



DEPARTMENT OF SURGERY

FISCAL YEAR 2023 ANNUAL REPORT

Northwestern Memorial Hospital

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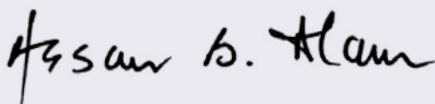
MESSAGE FROM THE CHAIR

Dear colleagues and friends,

Fiscal year 2023 (September 2022 to August 2023) marked a period of tremendous accomplishments in the Northwestern Medicine Department of Surgery. We are proud of the highlighted success stories of our faculty, trainees, students and staff.

We emphasize our high number of surgical procedures, an increase in National Institutes of Health (NIH) funding and number of grant proposals, as well as our top-ranked clinical and training programs. We have continued our expansion phase with recruitment of top talent across all divisions, thereby shaping the future of the department. And we are executing on several tactics to support strategic priorities in our five domains: Faculty Development and Diversity, Education, Research and Innovation, Clinical Operations and Regional Integration.

Our aim is to serve as a global leader in the field of surgery through innovations in person-centered care, research and education. Achieving this goal is not possible without the talents and efforts of our team. As we enter our 165th year as a department, I am incredibly proud of what we have done so far, and I look forward to working together to reach even greater heights. This report is a summary of our accomplishments over the last fiscal year. Thank you for taking the time to review it.



Hasan B. Alam, MD
Loyal and Edith Davis Professor of Surgery
Professor of Cell and Developmental Biology
Chair, Department of Surgery, Northwestern University
Feinberg School of Medicine
Surgeon-in-Chief, Northwestern Memorial Hospital



DEPARTMENT MISSION AND VISION STATEMENTS

The Northwestern Medicine Department of Surgery is committed to delivering world-class, comprehensive and equitable surgical care; attracting and nurturing the talents of students, residents and fellows; and conducting groundbreaking basic and translational research. Our mission and vision statements guide us on our path to continued excellence.

Mission

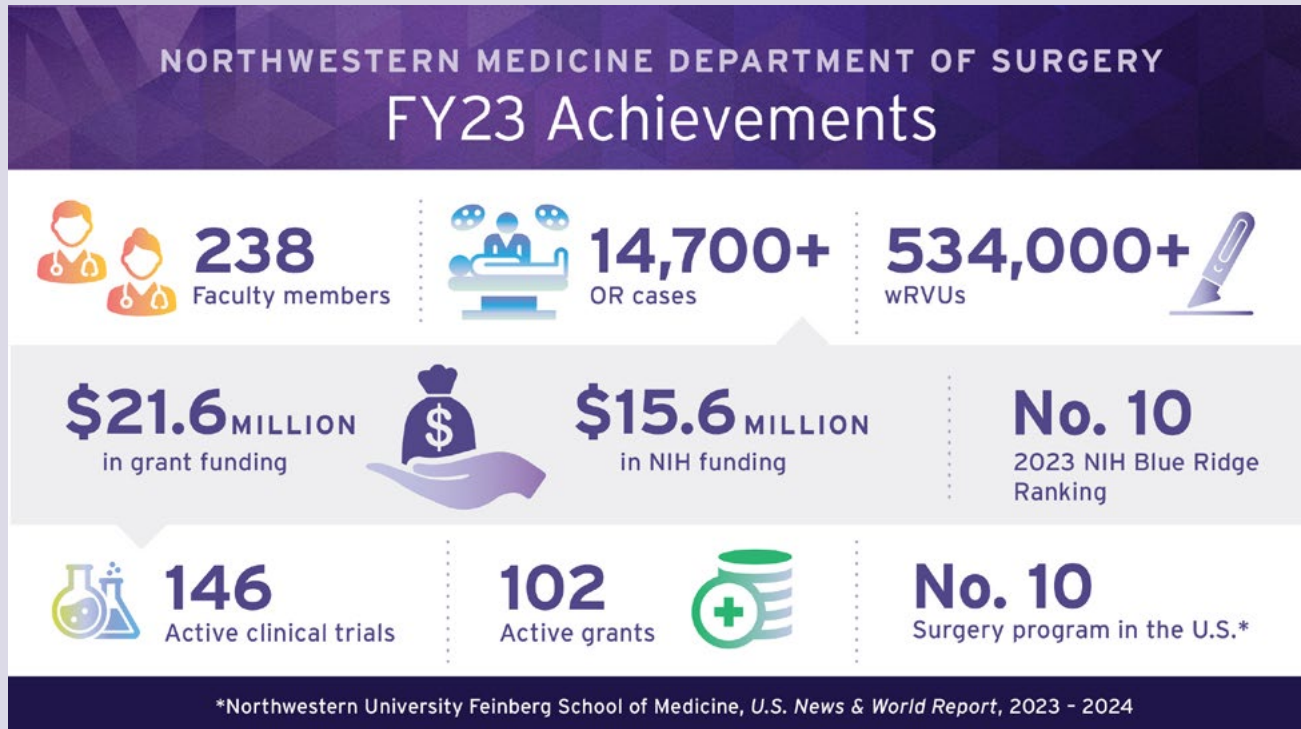
To be a distinguished surgical department that delivers comprehensive and innovative care within an integrated academic health system, conducts research that defines the future of surgery, trains the next generation of surgical leaders, and emphasizes diversity, equity and inclusion in all that we do.

Vision

Within a diverse, inclusive and equitable environment, we will:

- Provide the highest-quality, evidence-based, comprehensive and compassionate patient care across a broad range of surgical specialties;
- Develop leaders in academic surgery through state-of-the-art training programs which are conducive to outstanding education for all learners across the career continuum;
- Expand the frontiers of knowledge by advancing research, innovation, creativity, collaboration and the translation of surgical sciences to patient care.

DEPARTMENT OF SURGERY BY THE NUMBERS



Work relative value units (wRVUs)

- 534,015, a 5% increase from FY22

FY23 revenue

- \$58,944,196, a 10.6% increase from FY22

Operating room (OR) utilization

- Monthly department utilization average: 86%
- Monthly total utilization average: 86%

Outpatient performance metrics

- Average new patient lag days: 40.3
- Fill rate: 84.4%*
- Comprehensive utilization: 75.9%**

Inpatient performance metric

- Inpatient observed-to-expected ratio improved to 1.01 in FY23 from 1.09 in FY22

Likelihood to Recommend (LTR) scores

- LTR location: 89.9
- LTR provider: 91.5

*Fill rate is the percentage of available and held slots used to see patients, calculated as the number of patients who arrived for appointments divided by number of available or held slots.

**Comprehensive utilization is the percentage of the master template with patients scheduled, calculated as the number of appointments scheduled divided by number of templated slots, including available, held and unavailable slots.

DEPARTMENT OF SURGERY ORGANIZATION

Department Leadership



Hasan B. Alam, MD
Chair



Cord Sturgeon, MD
Vice Chair, Clinical Integration



Jason Hyunsuk Ko, MD
Vice Chair, Clinical Operations



Karen J. Ho, MD
Director, Resident Research



Amy L. Halverson, MD
Vice Chair, Education



Julie Johnson, MSPH, PhD
Scientific Director, NQUIRES



Daniela P. Ladner, MD
Vice Chair, Research



Andrew Hoel, MD
Director, Mid-Career Development



Dinee C. Simpson, MD
Vice Chair, Faculty Development
and Diversity

Division Leadership



Michael Shapiro, MD
Division Chief, Acute Care Surgery



Satish Nadig, MD, PhD
Division Chief, Organ Transplantation



Nora Hansen, MD
Division Chief, Breast Surgery



Thomas Inge, MD, PhD
Division Chief, Pediatric Surgery



Douglas R. Johnston, MD
Division Chief, Cardiac Surgery



Gregory Dumanian, MD
Division Chief, Plastic Surgery



Vitaliy Poylin, MD
Section Chief, Colorectal Surgery



Joseph Herrold, MD
Director, Surgery Clerkship



Scott Strong, MD
Division Chief, Gastrointestinal Surgery



Tadaki Tomita, MD
Associate Director, Surgery Clerkship



Leah Tatebe, MD
Program Director, General Surgery
Residency



Jeffrey Wayne, MD
Division Chief, Surgical Oncology



Yue-Yung Hu, MD, MPH
Associate Program Director, General
Surgery Residency



Ankit Bharat, MD
Division Chief, Thoracic Surgery



Samuel Kim, MD
Associate Program Director, General
Surgery Residency



Mark K. Eskandari, MD
Division Chief, Vascular Surgery



Eric Hungness, MD
Section Chief, MIS and General Surgery

DOMAINS

Department of Surgery vice chairs highlight fiscal year 2023 accomplishments and describe goals for the coming year.

