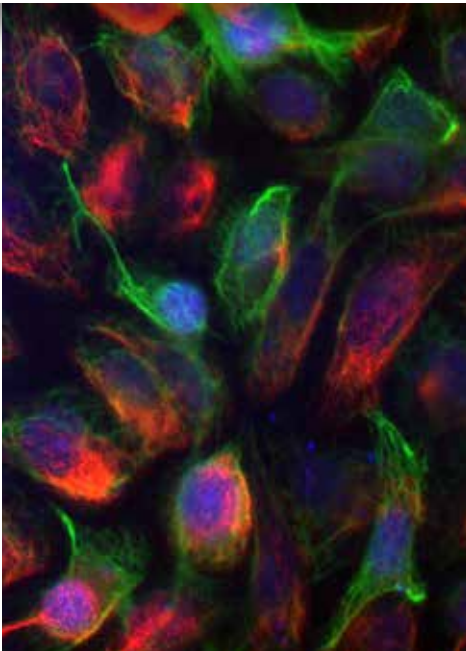


**Department of Surgery
2015 Annual Report**

Discovery, Innovation and Education
Advance Patient Care



Discovery

Program for Personalized
Cancer Care



Innovation

Implantation of New
Tendyne Mitral Valve



Education

Grainger Center for Simulation
and Innovation

Chairman's Letter



Mark Talamonti, MD

Chairman of Surgery,
Stanton and Margaret
Rogers Palmer Chair
of Surgery

Over the past eight years, I am proud to have led a Department that has been built upon an established tradition of clinical excellence and has grown greatly in depth, breadth and stature. Our primary mission remains to provide outstanding care for the patients for whom we are privileged to serve. But, in addition, we have developed strong programs in research and education. Indeed, we are increasingly recognized not only for clinical care, but also as one of the leading academic Departments of Surgery in the nation.

The Department consists of 10 Divisions led by distinguished Division Chiefs who are recognized leaders in their respective fields. As demonstrated in the accompanying graphs, our outpatient clinic volume has continued to increase steadily. Although our surgical volume has plateaued over the past three years, this reflects the increasingly complex nature of surgical cases being performed. Indeed, we continue to pioneer innovative minimally invasive surgical procedures, including in the past year transapically delivered mitral valve replacement and hypoglossal nerve implantation for the treatment of sleep apnea.

We closely monitor and strive to continually improve care through our Quality and Safety Initiative led by John Howington, MD. Among other significant accomplishments,

this initiative has resulted in both our hospital readmission and surgical site infection rates decreasing significantly over the past five years. In 2015, we launched a new Surgical Outcomes Research Program led by Katharine Yao, MD, through which we are analyzing and comparing our surgical outcomes to those reported in national health databases. Dr. Yao works with a team of our surgeons, surgical research fellows and biostatisticians to analyze treatment outcomes, identify areas for improvement, and design and implement clinical trials to enhance patient care.

Our Departmental research encompasses broad clinical and translational research initiatives. All of our clinical research is facilitated, supported and overseen by our Surgical Research Office (SRO). The SRO is led by Agnes Brugger, RN, who supervises a dedicated team of 30 nurses, research managers and research coordinators located in our core and nine satellite research offices. Our number of clinical trials has nearly tripled over the past eight years; currently, our Department has more than 150 active clinical studies, many of which have resulted in improved patient care and significant academic productivity.

Our translational research focuses on our new Program for Personalized Cancer Care (PPCC). This genomic-based program is led by Charles Brendler, MD, Vice Chairman of Surgery and Executive Director of the PPCC. The PPCC is composed of five cores led by distinguished scientists who have recently been recruited to NorthShore University HealthSystem (NorthShore), including Jianfeng Xu, MD, DrPH, Director of Cancer Genomics; Simon Hayward, PhD, Director of Cancer Biology; Yuan Ji, PhD, Director

of Computational Genomics and Medicine; Susan Crawford, DO, Director of Experimental Pathology and Imaging; and Chi-Hsiung Wang, Director of Biostatistics. All of these scientists have their faculty appointments through the Department of Surgery, and they and other Departmental investigators had 15 external grants funded in 2015.

The Department also has become a recognized leader in surgical education. University of Chicago Pritzker School of Medicine surgical trainees consistently rate NorthShore as their top educational experience, and our faculty continue to be recognized for their teaching contributions, with seven awarded individual recognition by the University of Chicago Pritzker School of Medicine in 2015. Our educational initiatives are led by Nancy Schindler, MD, MHPE, Vice Chairman of Surgery and the E. Stephen Kurtides, MD, Chair of Medical Education, who oversees and coordinates all of our postgraduate educational programs. Dr. Schindler also recently developed a Faculty Mentoring Initiative and works individually and tirelessly with our NorthShore surgical faculty members to help guide their career development and academic promotion.

The Grainger Center for Simulation and Innovation (GCSI), led by Michael Ujiki, MD, has become recognized as one of the leading surgical simulation centers in the nation. The GCSI has implemented a comprehensive surgical skills curriculum, and its numerous training courses all attract a large number of attendees from across the United States and Canada who almost universally rate their experiences as outstanding.

