues to update the COVID-19 and Campus Updates website for top-level messaging and developments. As students, faculty and staff returned to campus for Fall Quarter, it was used to house vital information about community health measures, including testing protocols and health-tracking requirements. In September, the COVID dashboard was enhanced to include testing figures on a biweekly basis. The sites are heavily utilized; since August 31, there have been more than 33,000 pageviews to the COVID dashboard alone. Northwestern also introduced the innovative new Symptom Tracker app, available on the web, and iPhone and Android devices.

Diversity and Inclusion
In partnership with leaders from across Northwestern, OGMC is developing holistic communications surrounding diversity, equity and inclusion (DEI) and the University’s social justice commitments. These efforts include long-term communications planning, a website and an inclusive language style guide. As DEI is a key focus for this academic year, OGMC has also collaborated with the Office of the Provost to leverage faculty expertise in this area through webinars on trending topics and other earned media opportunities, such as DEI-focused press kits.
Athletics Update

Big Ten Football
Northwestern and the rest of the Big Ten Conference kicked off the 2020 football season the weekend of October 24, and the Wildcats opened the campaign with the program’s most decisive Conference victory in 50 years (43-3 vs. Maryland). The win was the 100th career victory for Dan & Susan Jones Family Head Football Coach Pat Fitzgerald. Northwestern is currently undefeated this season, having scored a second win on October 31 (21-20 vs. Iowa) and a third on November 7 (21-13 vs. Nebraska) and ranked 23rd in the AP Top 25 college football rankings poll. The resumption of play followed the institution of league-wide COVID-19 antigen testing across the Big Ten’s 14 schools.

Northwestern To Host NCAA Basketball Regional
Northwestern University was selected to host two rounds of the 2026 NCAA Division I Men’s Basketball Tournament in Chicago, with the Regional Semifinals (Sweet 16) and Regional Final (Elite 8) to be contested at the United Center.

Ken Kraft (1935-2020)
The Wildcats community mourned the loss of wrestling legend Ken Kraft. Kraft capped his Northwestern undergraduate career with a Big Ten championship in 1957 and spent 22 years as the ‘Cats head wrestling coach. He eventually became an associate athletic director, a role he held until retiring in 2004 after 57 years of service, and twice filled the role of acting athletic director (1980, 1993.)