REGIONAL INTEGRATION



Update by Vice Chair Cord Sturgeon, MD

In the past year, several tactics have been used to pursue the systemwide integration goal of achieving superior patient outcomes through cross-regional coordination and collaboration among surgeons.

The process for surgeons to obtain temporary surgical privileges at any of Northwestern Medicine hospitals has been streamlined. As a result, surgeons can make timely visits to other NM facilities to participate in proctoring and mentoring activities on challenging cases.

Cross-regional participation on value analysis committees led to the discovery and remediation of an ineffective suture product. Coordination with the systemwide COVID Testing Group led to a rational and data-driven rollback for preprocedure COVID testing requirements across NM in April. Strategic recruitment activities included interviewing more than 20 surgeons for critical clinical roles to support the largest expansion of surgical faculty in the past decade.

We have been exploring innovative technology for use across NM, such as a virtual intraoperative consulting system. In the coming months, we will be working to increase awareness and involvement in the virtual educational activities offered through the Department of Surgery. In addition, established continuing medical education (CME) activities, such as service-line-specific tumor boards and journal clubs,



will be leveraged to better connect specialist surgeons across the system. We will work with the Surgical Services Key Initiative Group on the standardization and promotion of credentialing, quality and safety processes, and OR efficiency metrics for the system. The expansion of Enhanced Recovery After Surgery (ERAS) protocols across the system can be facilitated as well. One tactic to address efficiency and quality will be to expand the familiarity and use of the OR Operations Dashboard by surgical leaders across the system. In the coming months, surgeons will be identified within those service lines with existing cross-regional connections to serve as systemwide liaisons.

FACULTY DEVELOPMENT AND DIVERSITY



Update by Vice Chair Dinee C. Simpson, MD

In our FY23 strategic plan for the domain of Faculty Development and Diversity, we committed to achieving our multifaceted goals through intentional tactics. For faculty development, a primary objective was to foster a culture of mentorship, transcending all levels of faculty rank. This initiative involves the creation of discrete programs designed to both support and measure the impact of mentorship across the department. A specific focus will be skill development for new faculty, termed FAST (Faculty Advancement and Skill Training).

Furthermore, in the pursuit of fostering mentorship, we will also create communities of mentors through targeted development efforts. The goal is to promote a collaborative and supportive environment throughout the faculty.



Simultaneously, the department aims to enhance diversity, equity and inclusion (DEI) by actively recruiting, retaining and promoting faculty, trainees and staff members who are reflective of the rich racial, ethnic and gender diversity present in the communities we serve in the greater Chicago area. To execute these aspirations, we revamped our recruitment tactics, paying attention to committee structure, breadth of advertising, diversity and lived experience. The commitment to DEI extends beyond the workforce to surgical health equity interventions that address disparities in patient populations. The identification of champions and the development of culturally sensitive care programs will play a pivotal role in surgical health equity work.

A culture of inclusion, belonging and wellness is paramount to the above-mentioned domains. A major tactic to better understand and enhance our culture will be to implement a departmentwide assessment that will inform further tactics. These comprehensive strategies underscore the department's commitment to excellence, diversity and the advancement of both faculty and patient communities.

EDUCATION



Update by Vice Chair Amy L. Halverson, MD

Congratulations to our 2023 general surgery graduates.

We were excited to welcome back Lawrence Knab, MD, for our Second Annual Alumni Visit and then Ed Chen, MD, who led a course on robotic technical skills. Our residents loved learning clinical pearls and pragmatic life skills from our guest speakers.

The year 2023 has seen transitions and growth in Department of Surgery Education. Leah Tatebe, MD, assumed the program director role. Yue-Yung Hu, MD, MPH, continues to lead the SECOND Trial with a focus on culture, diversity and resident well-being in surgical residency.

Joseph A. Herrold, MD, MPH, is our new clerkship director. He recently joined our department from R Adams Cowley Shock Trauma Center at University of Maryland Medical Center, where he completed his fellowship in surgical critical care, trauma and acute care surgery before joining the faculty there. Dr. Herrold completed his general surgery training at the University of Southern California.

Increased clinical volume in the Department of Surgery is prompting new changes for 2024. The plastic surgery residency program added a resident, and the thoracic surgery program instituted a 4+3 program, which allows residents to train in thoracic surgery after completing three years of general surgery. Our residency program established a rotation with Weiss Hospital, increasing resident exposure to basic general surgery cases. We look forward to expanding the general surgery resident complement starting in 2025.



RESEARCH AND INNOVATION



Update by Vice Chair Daniela P. Ladner, MD, MPH

Fiscal year 2023 was instrumental in moving toward our vision to become a destination department for surgeon-scientists and scientists and our mission to become one of the top extramurally funded surgery departments.

NORTHWESTERN MEDICINE DEPARTMENT OF SURGERY FY23 Total Extramural Awards

Grant proposals:

56%
increase



\$147.9
million total

Federal funding:

38 applicants



21 recipients

\$21.6 MILLION
total extramural awards



\$15.6 MILLION
in NIH funding
(up from \$11.2 million in 2022)



FACULTY RECEIVED:

23 new
extramural
grants of >\$100K



5 first
extramural
R01-level grants

3 career
development
awards



4 extramural
pre-/post-
doctoral awards

We continue to build and strengthen our research community by expanding the SURgeons Promoting Academic Surgeons & Scientists (SURPASS) weekly series, which creates learning opportunities towards research, and establishing a biweekly Health Outcomes Research Conference and proactively sponsoring and nominating faculty for awards and societies. We implemented weekly biostats office hours for faculty. Adin-

Cristian Andrei, PhD, professor of Preventative Medicine (Biostatistics), provides weekly biostatistical support for our faculty. We also provided eight awards for data warehouse and biostatistical support and two awards for scored but unfunded grants. We established an internal study section for federal grant submissions. We recruited two basic science researchers and posted two PhD positions to strengthen outcomes science. As our

department grows, we are expanding the grants administrative core and have created a clinical/regulatory core to support ongoing and future research endeavors.

These initiatives contributed to our department's growth and success in FY23 and serve as a testament to the amazing faculty and our dedication to advancing research excellence.



Resident Graduates and Their Next Step

General surgery

Brian Brajcich, MD
Colorectal Surgery
Cleveland Clinic

Dan Dolan, MD

Cardiothoracic Surgery
Brigham and Women's
Hospital

Ben Many, MD

Pediatric Surgery
Indiana University

Vivek Pamulapati, MD

Acute Care Surgery
University of Nevada, Las Vegas

Matt Snyder, MD

Cardiothoracic Surgery
Northwestern University

Vascular surgery

Matthew Chia, MD
Vascular Surgeon
Southern California
Permanente Medical Group
(private practice)

Nicholas Lysak, MD

Chicago (private practice)

Cardiothoracic surgery

Paul Devlin, MD
Children's Hospital of
Philadelphia
Congenital Cardiac Surgery
Fellowship

Andre Son, MD

Northwestern University
Advanced Aortic Fellowship

Plastic surgery

Ava Chappell, MD
Mayo Clinic
Hand Fellowship

Aaron Kearney, MD

Loyola Medicine
Hand Fellowship



CLINICAL OPERATIONS



Update by Vice Chair Jason Hyunsuk Ko, MD

This past year marked several accomplishments for the Department of Surgery from a clinical operations standpoint. Increases in revenues and wRVUs are notable on the page [Department of Surgery by the Numbers](#). Additional details in that list reflect the coordinated efforts to eliminate existing bottlenecks along each step of the patient care pathway: outpatient access, OR utilization, and inpatient length of stay (LOS).