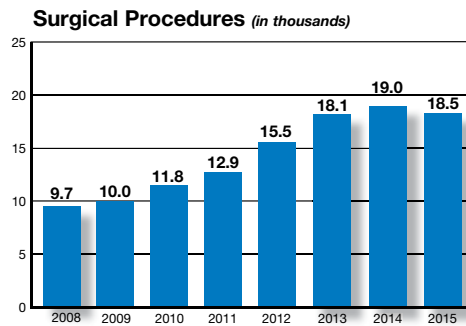
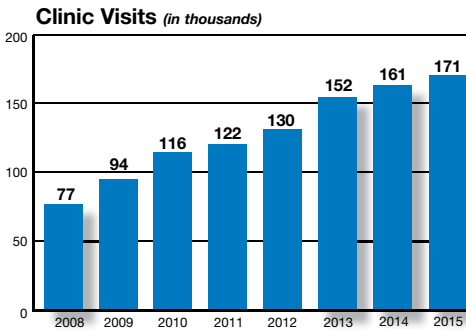
While I am indeed proud of our accomplishments, I am also keenly aware of the challenges we face in the rapidly



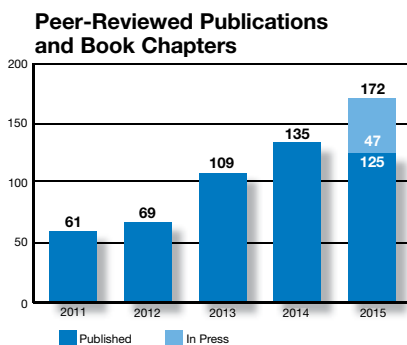
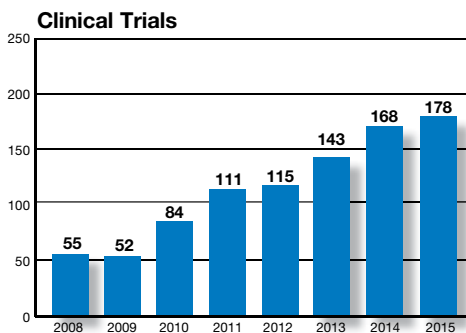
Comprised of 10 Divisions, the NorthShore Department of Surgery is supported by a strong team of Vice Chairs and administrative leadership, all focused on four pillars of excellence: research, education, quality improvement and patients' clinical experience.

changing and increasingly competitive healthcare environment. We must strive to continually improve clinical care through quality initiatives, outcomes analyses, and clinical and translational research, and we must continue to share our discoveries with our colleagues and maintain our dedication to educating future surgeons. We look forward to the year ahead and the opportunity to build on our tradition of excellence.

Clinical Growth



Academic Productivity



Discovery, Innovation and Education Advance Patient Care

NorthShore's Department of Surgery is dedicated to advancing the boundaries of patient care through pioneering research and innovative clinical initiatives designed to improve outcomes for our patients today and for generations to come.

Grainger Center for Simulation and Innovation

One of the country's leading surgical simulation training centers, the Grainger Center for Simulation and Innovation (GCSI), led by Michael Ujiki, MD, continues to offer a broad range of educational programs attracting a growing number of students and physicians.

A fully implemented curriculum for surgery residents has been exceptionally well-received by both residents and faculty. A postgraduate two-week full-time rotation incorporates pretesting for surgical skills, mentoring and teaching by NorthShore faculty, and post-testing to measure improvement in specific surgical skills. Surgical residents report that simulator time is extremely valuable, and research has shown that simulation skills improve performance in the operating room.

Curricula for medical students and physician assistant students include fundamentals such as basic laparoscopic camera holding and suturing skills. Every University of Chicago Pritzker School of Medicine resident practices weekly in the simulation lab.

Advanced surgical training programs in 2015 included two peroral endoscopic myotomy (POEM) courses.

NorthShore was an early adapter of this innovative procedure. Dr Ujiki, a recognized expert in minimally invasive technique, was joined by POEM originator Haruhiro Inoue, MD, as instructors for the sold-out session that drew physicians from across the country and Canada. NorthShore was one of three labs in the country to host training on the advanced trauma procedure resuscitative endovascular balloon occlusion of the aorta (REBOA). The GCSI also serves as a destination site for industry testing of new surgical instruments and design.



Surgery residents continue to praise the skills training at the Grainger Center for Simulation and Innovation as an incredibly valuable resource critical to their education and developing expertise.



The Grainger Center for Simulation and Innovation attracts students and physicians from around the country for a growing number of innovative training programs.

Program for Personalized Cancer Care

Over the past year, we have recruited a team of distinguished scientists and support staff, and purchased scientific equipment needed to perform complex genomic analyses. We have launched clinical trials for personalized cancer care in prostate cancer, as well as in breast and colorectal cancer, and we have begun to commercialize our proprietary genomic tests with the goal of making these tests widely available to the public. We recently opened a personalized prostate health clinic that provides genomic-based prostate cancer risk assessment and care. Preliminary data have formed the basis of 14 federal grants submitted over the past year, four of which have already been funded. We have entered into scientific collaborations with major medical institutions, including Johns Hopkins University in Baltimore, the Karolinska Institutet in Stockholm and Fudan University in Shanghai, and we have shared our discoveries with the international scientific community through 75 publications.

Unique Approach

Our approach to cancer care for prostate (as well as other cancers) differs from other medical institutions that are primarily focused on late-stage disease and the analysis of the genetic changes in an individual patient's cancer (somatic) DNA to determine the most effective chemotherapy. In contrast, our program is based fundamentally on the genetic pattern of an individual's hereditary (genomic) DNA to derive a personalized cancer risk assessment profile. Based on the inherited risk of developing a given cancer, individualized preventive screening and diagnostic cancer care strategies can be implemented; and, for individuals who develop cancer, analysis of both genomic and somatic DNA alterations can help identify optimal treatment. Thus, as shown in figure 1 below, rather than focusing only on advanced cancers, our approach encompasses the entire spectrum of cancer care.

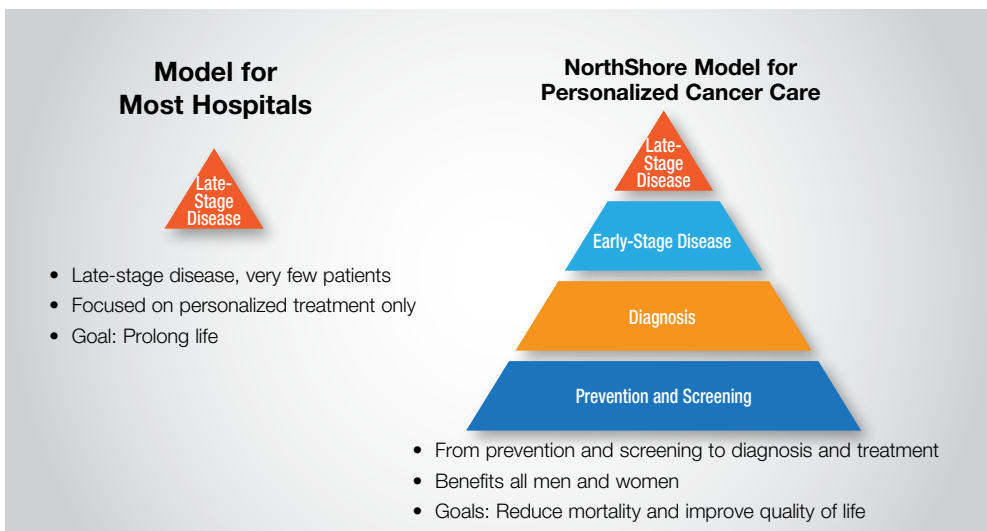


Figure 1

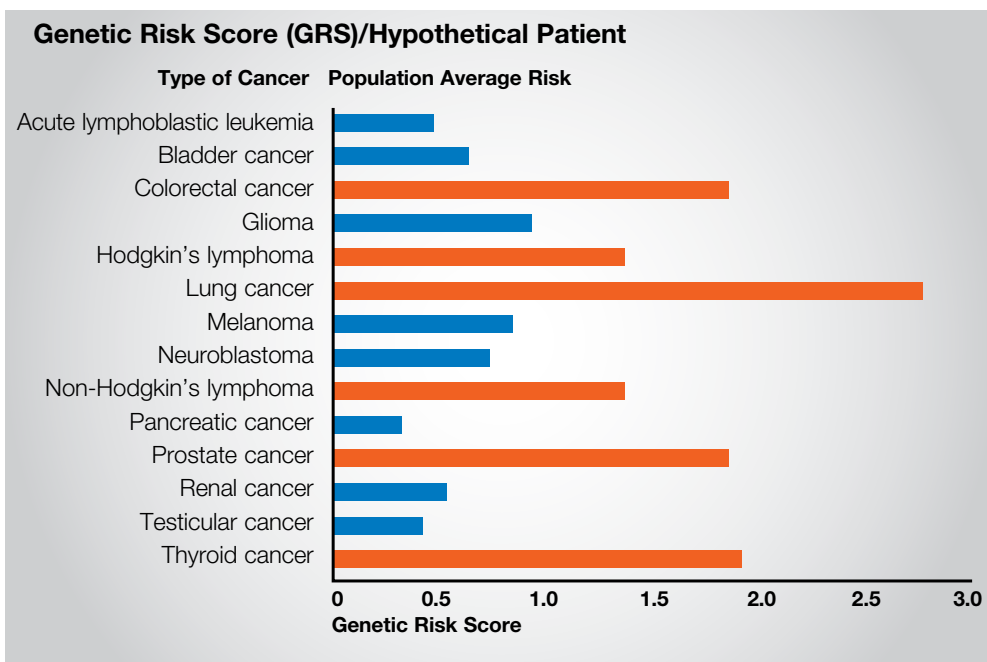


Figure 2

Genetic Risk Score

Our unique approach is made possible by our proprietary genetic risk score (GRS), a panel of genetic alterations specific for each type of cancer that has been developed and validated by our scientific team. The GRS supplements family history, which can be helpful but is often unknown or incomplete in assessing inherited risk of disease. Because the GRS is based on hereditary genomic DNA that does not change over an individual's lifetime, the GRS needs to be done only once and can be performed on a small sample of blood or saliva.

The panel of genetic alterations used to calculate the GRS varies with the type of cancer and can be applied to assess an individual's risk of developing many types of cancers. Genetic risk scores can be determined for multiple cancers, as shown in figure 2 to the left in a hypothetical male patient. With the average population risk of developing a given cancer being 1.0, this individual has an average or below average hereditary risk for eight cancers (blue bars) and an increased risk for six different cancers (red bars), with the highest risk being for developing lung cancer. Knowledge of inherited risk early in life could be very impactful and beneficial; for example, a 30-year-old man with an increased inherited risk for lung cancer might be further motivated to quit smoking. Conversely, a woman with a low GRS for breast cancer might not need to undergo mammography as early in life or as often as usually recommended in "one size fits all" cancer screening guidelines.

Surgical Outcomes Research Program

Over the past decade, there has been an increased focus on providing high-quality care to patients in the most cost-effective manner. Hospitals and physicians will soon be held accountable for clinical outcomes of their patients in a more transparent and stringent way than in the past.

In line with efforts to provide high-quality care, the Department of Surgery has formed the Surgical Outcomes Research Program (SORP) co-directed by Katharine Yao, MD, and Mihir Bhayani, MD. A multidisciplinary program of surgeons, research fellows and statisticians, SORP performs clinical outcomes research on large national databases to examine trends in surgical care, compliance with national guidelines, and clinical trials and survival outcomes.

We are currently working with the National Cancer Data Base, the National Surgical Quality Improvement Program, and the Surveillance Epidemiology End Results (SEER) and SEER Medicare databases. Surgeons work closely with research fellows who are recent college graduates, along with surgical residents and fellows, to develop research ideas, query the databases and analyze the data.

Biostatisticians from the NorthShore Research Institute work directly with the research fellows and surgeons to perform trend and survival analyses. The outcomes of these studies help inform future clinical trial design involving surgical procedures and identify gaps in compliance with accepted clinical guidelines.