At the Academic Medical Center (AMC), the Department of Surgery controls a greater proportion of OR blocks than any other department, and our monthly in-block utilization was 86%, along with a monthly total utilization of 86%, both of which were incremental improvements from FY22. In terms of enhancing patient throughput on the inpatient side, the observed-to-expected (O/E) ratio improved to 1.01 in FY23, compared with 1.09 in FY22. In addition, likelihood to recommend (LTR) scores remained high at 89.9 for location and 91.5 for provider in FY23.

During the upcoming year, our Clinical Operations Strategic Workgroup plans to implement various tactics to improve operational efficiency. One pilot involves placing a nurse navigator within the call center to triage patients with time-sensitive diagnoses, such as breast cancer and colorectal cancer, to improve access to our clinics and in turn our ORs.

We will coordinate with the Regional Integration Workgroup to optimize OR utilization across the NM health system, which will ultimately improve the patient experience.

In an effort to improve inpatient LOS, we will pilot a program with a discharge coordinator for select surgical specialties/units to expedite early morning discharges and weekend discharges, and we will implement ERAS protocols for all divisions within the department.

We also plan to establish a triage room on the inpatient floor for transplant patients so that they can bypass the emergency department (ED) to be assessed appropriately by the Transplant Surgery team, and then potentially be admitted directly or discharged to home with planned outpatient follow-up. This could reduce unnecessary admissions from the ED and decrease overall LOS for these patients.

We are excited to initiate the aforementioned tactics in FY24 to optimize operational efficiency, which should improve the patient experience while enhancing the already high-quality care we provide.



FACULTY PROMOTIONS AND EXPANSION

Faculty Promotions



Ezra N. Teitelbaum, MD, MEd
Associate Professor
Division of Gastrointestinal Surgery



Ashley K. Vavra, MD
Associate Professor
Division of Vascular Surgery



Chitaru Kurihara, MD
Assistant Professor
Division of Thoracic Surgery



Steven J. Schwulst, MD
Associate Professor and Award
of Tenure
Division of Trauma/Critical
Care Surgery



Michael C. Monge, MD
Associate Professor
Division of Pediatric Thoracic Surgery



Robert D. Galiano, MD
Professor
Division of Plastic Surgery



Dinee C. Simpson, MD
Associate Professor
Division of Transplant Surgery



Karen J. Ho, MD
Associate Professor and Award
of Tenure
Division of Vascular Surgery



Yue-Yung Hu, MD, MPH
Associate Professor
Division of Pediatric General Surgery



Jason Hyunsuk Ko, MD
Professor
Division of Plastic Surgery



Nabil M. Issa, MD
Professor
Division of Trauma/Critical Care Surgery

Faculty Expansions



Guillermo J. Ares, MD
Health System Clinician
Pediatric General Surgery



**Audrey Rosenblatt, PhD,
APRN-CRNA**
Research Assistant Professor
Surgery



Benjamin S. Bryner, MD
Assistant Professor
Cardiac Surgery



Justin R. Ryder, PhD
Associate Professor
Pediatric General Surgery



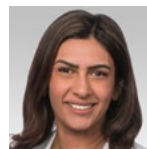
Erhan Guler, MD
Health System Clinician
Cardiac Surgery



Michael J. Sutherland, MD
Clinical Associate Professor
Trauma and Critical Care



Ashley N. Hardy, MD
Health System Clinician
Surgical Oncology



Faaiza T. Vaince, MD
Health System Clinician
Breast Surgery



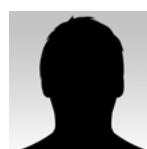
Joseph A. Herrold, MD, MPH
Assistant Professor
Trauma and Critical Care



Gabriel A. Wallace, MD
Clinical Assistant Professor
Vascular Surgery



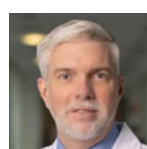
Adrienne S. Kline, MD, PhD, BSc
Research Assistant Professor
Cardiac Surgery



Hong Xu, MD
Research Associate Professor
Organ Transplantation



Neel A. Mansukhani, MD, MS
Assistant Professor
Vascular Surgery



Douglas R. Johnston, MD
Professor
Cardiac Surgery

DIVISION UPDATES

The divisions within the Department of Surgery at Northwestern University Feinberg School of Medicine provide specialized education and training programs, conduct valuable basic and translational research and provide outstanding surgical care through our affiliated hospitals.

ACUTE CARE SURGERY

The Division of Acute Care Surgery offers world-class surgical care and provides leadership and education in the fields of trauma, critical care and acute care surgery.

Key achievements



Clinical

With the help of the Performance Improvement Office, we improved the death notification process to make it more family centered.

Nabil M. Issa, MD, led the successful launch of an Elective General Surgery practice that will be staffed by select faculty.



Research

We participate in multicenter clinical trials relating to traumatic brain injury, airway management in trauma, venous thromboembolism (VTE) management, appendicitis and diverticulitis.

Under the leadership of Hasan B. Alam, MD, we are sponsoring two multi-institutional phase 2/3 trials to test novel treatments for traumatic brain injury. These trials are federally funded by congressionally directed medical research programs (CDMRP), and scheduled to enroll patients over the next five years.

Anne Stey, MD, received an R18 award from the Agency for Healthcare Research and Quality titled "Shock Patients: Interprofessional Communication to Enhance Diagnosis (SPICED)," for \$2 million over four years.

Steven J. Schwulst, MD, received two grants from the NIH National Institute of Neurological Disorders and Stroke, titled “The young gut microbiome: a fountain of youth for brain injury in the aged?” (an RF1 award) and “Trauma, the gut, and the brain: the gut microbiota-microglia axis in traumatic brain injury” (an RO1 award).



Education

Joseph A. Herrold, MD, MPH, was appointed associate surgery clerkship director for Feinberg School of Medicine students in August 2023.

Leah Tatebe, MD, was appointed program director of the General Surgery Residency Program. She also received the John M. Templeton Jr., MD, Injury Prevention Scholarship from the Eastern Association for the Surgery of Trauma and was named a Health Policy Scholar by the American College of Surgeons, Kim Ephgrave Visiting Professor for the Association of Women Surgeons and one of the Top 40 Under 40 by the Association of Women Surgeons.

Faculty members delivered multiple lectures at the 46th Annual Conference on Shock and a presentation about Surviving Sepsis Guidelines at the Shupick Ukrainian Academy of Continuous Medical Education.

Key division publications

Bold names denote Northwestern Medicine Department of Surgery faculty, trainees and staff at the time of publication.

Abahuje E, Diaz C, Lin K, Tesorero K, Bushara O, Yang S, Berry A, Rafferty M, **Johnson J**, **Stey A**. [A qualitative study of how team characteristics and leadership are associated with information sharing in multidisciplinary intensive care units.](#)

Chen Z, Ford K, Islam M, Iamsawat S, Davis B, Weiss C, **Schwulst S**. [Anti-CD49d antibody treatment improves survival and attenuates neurocognitive deficits after traumatic brain injury in aged mice.](#) *Shock*. 2024;61(1):112-119.

Chen Z, Islam M, Davis B, Mao Q, Chen S, Wang Y, Castellani R, Mentis A, **Schwulst S**. [Microglia and infiltrating T-cells adopt long-term, age-specific, transcriptional changes after traumatic brain injury.](#) *Shock*. 2023;59(2):267-276.

Davis B, Chen Z, Islam M, Timken M, Procissi D, **Schwulst S**. [Post injury fecal microbiome transplant decreases lesion size and neuroinflammation in traumatic brain injury.](#) *Shock*. 2022;58(4):287-294.

Slocum J, Holl J, Love R, Shi M, Mackersie R, **Alam H**, Loftus T, Andersen R, Bilimoria K, **Stey A**. [Defining obstacles to emergency transfer of trauma patients: An evaluation of triage processes from nontrauma and lower-level Illinois trauma centers.](#)

Tatebe L, Thomas A, Regan S, Stone Sr. L, Dicker R. [Language of violence: Do words matter more than we think?](#)

ACUTE CARE SURGERY

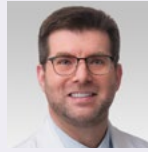
Faculty



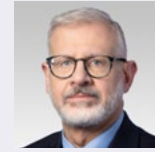
Michael Shapiro, MD
Division Chief



Hasan B. Alam, MD



Joseph A. Herrold, MD, MPH



Nabil M. Issa, MD



Steven J. Schwulst, MD



Anne Stey, MD



Leah Tatebe, MD

Health System Clinician



Michael J. Sutherland, MD

BREAST SURGERY

In partnership with Robert H. Lurie Comprehensive Cancer Center of Northwestern University, the Division of Breast Surgery embraces a multidisciplinary approach to breast disease and breast care in an academic and community setting that is warm, inviting and comfortable for patients.

Innovations and highlights

- ▶ Nora Hansen, MD, served as first vice president of the Western Surgical Association.
- ▶ Dr. Hansen served as president of the Chicago Surgical Society.

Key achievements



Clinical

The Lynn Sage surgical staff, a team of dedicated professionals, provided comprehensive care to approximately 1,000 new patients with breast cancer last fiscal year. From initial diagnosis to long-term follow-up care, our team remains committed to ensuring the best possible outcomes for our patients.



Research

Seema A. Khan, MD, received a renewal for her Breast Cancer Research Foundation grant, "Pre-clinical and clinical studies of breast cancer prevention with transdermal anti-progesterone agents."

Dr. Khan received an administrative supplement for her National Cancer Institute R01 grant, "Determinants of transdermal drug delivery to the normal and the radiated breast." This administrative supplement was \$593,407 for the remaining two years of the project.

Dr. Khan received a Department of Surgery Research Mentor Award.



Education

The Lynn Sage Breast Surgical Oncology Fellowship is one of the country's most prestigious and established breast fellowships, with two fellows per year. The Breast Center is proud to welcome our 2024/25 Lynn Sage Breast Fellows: Haylee Everett, MD, from The University of Tennessee Health Science Center College of Medicine, and Rashi Singh, MD, from Case Western Reserve University.

Key division publications

Bold names denote Northwestern Medicine Department of Surgery faculty, trainees and staff at the time of publication.

Bushara O, **Hansen NM**. [Genetic considerations in the locoregional management of breast cancer: a review of current evidence](#). *Curr Breast Cancer Rep*. 2023;15:48-57. doi:10.1007/s12609-023-00478-2.

Hosseini O, Wang J, Lee O, Pulliam N, Mohamed A, Shidfar A, Chatterton RT, Blanco L, Meindl A, Helenowski I, Zhang H, **Khan SA**. [Menstrual phase and menopausal status classification of benign breast tissue using hormone-regulated gene expression and histomorphology: a validation study](#). *Ann Surg Oncol*. 2023;30(8):5215-5224. doi:10.1245/s10434-023-13192-1.

Lee O, Wang M, Hosseini O, Bosland MC, Muzzio M, Helenowski I, **Khan SA**. [Z-endoxifen prevents aggressive mammary cancers in mice by inhibiting cell proliferation and creating a tumor suppressive microenvironment](#). *Biomed Pharmacother*. 2023;162:114607. doi:10.1016/j.biopha.2023.114607.

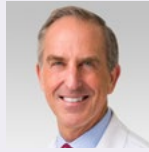
Warwar S, **Kulkarni S**. [Selective surgical excision of high-risk lesions](#). *Surgery*. 2023;174(1):125-128. doi:10.1016/j.surg.2023.02.028.

BREAST SURGERY

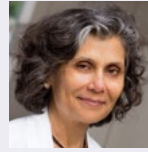
Faculty



Nora Hansen, MD
Division Chief



Kevin Bethke, MD



Seema A. Khan, MD

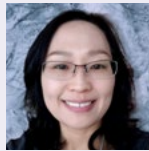


Swati Kulkarni, MD

Research Faculty



Susan Clare, MD



Oukseub Lee, PhD

Health System Clinicians



Denise Monahan, MD



Miraj Shah-Khan, MD



Faaiza T. Vaince, MD

CARDIAC SURGERY

The Division of Cardiac Surgery is widely respected throughout the nation as an innovator and leader. The division's success is built on three main areas: education, research and clinical care through our affiliated hospitals.

Innovations and highlights

- ▶ Northwestern Memorial Hospital was ranked No. 7 nationally in cardiology, heart and vascular surgery by *U.S. News & World Report*, 2023-2024, which has also named it the highest-ranked program in Illinois for 16 consecutive years.
- ▶ We welcomed a new chief, Douglas R. Johnston, MD.
- ▶ We welcomed as new faculty Benjamin S. Bryner, MD; Erhan Guler, MD; and Stephen Chiu, MD
- ▶ New research faculty welcomed last year included Adrienne S. Kline, MD, PhD, BSc, and Bowen Wang, PhD (joint with the Vascular Surgery division)





Key achievements



Clinical

We performed the first transplant from a donation after circulatory death using the “heart in a box” (TransMedics Organ Care System™).

The robotic cardiac surgery program was started in November 2023.

Cardiac surgery volumes increased by 28% compared with FY22.



Research

Bluhm Cardiovascular Institute (BCVI) is involved with more than 10,000 active research participants of more than 100 clinical trials.

More than 75% of BCVI faculty are involved in clinical research.

Nationally, 14 clinical trials have principal investigators from BCVI.



Education

Total residency and advanced fellowship training was expanded to 16 positions.

CARDIAC SURGERY

Faculty



Douglas R. Johnston, MD
Division Chief



Benjamin S. Bryner, MD



James L. Cox, MD



Kim L. Feingold, PhD



Kathleen L. Grady, PhD



S. Chris Malaisrie, MD



Patrick M. McCarthy, MD



Christopher K. Mehta, MD



Gail M. Osterman, PhD



Duc Thinh Pham, MD



Alyssa M. Vela, PhD

Research Faculty



Adrienne S. Kline, MD, PhD, BSc

Health System Clinicians



Andrei Churyla, MD



Gyu Gang, MD



Erhan Guler, MD



Aqeel A. Sandhu, MD



GASTROINTESTINAL SURGERY

The division includes the sections of bariatric and minimally invasive surgery, colorectal surgery and general surgery. Each of our surgeons has specialty training in their area of expertise. In keeping with the mission and vision of the Department of Surgery, the division is dedicated to being an academic leader in education and research.

Innovations and highlights

- ▶ Northwestern Memorial Hospital was ranked No. 9 nationally in Gastroenterology and GI Surgery by *U.S. News & World Report*, 2023-2024.
- ▶ Eric Hungness, MD; Scott Strong, MD; and Ezra Teitelbaum MD, MEd, served as co-leads in systemwide, clinically integrated programs focusing on weight loss, colon cancer and gastroesophageal reflux disease, respectively.
- ▶ Vitaliy Poylin, MD, and Dr. Strong participated in the recruitment of new colorectal surgeons David Piazza, MD, and Saleh Eftaiha, MD, who will be joining Northwestern Medicine to address growing needs in the northwest and northern suburbs, respectively.



Key achievements



Clinical

Mohammed Abbass, MD, led the launch of a registry for patients and families with inherited polyposis or colorectal cancer syndromes.

Dr. Hungness collaborated with others to create a multidisciplinary bariatric surgery program to facilitate operations on patients with obesity before kidney transplant.

Dr. Hungness and Alexander Nagle, MD, oversaw a process improvement project to enhance patient experience and quality of care for individuals potentially requiring weight loss surgery.

Dr. Hungness and Dr. Poylin championed efforts to create templated operative notes for a variety of operations that encourage best practices and enhance review of outcomes.

Dr. Poylin guided changes in the ERAS program based on quality outcome drivers identified by our experience with thousands of patients over the past several years.



Research

Dr. Abbass began enrolling patients in a clinical trial testing a combination of vaccines for cancer prevention in Lynch syndrome.