Our intention is for hospitals and physicians to use our findings to improve the care they provide patients and ultimately the quality of care across the country.

Faculty Mentoring Initiative

Recognizing the importance of mentoring in faculty growth and development, a new Faculty Mentoring Initiative, led by Nancy Schindler, MD, MHPE, the E. Stephen Kurtides, MD, Chair of Medical Education, was established in 2015.

Throughout the year, our Division Chiefs met individually with each of their respective faculty members to provide mentorship and help develop specific career goals. As part of the new process, each

faculty member set three personal goals, which were aligned with Department goals for clinical success, leadership development, and research and education. Ongoing mentoring focused on individual development required to achieve specific goals.

The Department achieved 100 percent participation, a major success for a new initiative and a reflection of the shared belief in the importance of mentoring. In coming years, Dr. Schindler will continue to work with our Division Chiefs to further develop and expand this major initiative.

Quality and Safety Initiatives

The Department of Surgery works with a "Patient First" imperative that follows a long-standing culture focused on quality and patient safety. As the Director of Surgical Quality, John Howington, MD, leads a program that has served as a model for other departments across NorthShore and includes a fully engaged team that participates in formal peer-review of actual cases.

As one of 12 sites nationally that participated in the ProvenCare Lung Cancer Collaborative, NorthShore held itself accountable and adhered to 38 best-practice indicators associated with improved outcomes for surgical treatment of non-small cell lung cancer. In the last three years, NorthShore went from 60 percent to 90 percent adherence and decreased its median length of hospital stay to 2.0 days, which is significantly below a national expected stay of 4.3 days.

NorthShore also participates in the Illinois Surgical Quality Improvement Collaborative, which uses national quality improvement data and benchmarks that allow hospitals to compare outcomes and use data to drive quality improvement efforts.

Among the many quality improvements NorthShore has demonstrated in recent years is a decrease in surgical site infection from 1.2 percent in 2011 to its current level of 0.45 percent. A steady decline in hospital readmission rate within 30 days is another quality marker in which the Department of Surgery has significantly improved from 11.7 percent in 2011 to 10 percent in 2015.

Dr. Nancy Schindler, pictured here with Dr. Seth Krantz, leads the new Faculty Mentoring Initiative, designed to help each member of the Department reach personal goals related to clinical success and leadership development.



Surgical Research and Clinical Trials

Surgical Research

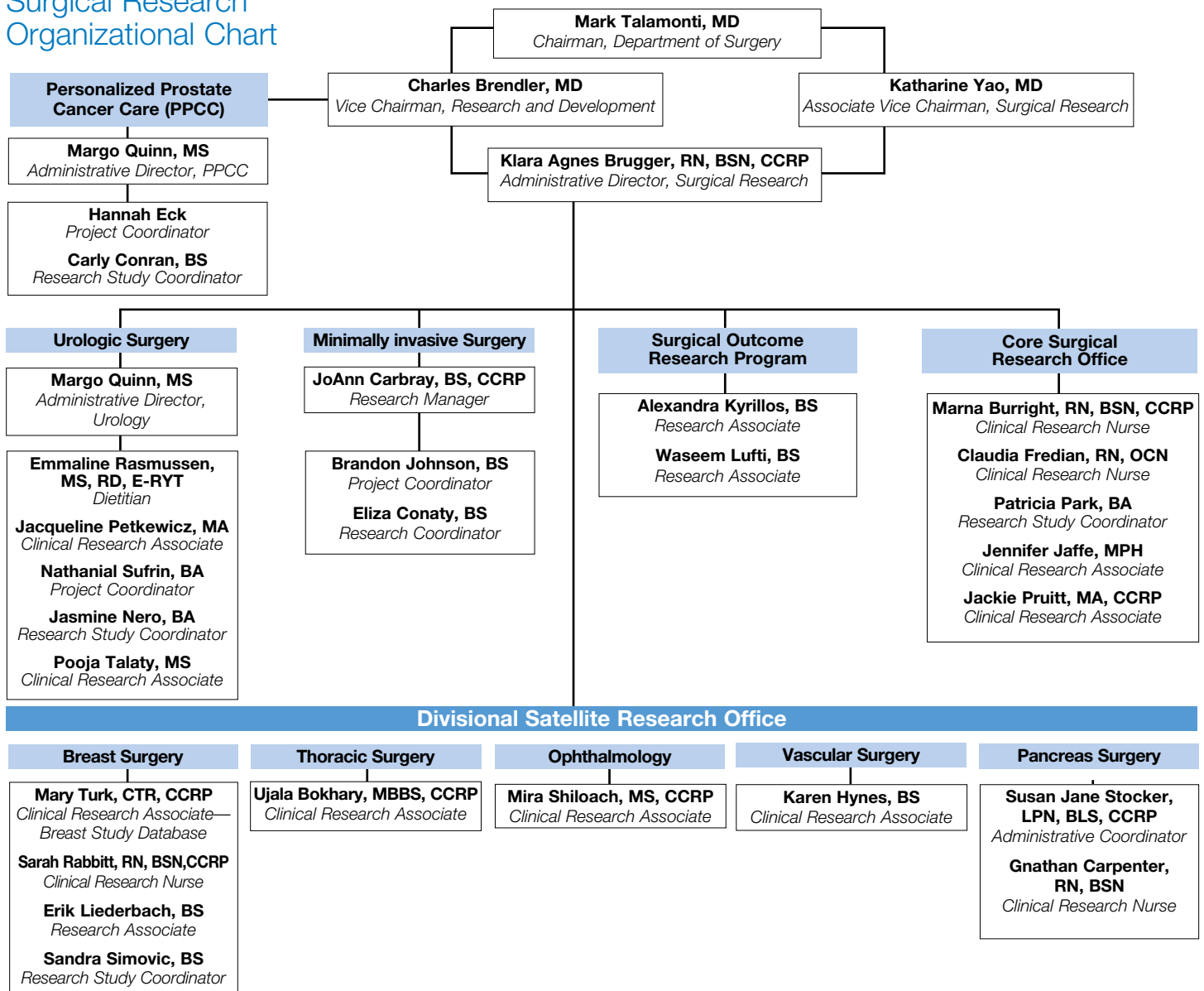
NorthShore surgeons are dedicated to improving patient outcomes, a mission that drives our commitment to research.

The Surgical Research Office provides essential support, backing research endeavors designed to advance all aspects of surgical care from study conception to academic productivity, which culminates in the implementation of changes in clinical practices based on discovered outcomes. Staff facilitates all phases of research study development from idea inception and feasibility assessment to data-base creation and write-up. Research finance and grant application submissions provided by research staff assist surgeons in managing research trials and ensure funding to complete trials. Expanding interest in the Department reflects new developments in the surgical field, and current studies are focused on personalized medicine and genetics, relevant cost analysis, and innovative devices to improve patient care. Long-term research database maintenance permits longitudinal investigation and allows for ongoing evaluation of standard of care practices while the incorporation of biospecimen collection provides disease-specific biogenesis and epidemiology.



The Surgical Research Office supports members of the Department of Surgery in research endeavors with staff trained and certified in clinical research. Members include (front row, from left) Jasmine Nero, Sarah Rabbitt, Klara Agnes Brugger, Dr. Charles Brendler, Marna Burrigh, Patricia Park, Jacqueline Petkewicz (back row, from left) Hannah Eck, Susan Jane Stocker, Carly Conran, Claudia Fredian, Nathaniel Sufrin, Mary Turk, Alexandra Kyrillos, Sandra Simovic, Eliza Conaty, JoAnn Carbray, Gnathan Carpenter, Jennifer Jaffe, Jaclyn Pruitt, Waseem Lutfi, Ujala Bokhary.

Surgical Research Organizational Chart



Clinical Trials

Investigator		Clinical Trial Sponsor
Division of Cardiac Surgery		
Feldman T	Mitral Implantation of TRAns catheter vaLves in native mitral stenosis	Edwards Lifesciences
Feldman T	REpositionable Percutaneous Replacement of Stenotic Aortic Valve through Implantation of the Lotus Valve System	Boston Scientific Corporation
Guerrero M	Early Feasibility Study of the Tendyne Mitral Valve System	Tendyne Holdings, Inc.
Pearson P	Pilot Study Protocol: Selective Cerebral Hypothermia Using a Cooling Head Cover During Elective Cardiac Surgery Under Cardiopulmonary Bypass	WEIkins, LLC

Division of General Surgery

Linn J	A Randomized Controlled Study of Self Fixating Mesh Versus Non Fixating Polyester Mesh for Laparoscopic Inguinal Hernia Repair	NorthShore
Muldoon J	Defining the Role of Microbes in the Pathogenesis of Intestinal Anastomotic Leak Via Serial Endoscopic Surveillance	Grant from American Society of Colon and Rectal Surgeons
Ujiki MB	Mandatory Preoperative Weight Loss as a Means of Success After Bariatric Surgery	NorthShore

Division of Ophthalmology

Macasai M	Effect of Corneal Preservation Time on Long-Term Graft Success (CPTS)	NEI
Maker M	Prompt Panretinal Photocoagulation versus Intravitreal Ranibizumab with Deferred Panretinal Photocoagulation for Proliferative Diabetic Retinopathy (DRCR protocol S)	NEI/ Genentech
Mehhta MP	Suture Fixation for Monocanalicular Stenting	NorthShore

Division of Otolaryngology

Bhayani MK	Impact of Thyroid Disease on Sleep Disorders	NorthShore
Chen JL	Failed Newborn Hearing Screening: Predicting Eustachian Tube Dysfunction, 2003-2009	NorthShore
Gerber ME	A Randomized Trial of the Management of Pediatric Chronic Rhinosinusitis with or without Balloon Sinuplasty (Lurie CM IRB#CM2010-14338)	NorthShore
Raviv JR	Study of Human Airway Disease	Northwestern University
Shinners MJ	Nucleus® Hybrid™ L24 Implant System: New Enrollment Study	Cochlear Americas

Division of Plastic Surgery

Bauer B	Creation of a Tissue Repository for Biological Samples from Congenital Nevi and Other Neurocristopathies	NorthShore
Howard M	Unilateral versus Bilateral Mastectomy and Reconstruction: A 5- and 10-Year Cost Analysis	NorthShore
Sisco M	The NorthShore Study of Surgical Decision-Making and Quality of Life Outcomes after Breast Cancer Surgery	BORP grant
Sisco M	Donor Site Morbidity in Free-Flap Reconstruction of Pediatric Congenital Melanocytic Nevi: Long-Term Follow-Up	NorthShore

Investigator		Clinical Trial Sponsor
Division of Surgical Oncology		
Baker M	Major Vascular Resection for Borderline Resectable Pancreatic Cancer in SEER-Medicare, Protocol Version 2, Dated 2/26/2015	NorthShore
Prinz R	Epigenetic Chromatin Conformation Changes in Peripheral Blood to Differentiate Benign versus Malignant Thyroid Lesions	NorthShore
Yao K	Effects of Preoperative Breast MRI on Surgical Outcomes, Costs and Quality of Life of Women with Breast Cancer Alliance A 011104/ACRIN 6694	Alliance