Dr. Abbass received funding to investigate the molecular characterization of tumor mutational burden and somatic mutational profile in rectal cancer after total neoadjuvant therapy.

Dr. Poylin and Dr. Teitelbaum received funding to study the role of a novel mesh suture in procedures focused on ileostomy closure and hiatal hernia repair, respectively.

Dr. Teitelbaum was the senior author on a publication that noted an institutional change from heparin to enoxaparin for bariatric surgery perioperative VTE. Prophylaxis was associated with a significant increase in postoperative bleeding, with no difference in VTE complications, leading to a reversal of practice.





Education

Amy L. Halverson, MD, received the Jonathan Fryer teaching award.

Kyle Mueller, MD, continued to evolve and refine the curriculum used to introduce trainees to robotic surgery and its use in multiple specialties.

Dr. Poylin, with the support of the Robert J. Havey, MD, Institute for Global Health, welcomed the first group of cancer doctors from Ukraine to a one-month observership, in association with the Ukrainian National Cancer Institute, and traveled to Ukraine to provide surgical education on a variety of colorectal surgery topics.

Dr. Poylin helped organize the inaugural Northwestern Medicine IBD Masterclass CME Symposium.

Dr. Teitelbaum was appointed lead of the Northwestern Medicine Procedural Video Archive project that serves as a powerful learning tool for trainees and surgeons.

Key division publications

Bold names denote Northwestern Medicine Department of Surgery faculty, trainees and staff at the time of publication.

Abbass MA, Plesec T, Church JM. [A different way to think about syndromes of hereditary colorectal cancer.](#) *Dis Colon Rectum.* 2023;66:1339-1346.

Reiter AJ, Prinz J, Li Y, **Nagle AP, Hungness ES, Teitelbaum EN.** [Increased bleeding risk with enoxaparin venothromboembolism prophylaxis compared with heparin in patients undergoing bariatric surgery.](#) *Surg Endosc.* 2023;37(9):6983-6988.

Sperry C, Malik A, Reiland A, Thornburg B, Keswani R, Ebrahim Patel MS, Aadam A, Yang A, **Teitelbaum E,** Salem R, Riaz A. [Percutaneous cystic duct interventions and drain internalization for calculous cholecystitis in patients ineligible for surgery.](#) *J Vasc Interv Radiol.* 2023;34:669-676.

Tatebe LC, Golisch KB, Janczewski LM, Krueger M, **Halverson A.** [Autonomy maps: building a shared mental model for progressive resident operative autonomy on the road to entrustable professional activities \(EPAs\).](#) *J Surg Educ.* 2023;80:1351-1354.

Key faculty honors and awards

Dr. Halverson, Dr. Nagle, Dr. Poylin, and Dr. Strong were named to Castle Connolly America's Top Doctors and recognized in *Chicago* magazine.

Dr. Strong was elected vice president of the Society of Pelvic Surgeons.

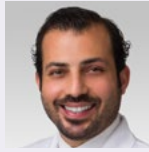
Dr. Poylin was appointed vice chair of the Inflammatory Bowel Disease Committee of the American Society of Colon and Rectal Surgeons, and Dr. Strong completed his tenure as advisor of the same committee.

GASTROINTESTINAL SURGERY

Faculty



Scott Strong, MD
Division Chief



Mohammad Abbass, MD, MPH



Amy L. Halverson, MD



Eric Hungness, MD



Kyle Mueller, MD



Alexander Nagle, MD



Vitaliy Poylin, MD

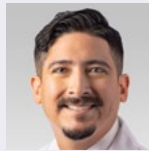


Ezra Teitelbaum, MD, MEd

Health System Clinicians



John Andrews, MD



Daniel Davila, MD



James Frydman, MD



Stephen Ganshirt, MD



Dean Shoener, MD



Jack Wagoner, MD



Jacklyn Wierzbicki, MD



ORGAN TRANSPLANTATION

The Division of Organ Transplantation seeks to make discoveries through science and research, improve organ transplant surgical techniques and outcomes, educate future surgeons and scientists and enhance the lives of patients. Founded in 1964, Northwestern Medicine’s transplantation program is the longest-standing program in the Chicago area.

Innovations and highlights

- ▶ Derrick Christopher, MD, was named surgical director of the Pancreas Transplant Program.
- ▶ Vinayak Rohan, MD, was named surgical director of the Deceased Donor Kidney Transplant Program.
- ▶ Zachary Dietch, MD, was appointed medical director of 14E.
- ▶ Dinee C. Simpson, MD, was named the first chief health equity executive at Northwestern Medicine.

Key achievements



Clinical

The FY23 count for Northwestern Medicine was 7000 kidneys and 2500 livers transplanted, a milestone that puts NM in the upper echelon of all transplantation programs nationwide.



Research

Dr. Simpson and Daniela P. Ladner, MD, were awarded a U01 grant: “Improving access to renal transplantation for underserved black communities.”

Satish Nadig, MD, PhD, was awarded a U01 grant: “A Chicago Biomedical Consortium Hub of Innovative Technologies for Entrepreneurship and Science (CBC-HITES).”

ORGAN TRANSPLANTATION

Faculty



Satish Nadig, MD, PhD
Division Chief



Daniel Borja-Cacho, MD



Juan Caicedo-Ramirez, MD



Derrick Christopher, MD



Zachary Dietch, MD



Daniela P. Ladner, MD



Joseph Leventhal, MD, PhD



Vinayak Rohan, MD



Dinee C. Simpson, MD

Research Faculty



Amna Daud, MBBS, MPH



Dinesh Jaishankar, PhD



James Mathew, PhD



David Pinelli, PhD



Anat Roitberg-Tambur, PhD



Hong Xu, MD



Xiaomin Zhang, MD



Zheng Zhang, MD

PEDIATRIC SURGERY

The Division of Pediatric Surgery endeavors to advance academic, clinical and research activities in keeping with the missions of the Ann & Robert H. Lurie Children's Hospital of Chicago and the Northwestern University Feinberg School of Medicine.

Innovations and highlights

- ▶ The Pediatric Devices, Innovations, and Advances in Surgery (PEDIA-SURG) research group was created in 2023 by Timothy Lautz, MD, and Seth Goldstein, MD, to focus on novel agents in pediatric fluorescence-guided surgery. Working with industry partners, the group has active clinical trials investigating agents for ureter visualization during abdominal and pelvic surgery and pulmonary nodule visualization during metastasectomy for osteosarcoma.
- ▶ Anthony Chin, MD, was part of a team that successfully obtained a patent for the DaPhNe System, a digitally adjustable phrenic nerve stimulator system for children with congenital hypoventilation syndrome.
- ▶ Riccardo Superina, MD, hosted the first Biliary Atresia Research and Education (BARE) conference in May 2023.
- ▶ Noopur Gangopadhyay, MD, assumed the position of co-director of the Cleft-Craniofacial Team and was appointed to the Finance and Administration Counsel of Lurie Children's Hospital Medical Center.
- ▶ Jennifer McGrath, MD, was appointed to the role of quality and safety officer for the Division of Pediatric Plastic Surgery.



Key achievements



Research

Faculty in the Division of Pediatric Surgery were authors on 76 publications in FY23.

Joanna Ledwon, PhD, and Arun Gosain, MD, received a \$75,000 grant from the Plastic Surgery Foundation to study mechanisms by which to minimize the harmful effects of radiation during tissue expansion in a porcine model.

Fizan Abdullah, MD, PhD, and Hassan Ghomrawi, PhD, were awarded R01 funding to study the role of biosensors in early detection of deviation in postoperative course for pediatric surgical patients.



Education

Dr. Gosain served as the Earl Jordan Annual Visiting Professor in Plastic Surgery through the Cleveland Clinic Metro Health program, where he guided residents through cadaver dissection focused on facial anatomy.

Dr. Gangopadhyay was selected by the Plastic Surgery Foundation to serve as a member of the visiting professors program for 2023-2024.

Key division publications

Bold names denote Northwestern Medicine Department of Surgery faculty, trainees and staff at the time of publication.