Division of Thoracic Surgery

Howington J	Best Practice in VATS Lobectomy for Lung Cancer: Database Management and Analytics for a Longitudinal Study to Optimize Care for Lung Cancer Patients	Ethon
Howington J	A Phase III Double-Blind Trial for Surgically Resected Early Stage Non-Small Cell Lung Cancer: Crizotinib versus Placebo for Patients with Tumors Harboring the Anaplastic Lymphoma Kinase (ALK) Fusion Protein E4512	Alliance
Kim KW	A Multicenter, Randomized Trial of Esophagectomy and Cervical Esophagogastrostomy with (two-stage) or without (one-stage) Prior Ischemic Gastric Preconditioning by Laparoscopic Ligation of Left Gastric and Short Gastric Arteries	NorthShore

Division of Urology

Brendler CB	Mind-Body Health in Uro-Oncology	NorthShore
Hayward S	Benign Prostatic Hyperplasia and Autoimmune Disease	NorthShore
Helfand B	Cancer Susceptibility: The ICPCG Study (International Consortium for Prostate Cancer Genetics)	NorthShore
Helfand B	LURN—Prospective Observational Cohort Study (Phenotyping Protocol 1)	NIH/NIDDK
McGuire M	3-Dimensional Transrectal Ultrasound for Prostate Cancer Diagnosis and Surveillance	NorthShore

Division of Vascular Surgery

Gupta N	Screening and Access to Health Care for Vascular Disease in Urban and Suburban Patient Populations	NorthShore/ Medtronic
Gupta N	A randomized, open label, parallel-group, multi-center trial to compare efficacy and safety of TachoSil® versus Surgicel® Original for the secondary hemostatic treatment of needle hole bleeding in vascular surgery	Takeda
Lind B	Complications in Catheter-Directed Thrombolysis	NorthShore

For more information on NorthShore clinical trials, visit northshore.org/research/clinical-trials

Translational Research

NorthShore focuses its scientific inquiry on the direct improvement of clinical care and patient outcomes. Our physicians, scientists and researchers have built our reputation on this translational approach to research. The Department of Surgery actively participates in a variety of important research studies involving several major cancers, which are highlighted below.

Cancer Biology Core

Simon Hayward, PhD, Director

Our goal is to bring together a multidisciplinary group of scientists focusing on early-stage prostate cancer (PCa) development and to facilitate the discovery of new treatments. Recent evidence supports the concept that the large majority of patients with early-stage PCa would be best served by avoiding surgery with its associated complications. However, other than active surveillance (AS), we currently lack nonsurgical alternatives to offer patients. Due to the understandable concern over silent disease progression to an incurable stage, the decision to enter an AS program can be exceptionally difficult.

PCa is composed of cancer cells and a cast of supporting actors including immune/inflammatory cells, nerves, muscle cells and a collection of connective tissue cells known as fibroblasts. This complex milieu is known as the **tumor microenvironment** and is a major focus of research. Increasing our understanding of the PCa microenvironment will have significant implications for the management of PCa and other cancers. Normal organs engage in continuous crosstalk between their component tissues to maintain a stable and tumor-free state. In cancer, the “volume” of this crosstalk increases. Over the past few years, many new drugs that target the molecules involved in this communication afford us novel approaches to bring this “noise level” down. Our goal is to develop medical approaches to stabilize low-volume PCa with minimal side effects, such that patients will be comfortable participating in AS and be able to lead healthy lives without undergoing major surgery.

Cancer Genomics Core

Jianfeng Xu, MD, DrPH, Director

We have established a strong team of scientists in genomic translational medicine by recruiting experienced investigators with expertise in DNA sequencing and genotyping (S. Lily Zheng, MD, and Jishan Sun, PhD), tumor genomics (Wennuan Liu, PhD), genetic epidemiology and evidence-based outcomes research (Deke Jiang, PhD, and Yung Na, MD), and research coordination (Carly Conran, BS, and Hannah Eck, BS). This team is critical to implementing the pyramid model of personalized cancer care, the centerpiece of the NorthShore PPCC (see figure 1, page 2).

In 2015, our major accomplishments include:

- 1) Developed and optimized a proprietary genetic risk score (GRS) that can be used clinically for genetic risk assessment of various types of cancer
- 2) Using our GRS, initiated the first clinical trial in the country for genomic-based targeted cancer screening for prostate, breast and colorectal cancer
- 3) Developed and optimized a proprietary genetic test for measuring tumor DNA copy number alterations in prostate biopsy samples to predict disease progression in AS patients
- 4) Initiated genomic studies in prostate, breast, pancreatic, colorectal and thyroid cancer
- 5) Published more than 25 peer-reviewed papers

Computational Genomics and Medicine Core

Yuan Ji, PhD, Director

Cancer genomics has generated a huge amount of information regarding the molecular aberrations underlying cancer. Our group—consisting of statisticians, bioinformaticians and computer scientists—focuses on the development of computational methods, software tools—and resources for big-data and precision medicine. Our research concentrates on three major areas of translational genomic cancer research:

- 1) We have developed a comprehensive information system of cancer genomic interactions, named Zodiac. Zodiac presents a whole-genome molecular interaction landscape of cancer by performing massive big-data computation on the most comprehensive cancer genomics database yet developed, The Cancer Genome Atlas (TCGA). We have analyzed about 200 million gene pairs in the genome and produced a large database and search engine, publicly available at compgenome.org/zodiac. Zodiac provides in-depth and vertical knowledge about functional interactions between molecular entities such as DNA and RNA in the whole genome. It is expected to help identify novel drug targets and support real-time clinical care.
- 2) Cancer development is an evolutionary process generating multiple subclones of cells marked by distinct somatic mutations. Traditional one-size-fits-all types of cancer treatments ignore the subclonal structure of cancers and cannot effectively kill all the tumor subclones. Understanding the genetic landscape of tumor subclones is crucial in successful cancer treatment. Using next-generation sequencing data, we are now able to develop computational methods and tools to identify the signals of individual subclones and reveal subclone-specific mutation profiles. Our work has recently been featured in many press releases, such as the *Science Daily News*: (sciencedaily.com/releases/2015/08/150809170251.htm).
- 3) Our group is a leader in developing novel designs for cancer clinical trials. We host a next-generation dose-finding design at compgenome.org/NGDF, which has now attracted pharmaceutical companies and cancer research institutions worldwide to design their trials. We also lead the field in finding subgroups in the patient population, another important and challenging problem in personalized precision medicine.

Experimental Pathology and Imaging Core

Susan Crawford, DO, Director

The goal of this core is to provide to the PPCC and other investigators pathology- and histology-related services, including pathological analysis of human and murine tissue, immunohistochemical staining and microdissection of tumor tissue from biopsy samples. In addition, we analyze histological and cytological samples using various imaging modalities such as immunofluorescence and confocal microscopy.

In 2015, the core facility has participated in the following projects:

Cancer and Benign Prostatic Hyperplasia (BPH) Biology

Principal Investigators: Simon Hayward, PhD, and Omar Franco, MD, PhD, NorthShore Research Institute

- 1) Expression of androgen receptor variant (ARV) in human prostate samples
- 2) Stromal and inflammatory changes in a murine model of prostate cancer
- 3) Pathological evaluation of human samples of BPH for a National Institutes of Health (NIH)-funded study

To learn more about ongoing inquiry and discovery at NorthShore, please visit northshore.org/research

Principal Investigators: Vadim Bachman, PhD, (Northwestern University) and Charles Brendler, MD

- 1) Assist in pathological assessment of tissue in an NIH-funded study which aims to apply an innovative optical imaging technique, partial wave spectroscopy (PWS), to assist in risk stratification of patients with low-grade prostate cancer enrolled in an active surveillance program
- 2) Provide lectures and training to Dr. Bachman's biomedical engineer

Principal Investigator: Prem Seth, PhD

Provide histological evaluation for a murine model of breast cancer and metastases and assess immunohistochemical stains

Principal Investigator: Joshua Meeks, MD, PhD, Northwestern University

Provide histological assessment of a murine model of bladder cancer

Principal Investigators: Wennuan Liu, PhD, and Jianfeng Xu, MD, DrPH
Micro-dissect prostate cancer biopsy samples for a study evaluating PTEN and MYC DNA copy number alterations to assist in risk stratification of patients with low-grade prostate cancer

Biostatistics Core

Chi-Hsiung Wang, PhD, Director

The Biostatistics Core facilitates the PPCC by supporting both clinical and translational research. This core oversees data quality assurance and provides advice and guidance on protocol design, sample size calculation, data analyses, and any other aspects of statistical consultation related to specific PPCC study aims.

The group has a great deal of expertise and experience in conducting complex clinical trials and has served as co-investigators for many internally and externally funded studies employing a large range of innovative and advanced statistical methodologies.

Recent research involves developing predictive models for personalized cancer care by using big data from our institutional electronic data warehouse, regional public health data and national cancer registries. We are developing statistical algorithms to improve the odds that a certain treatment will result in a favorable outcome for an individual cancer patient. The ultimate goal is to develop a multilevel statistical model that can predict the most advantageous personalized cancer care strategy for all patients. Using high-confidence statistical algorithms, we will be able to predict actionable treatments or interventions to better improve long-term health outcomes

Individual PPCC Initiatives

Breast Cancer (BCa)

Principal Investigator: Katharine Yao, MD

Collaborators: Catherine Pesce, MD, Jianfeng Xu, MD, DrPH, and S. Lilly Zheng, MD

- 1) **Personalized Screening for BCa:** To address a controversial issue, we are launching a combined retrospective and prospective study that will help determine at what age individual women should start screening mammography. These studies will use our unique and proprietary genetic risk score (GRS) to risk-stratify women and allow us to develop personalized screening strategies, rather than the current "one size fits all" screening guidelines.
- 2) **Genomic Risk Factors for Contralateral BCa:** Women often choose to undergo bilateral mastectomy because they overestimate their risk of developing cancer in the other breast. However, few studies have examined the genetic risk factors for contralateral BCa. We are using recently discovered contralateral BCa risk genes to provide individualized risk assessment and personalized care recommendations.

Head and Neck Cancer (H&NCa)

Principal Investigator: Mihir Bhayani, MD

Collaborators: Project 1—Wennuan Liu, PhD, and Bruce Brockstein, MD
Project 2—Yitan Zhu, PhD, Yuan Ji, PhD, and Omar Franco, MD, PhD
Project 3—Bruce Brockstein, MD, and Chi-Hsiung Wang, PhD

- 1) **Genomic Profile of Cutaneous Squamous Cell Carcinoma (cSCC):** The total number of new cSCC cases outnumbers all other cancers combined. Although most patients are surgically cured, a small but significant percentage of patients develop and eventually succumb to recurrent disease. Our objective is to use advanced sequencing technologies to create a risk profile predictive of cSCC aggressive behavior and to implement earlier adjuvant treatment.
- 2) **MicroRNA Dysregulation in H&NCa:** To improve survival in patients with non-human papilloma virus (HPV)-related H&NCa, we are employing a computational approach using genomic data from tumor tissue by interrogating The Cancer Genome Atlas (TCGA). Using these computational models, we have identified miRNA signatures that predict for poor prognosis. Our goal is to assess the functional effects of these miRNAs and their subsequent therapeutic potential in H&NCa.
- 3) **Outcomes Research:** We are participating in the Surgical Outcomes Research Program and investigating national cancer registries to identify disparities in presentation and treatment of H&NCa. These studies have resulted in numerous presentations at national meetings. We also have begun an analysis of the effectiveness of post-treatment imaging in H&NCa surveillance using the NorthShore Enterprise Data Warehouse to address the cost-effectiveness of imaging in these patients.