Minneci PC, Bergus KC, **Lutz C**, Aldrink J, Bence C, Breech L, Dillon PA, Downard C, Ehrlich PF, Fallat M, Fraser JD, Grabowski J, Helmrath M, Hertweck P, Hewitt G, Hirschl RB, **Kabre R**, Lal DR, Landman M, Leys C, Mak G, Markel T, Pressey J, Raiji M, Rymeski B, Saito J, Sato TT, St Peter SD, Cooper J, Deans K; Midwest Pediatric Surgery Consortium. [Reducing unnecessary oophorectomies for benign ovarian neoplasms in pediatric patients](#). *JAMA*. 2023;330(13):1247-1254. doi:10.1001/jama.2023.17183.

Sullivan GA, Reddy S, Reiter AJ, Zeineddin S, Visenio M, Hu A, Mackersie R, **Kabre R**, **Raval MV**, **Stey AM**. [Does trauma center volume account for the association between trauma center verification level and in-hospital mortality among children injured by firearms in California?](#) *J Am Coll Surg*. 2023;237(5):738-749. doi:10.1097/XCS.0000000000000818.

Tian Y, Allen LD, Ingram ME, **Raval MV**. [Disparities in delivery of ambulatory surgical care for children](#). *JAMA Netw Open*. 2023;6(6):e2317018. doi:10.1001/jamanetworkopen.2023.17018.

Key faculty honors and awards

Mehul Raval, MD, was elected to the Society of University Surgeons and American Surgical Association, was inducted in Surgical Biology Club II and was the 2023 recipient of the Association for Academic Surgery/Taiwan Surgical Association International Visiting Professorship Award.

Dr. Superina received an honorary degree from Federal University Rio Grande du Sul in Brazil, and a leadership appointment on the Steering Committee of the International Registry of Congenital Portosystemic Shunts.

Justin R. Ryder, PhD, and Thomas Inge, MD, PhD, were invited as experts to moderate and present at an NIH-sponsored workshop about research gaps and opportunities for pharmacotherapy for pediatric obesity in November 2023.

Dr. Gosain was elected president-elect of the American Association of Plastic Surgeons, the oldest plastic surgery organization worldwide, and president-elect of the American Association of Pediatric Plastic Surgeons.

Dr. Gosain received the Section Editor of the Year award for *FACE*, the journal of the American Society of Maxillofacial Surgeons and American Society of Craniofacial Surgeons.

PEDIATRIC SURGERY

Clinical Educator and Research Faculty



Thomas Inge, MD, PhD
(tenured) *Division Chief*



Fizan Abdullah, MD, PhD



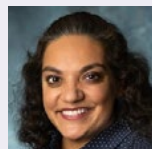
Amir M. Alhajjat, MD



Anthony C. Chin, MD



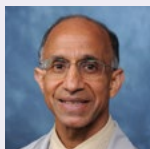
Osama M. Eltayeb, MBBS



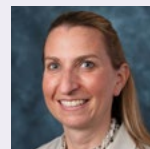
Noopur Gangopadhyay, MD



Seth D. Goldstein, MD



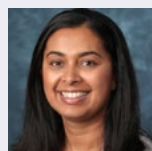
Arun K. Gosain, MD



Julie D. Grabowski, MD



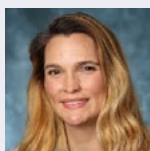
Yue-Yung Hu, MD, MPH



Rashmi Kabre, MD



Timothy B. Lautz, MD



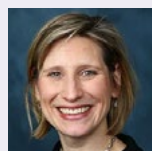
Jennifer L. McGrath, MD



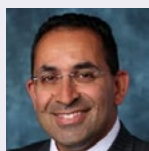
Michael C. Monge, MD



Mehul V. Raval, MD
(tenured)



Erin Rowell, MD



Aimen F. Shaaban, MD



Riccardo A. Superina, MD



Akira Yamada, MD, PhD

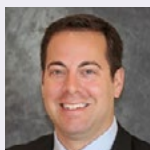
Research Faculty



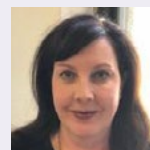
Hassan M.I. Ghomrawi, PhD, MPH



Joanna K. Ledwon, PhD

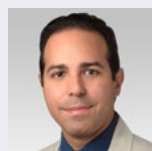


Justin R. Ryder, PhD



Christine Stake, DHA

Health System Clinicians



Guillermo J. Ares, MD



Alex Dzakovic, MD



Monica Langer, MD

PLASTIC SURGERY

The Division of Plastic Surgery offers a spectrum of surgical and nonsurgical procedures designed for both cosmetic enhancements and reconstructive purposes.

Innovations and highlights

- ▶ The Advancing Opportunities in Clinical and Translational Equity (ADVOCATE) in Sexual and Gender Minority Health Program was launched with Lauren Beach, PhD, as director and Dr. Jordan as associate director.
- ▶ We started the gender affirming surgery fellowship, one of only eight such opportunities in the nation.

Key achievements



Clinical

Gregory Dumanian, MD, introduced a new surgical suture (Duramesh™ Mesh Suture) for clinical use in high-tension internal closures, including for the abdominal wall. It is only the third suture design ever and the first new suture since barbed suture was introduced 30 years ago. It has been used extensively at Northwestern Memorial Hospital, at 40 US academic medical centers and throughout the world. Michael Shapiro, MD, chief of the Division of Acute Care Surgery, is documenting the experience at NMH. Two randomized clinical trials are ongoing in Europe, with an observational study recently granted approval in Germany and Austria for open abdomen closures.



Research

John Kim, MD, presented research on novel mesh applications in breast reconstruction and aesthetic body contouring at MD Anderson and garnered a Resident Best Paper award at the American Society of Plastic Surgeons.

Robert D. Galiano, MD, received five new grants for various clinical trials, totaling \$1,239,694 in award funding.

Aligning with goals of the previous academic year, Dr. Galiano's laboratory initiated a focused research group on disparities in plastic surgery and launched related clinical trials.



Education

The division gained a coveted third resident position. The residency will stepwise climb from 12 to 18 clinical residents by 2030.

Julius Few, MD, graduate of the Division of Plastic Surgery Residency, established a yearly Few Lectureship for Innovation and Aesthetic Surgery, which had its first lecture in February 2024. The Few Fund will support diversity, equity and inclusion efforts to increase the pipeline of students into plastic surgery.

Key division publication

Bold names denote Northwestern Medicine Department of Surgery faculty, trainees and staff at the time of publication.

Eberlin KR, Brown DA, Gaston RG, Kleiber GM, **Ko JH**, Kovach SJ, Loeffler BJ, MacKay BJ, Potter BK, Roubaud MS, Souza JM, Valerio IL, **Dumanian GA**. [A consensus approach for targeted muscle reinnervation in amputees](#). *Plast Reconstr Surg Glob Open*. 2023;11(4):e4928. doi:10.1097/GOX.0000000000004928.

Key faculty honor

Dr. Galiano was appointed to the Medical Board of Directors of the Musculoskeletal Research Foundation, a nonprofit organization responsible for the allocation of most allograft products for plastic surgery and orthopaedic surgery in the United States.

PLASTIC SURGERY

Faculty



Gregory Dumanian, MD
Division Chief



Marco Ellis, MD



Robert D. Galiano, MD



Sumanas Jordan, MD, PhD



John Kim, MD



Jason Hyunsuk Ko, MD

Research Faculty



Seok Jong Hong, PhD

Health System Clinicians



Julius Few, MD



Michael Howard, MD



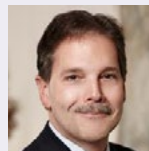
Thomas Mustoe, MD



Clark Schierle, MD, PhD



Sammy Sinno, MD



Anthony Terrasse, MD



Chad Teven, MD, MBA



SURGICAL ONCOLOGY

In partnership with Robert H. Lurie Comprehensive Cancer Center of Northwestern University, the Division of Surgical Oncology offers evidence-based, multidisciplinary cancer treatment from a team of fellowship-trained surgeons and dedicated care professionals.

Innovations and highlights

- ▶ David Bentrem, MD, was recently named editor in chief of the Journal of Surgical Oncology.
- ▶ The past year has been marked by growth as we have added two new advanced practice providers and three new faculty members.

Key achievements



Clinical

Jeffrey Wayne, MD, continues to co-lead the Melanoma and Soft Tissue Sarcoma Program. Through the Robert H. Lurie Comprehensive Cancer Center, our team has enrolled numerous patients in the international Melanoma Margins Trial (MELMART) II, addressing unanswered questions regarding margins in stage 2 melanoma.

We remain one of only four national sites collecting high-quality melanoma biospecimens for the Multicenter Tumor Bank Consortium.

Kirsten Johnson, PA-C, and Rachel Markel, PA-C, joined our division. They will work with current staff to improve access for our patients with cancer and continue to develop important clinical programs, such as the Pancreatic Cyst Clinic, Thyroid FNA Clinic and lymph node biopsy program.



Research

Our group participated in the multi-institutional CONNECTION trial examining the nascent role of gene-expression profile testing in melanoma.

Dr. Bentrem recently received a Department of Defense grant, “Direct incentive to improve lung cancer screening for veterans living in rural areas in VA VISN 12.”

Dr. Bentrem is a co-investigator on a recently awarded R01 study, “Co-targeting BET bromodomain proteins and MNK kinases in pancreatic cancer.”

Akhil Chawla, MD, received a U01 award, “Altered metabolism and machine learning for pancreatic cancer early detection.”

Key division publications

Bold names denote Northwestern Medicine Department of Surgery faculty, trainees and staff at the time of publication.

Thompson JF, Hyingstrom J, Caracò C, Zager JS, Jahkola T, Bowles TL, Pennacchioli E, Hoekstra HJ, Moncrieff M, Ingvar C, van Akkooi A, Sabel MS, Levine EA, Henderson M, Dummer R, Rossi CR, Kane JM 3rd, Trocha S, Wright F, Byrd DR, Matter M, MacKenzie-Ross A, Kelley MC, Terheyden P, Huston TL, **Wayne JD**, Neuman H, Smithers BM, Desai D, Gershenwald JE, Schneebaum S, Gesierich A, Jacobs LK, Lewis JM, O'Donoghue C, Sardi A, McKinnon JG, Slingluff CL, Farma JM, Schultz E, Scheri RP, Vidal-Sicart S, Testori AAE, Scolyer RA, Elashoff DE, Cochran AJ, Faries MB. [Regarding: predicting regional lymph node recurrence in the modern age of tumor-positive sentinel node melanoma.](#) *Ann Surg Oncol.* 2023;30(7):4359-4360. doi:10.1245/s10434-023-13570-9.

Fei-Zhang DJ, Moazzam Z, Ejaz A, Cloyd J, Dillhoff M, Beane J, **Bentrem DJ**, Pawlik TM. [The impact of digital inequities on gastrointestinal cancer disparities in the United States.](#) *J Surg Oncol.* 2023;128(1):155-166. doi:10.1002/jso.27257.

Janczewski LM, Shah D, Wells A, **Bentrem DJ**, Abad JD, **Chawla A**. [The inaccuracies of gastric adenocarcinoma clinical staging and its predictive factors.](#) *J Surg Oncol.* 2023;127(7):1116-1124. doi:10.1002/jso.27233.

D'Angelica MI, Ellis RJ, Liu JB, Brajcich BC, Gönen M, Thompson VM, Cohen ME, Seo SK, Zabor EC, Babicky ML, **Bentrem DJ**, Behrman SW, Bertens KA, Celinski SA, Chan CHF, Dillhoff M, Dixon MEB, Fernandez-Del Castillo C, Gholami S, House MG, Karanicolas PJ, Lavu H, Maithel SK, McAuliffe JC, Ott MJ, Reames BN, Sanford DE, Sarpel U, Scaife CL, Serrano PE, Smith T, Snyder RA, Talamonti MS, Weber SM, Yopp AC, Pitt HA, Ko CY. [Piperacillin-tazobactam compared with cefoxitin as antimicrobial prophylaxis for pancreatoduodenectomy: a randomized clinical trial.](#) *JAMA.* 2023;329(18):1579-1588. doi:10.1001/jama.2023.5728.

Yip L, Duh QY, Wachtel H, Jimenez C, **Sturgeon C**, Lee C, Velázquez-Fernández D, Berber E, Hammer GD, Bancos I, Lee JA, Marko J, Morris-Wiseman LF, Hughes MS, Livhits MJ, Han MA, Smith PW, Wilhelm S, Asa SL, Fahey TJ 3rd, McKenzie TJ, Strong VE, Perrier ND. [American Association of Endocrine Surgeons guidelines for adrenalectomy: executive summary.](#) *JAMA Surg.* 2022;157(10):870-877. doi:10.1001/jamasurg.2022.3544.

Jakub JW, Lowe M, Howard JH, Farma JM, Sarnaik A, Tuttle T, Neuman HB, Ariyan CE, Uppal A, Trocha S, Beasley GM, Wasif N, Bilimoria KY, Thomay AA, Allred JB, Chen L, Terando AM, **Wayne JD**, Thompson JF, Cochran AJ, Sim MS, Elashoff DE, Delman KA, Faries MB. [Oncologic outcomes of multi-institutional minimally invasive inguinal lymph node dissection for melanoma compared with open inguinal dissection in the second Multicenter Selective Lymphadenectomy Trial \(MSLT-II\).](#) *Ann Surg Oncol.* 2022;29(9):5910-5920. doi:10.1245/s10434-022-11758-z.

SURGICAL ONCOLOGY

Faculty



Jeffrey Wayne, MD
Division Chief



David Bentrem, MD



Dina Elaraj, MD



Julie Johnson, MSPH, PhD



Cord Sturgeon, MD

Research Faculty



Willemijn Schäfer, PhD



Yao Tian, PhD

Health System Clinicians



John Abad, MD



Akhil Chawla, MD



Ashley N. Hardy, MD



Samer Rajjoub, MD



THORACIC SURGERY

The Division of Thoracic Surgery is among the top programs in the country for clinical care, research and education. We offer advanced surgical treatments across the entire spectrum of thoracic diseases based on leading-edge medical research. We constantly strive for excellence within all aspects of academic thoracic surgery and work to develop innovative solutions for all of our patients, regardless of the complexity of their conditions.

Innovations and highlights

- ▶ The [Ambulatory Precision Lung Sparing \(A-PLUS\) Surgery Program](#) was launched, offering minimally invasive, outpatient lung cancer surgery to simultaneously diagnose and treat early-stage lung cancer.
- ▶ This year marked the development of a novel surgical technique: nonsequential double lung transplantation. This approach was meticulously designed to significantly curtail the risk associated with cancer recurrence. The primary objective is to avert the possibility of migrating cancer cells contaminating the newly transplanted donor lungs.
- ▶ The [Double Lung Replacement and Multidisciplinary Care \(DREAM\)](#) program was officially launched, having successfully performed a double-lung transplant on a patient with stage 4 lung cancer.

Key achievements



Clinical

Related to the DREAM program, a prospective registry study also named DREAM was started for the patients undergoing lung transplantation for medically refractory cancers confined to the lungs. The DREAM program promises hope for patients with lung-restricted malignancies, offering them a chance at double lung transplantation, which was once considered unattainable. With its innovative surgical methods, avant-garde cancer surveillance techniques and a robust multidisciplinary team, DREAM is redefining the contours of double lung transplantations. The program stands as a testament to medical advancements that prioritize improving patients' quality of life and enhancing postoperative outcomes.

The Precision Robotic Esophagectomy with Minimally Invasive Anastomosis and Enhanced Recovery (PREMIER) surgical program is an innovative approach to esophagectomy that uses the latest advancements in robotic surgery and multidisciplinary care. Esophagectomy is traditionally associated with significant morbidity and lengthy hospital stays. Northwestern Medicine developed the PREMIER program to offer patients a minimally invasive alternative to traditional methods, with reduced pain, faster recovery times and improved quality of life.



Research

Ankit Bharat, MD, is the principal investigator on three R01 renewals from the National Heart, Lung, and Blood Institute (through 2027).

Samuel Kim, MD, received a grant in the amount of \$40,550 from Intuitive Surgical Operations for "A multicenter retrospective review to evaluate the feasibility of dye: marking using the ion endoluminal system."

Chitaru Kurihara, MD, received a \$50,000 grant from the American Lung Association for studying mechanisms of lung allograft dysfunction after lung transplant.

Diego Avella Patino, MD, received a grant from the Respiratory Health Association in the amount of \$75,000 for the project "Improving immunotherapy for lung cancer."



Key division publications

Bold names denote Northwestern Medicine Department of Surgery faculty, trainees and staff at the time of publication.

Lee J, Yang AWJ, Chung LI, Yu J, Lee Y, Kim HS, Shin HJ, Choi YG, **Bharat A**, Chae YK. [A comprehensive landscape of de novo malignancy after double lung transplantation](#). *Transpl Int*. 2023;36:11552. doi:10.3389/ti.2023.11552.

Cerier E, Lung K, Kurihara C, **Bharat A**. [Lung transplantation in coronavirus-19 patients: what we have learned so far](#). *Clin Chest Med*. 2023;44(2):347-357. doi:10.1016/j.ccm.2022.11.017.

Lee J, Schellenberg SJ, Chung LI, **Bharat A**, Chae YK. [Current and future role of double-lung transplantation for bilateral lung cancer](#). *Transplant Rev (Orlando)*. 2023;37(3):100772. doi:10.1016/j.trre.2023.100772.

Toyoda T, Cerier EJ, Manerikar AJ, Kandula V, **Bharat A**, Kurihara C. [Recipient, donor, and surgical factors leading to primary graft dysfunction after lung transplant](#). *J Thorac Dis*. 2023;15(2):399-409. doi:10.21037/jtd-22-974.

Logan CD, Feinglass J, Halverson AL, Durst D, Lung K, Kim S, **Bharat A**, Merkow RP, Bentrem DJ, Odell DD. [Rural-urban disparities in receipt of surgery for potentially resectable non-small cell lung cancer](#). *J Surg Res*. 2023;283:1053-1063. doi:10.1016/j.jss.2022.10.097.

Avella D, **Bharat A**. [Lung transplantation in patients with lung disease secondary to coronavirus disease 2019 infection](#). *Curr Opin Crit Care*. 2022;28(6):681-685. doi:10.1097/MCC.0000000000000996.

Logan CD, Feinglass J, Halverson AL, Lung K, Kim S, **Bharat A**, Odell DD. [Rural-urban survival disparities for patients with surgically treated lung cancer](#). *J Surg Oncol*. 2022;126(7):1341-1349. doi:10.1002/jso.27045.

THORACIC SURGERY

Faculty



Ankit Bharat, MD
Division Chief



Diego Avella Patino, MD



Samuel S. Kim, MD



Chitaru Kurihara, MD



Kalvin C. H. Lung, MD

Research Faculty



Emilia Lecuona, PhD



Xianpeng Liu, PhD



Masahiko Shigemura, PhD



Qiang Wu, PhD



Yuanqing Yan, PhD



Wenbin Yang, PhD

Health System Clinicians



Andrew T. Arndt, MD



Michael S. Vercillo, MD



James R. Wade, MD



VASCULAR SURGERY

The mission of the Division of Vascular Surgery is to reduce the mortality and disability from vascular disease through patient care, research and education. Our strategy is to bring together highly qualified individuals who have basic and clinical research interest and expertise in vascular disease to create novel treatments and prevention programs for arterial and venous vascular disease.

Innovations and highlights

- ▶ Northwestern Memorial Hospital was ranked No. 7 nationally in cardiology, heart and vascular surgery by *U.S. News & World Report*, 2023-2024, which has also named it the highest-ranked program in Illinois for 16 consecutive years.
- ▶ We welcomed new faculty: Neel A. Mansukhani, MD, MS; Anand Brahmandam, MD; George Havelka, MD (medical director, Vascular Surgery, West Region), and Gabriel A. Wallace, MD (medical director, Vascular Surgery, South Region).
- ▶ We welcomed to the division the additions of Kevin Lapp, PA-C, and Brianna Martinek, BSN, RN, coordinator of Patient Care of the Aortic Aneurysm Program.



Key achievements



Clinical

In situ laser fenestration expands the minimally invasive endovascular procedures offered to patients at our center. In addition to standard off the shelf stent grafts, custom stent grafts, and devices available through clinical trials, in situ laser fenestrated stent grafts can be used to treat patients with aortic diseases who are not candidates for traditional open surgical reconstruction or our previously existing minimally invasive techniques.



Research

Karen J. Ho, MD, was awarded an R21 grant from the National Institute on Aging titled “COCOA PAD II: Effect of Cocoa Flavanols on the Gut Microbiome and Functional Performance” for \$486,611 for 2 years.

Bin Jiang, PhD, was awarded an R56 grant from National Heart, Lung, and Blood Institute titled “Targeted Mitochondrial Delivery Systems for Vascular Interventions” for \$502,949 for 1 year.



Education

The Northwestern Vascular Surgery Simulation Program, directed by Tadaki Tomita, MD, and supported by the Victor M. Bernhard, MD, and Suzan B. Bernhard Endowed Clinical Research Fund for Surgery, implemented a new curriculum using an advanced endovascular simulator in a dedicated workroom for vascular trainees. It again received McGaw funding for the Advanced Open Vascular Skills and Femoral Artery Access curricula hosted at Northwestern Medicine. Through the involvement of Dr. Tomita and Heron E. Rodriguez, MD, with the Advanced Vascular Surgical Skills and Simulation Assessment Program, the graduating vascular surgery resident and fellow participated in the annual event to assess their preparedness for independent practice.

The 47th Annual Northwestern Vascular Symposium, held in December, included a celebration of the legacy of James S. T. Yao, MD, PhD, one of its founders. Mark K. Eskandari, MD, was the course director for this important CME event.



Key division publications

Bold names denote Northwestern Medicine Department of Surgery faculty, trainees and staff at the time of publication.

Cortolillo NS, Guerra A, Murphy E, **Hoel AW**, **Eskandari MK**, Tomita TM. [Outcomes of the Gore® Excluder® iliac branch endoprosthesis using self expanding or balloon-expandable stent grafts for the internal iliac artery component.](#) *J Endovasc Ther.* Published online May 6, 2023. doi:10.1177/15266028231169177.

Ho K, Ramirez J, Kulkarni R, Harris K, Helenowski I, Xiong L, Ozaki C, Grenon S. [Plasma Gut Microbe-Derived Metabolites Associated with Peripheral Artery Disease and Major Adverse Cardiac Events.](#)

Pamulapati V, Cuda C, Smith T, Jung J, Xiong L, Swaminathan S, **Ho K**. [Inflammatory Cell Dynamics after Murine Femoral Artery Wire Injury: A Multi-Parameter Flow Cytometry-Based Analysis.](#)

Key faculty honors and awards

Karen J. Ho, MD, was promoted to associate professor of surgery with tenure.

Ashley K. Vavra, MD, was promoted to associate professor of surgery.

VASCULAR SURGERY

Faculty



Mark K. Eskandari, MD
Division Chief



Anand Brahmandam, MD



Karen J. Ho, MD



Andrew Hoel, MD



Neel A. Mansukhani, MD, MS



Heron E. Rodriguez, MD



Tadaki Tomita, MD



Ashley K. Vavra, MD

Research Faculty



Bin Jiang, PhD

Health System Clinicians



George E. Havelka, MD



Sherazuddin Qureshi, MD



Gabriel A. Wallace, MD



Julia Wilkinson, MD

EDELSTONE-BENDIX DAY

Edelstone-Bendix Day honors residents and fellows who have completed their surgical education. During the William H. Pearce, MD, Research Symposium, selected surgical residents and fellows present a basic science or clinical research project.



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