Prostate Cancer (PCa)

Principal Investigators: Projects 1 and 2—Brian Helfand, MD, PhD, and Jianfeng Xu, MD, DrPH
Project 3—Simon Hayward, PhD

Collaborators: Projects 1 and 2—Deke Jiang, PhD, Yung Na, MD, and S. Lilly Zheng, MD
Project 3—Omar Franco, MD, PhD

- 1) **Addressing PCa Screening Controversy:** The recent controversy over prostate-specific antigen (PSA) screening has resulted in fewer men undergoing PSA screening and being diagnosed with PCa. While decreased PSA screening has undoubtedly spared many men with non-life-threatening PCa unnecessary treatment, it is likely that men who harbor potentially lethal prostate cancer may escape early diagnosis and subsequently die of their disease. We have developed a smarter screening approach based on inherited PCa risk to identify which men are likely to develop aggressive PCa and, therefore, stand to benefit the most from PSA screening and subsequent diagnosis and treatment.
- 2) **Distinguishing Indolent from Aggressive PCa:** While most prostate cancers are non-life-threatening, others are rapidly progressive and fatal. In collaboration with Johns Hopkins University, we have recently analyzed genomic DNA from the blood of 96 men who died of PCa. We found that 20 percent of these men share a panel of inherited genetic alterations that are only rarely found in men with non-life-threatening PCa. We are now analyzing blood from 1,000 additional PCa patients to confirm this finding.

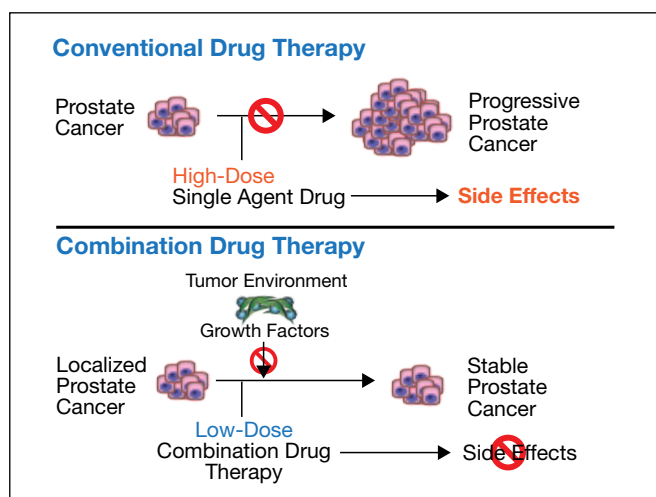
In a second collaboration with Johns Hopkins University, we have identified two major chromosomal abnormalities that are predictive of

continued

Translational Research

PCa mortality. These two studies have significant implications for men with PCa; if men harbor either the lethal gene panel or one or both of these two chromosomal abnormalities, we would recommend that they be treated immediately following diagnosis.

- 3) **Stabilization of PCa**—Our cancer biologists are developing a novel strategy to stabilize early PCa. Typically, to prevent a cancer from growing, a patient is treated with high-dose chemotherapy. While this treatment may slow the growth of the cancer, it often results in serious side effects. Our approach (see figure below) is to use a combination of nontoxic biological agents in low doses to stabilize early PCa and prevent it from growing, producing minimal, if any, side effects.



2015 External Grants Funded

Principal Investigator	Title	Fund Source	Total Costs Including Indirects
Brendler	Nanocytology to Mitigate Overdiagnosis of Prostate Cancer	NIH SBIR	\$99,244
Brendler	Risk Stratification of Prostate Cancer via Field Carcinogenesis Nanotechnology	NIH R01	\$427,275*
Brendler	Prostate Cancer SPORE (Specialized Programs of Research Excellence) Project #1: Germline Genetic Variants and Failure of Active Surveillance for Prostate Cancer	NIH P50	\$199,085*
Brendler	Reducing the Effects of Active Surveillance Stress, Uncertainty and Rumination through Engagement in Mindfulness Education (REASSURE ME)	NIH R01	\$333,007
Hayward	AP-1 Factors in the Pathogenesis and Progression of Benign Prostatic Hyperplasia	NIH R01	\$1,002,014
Hayward	Predicting Prostate Cancer Aggressiveness	NIH U01	\$375,524**
Hayward	Mechanism of BPH Progression	NIH U54	\$240,000
Xu	Genetic Alterations in Prostate Cancers among African-American Men and Comparisons with Cancers from European and Asian Patients	DoD	\$876,192
Totals	8 Grants		\$3,552,341

* Subcontract Northwestern University, Evanston, Illinois

** Subcontract Moffitt Cancer Center, Tampa, Florida

Gene Therapy Program

Principal Investigator: Prem Seth, PhD

Collaborators: Yuefeng Yang, Weidong Xu and Charles Brendler, MD

Systemic Delivery of an Oncolytic Adenovirus Expressing Decorin for the Treatment of Breast Cancer (BCa) Bone Metastases

There is an urgent need to develop novel therapies for BCa bone metastases. We have constructed an oncolytic adenovirus Ad.dcn and a nonreplicating adenovirus Ad(E1-).dcn, both containing the human decorin gene. Our in-vitro studies showed that Ad.dcn produced high levels of viral replication and decorin protein in BCa cells. Ad(E1-).dcn-mediated decorin expression in MDA-MB-231 cells down-regulated the expression of Met, β -catenin and vascular endothelial growth factor A, all of which are recognized decorin targets and play pivotal roles in the progression of BCa growth and metastasis. Adenoviral-mediated decorin expression inhibited cell migration and induced mitochondrial autophagy in MDA-MB-231 cells.

Mice bearing MDA-MB-231-luc skeletal metastases were systemically administered the viral vectors, and skeletal tumor growth was monitored over time. The results of bioluminescence imaging (BLI) and X-ray radiography indicated that Ad.dcn and Ad(E1-).dcn significantly inhibited the progression of bone metastases. At the terminal time point, histomorphometric analysis, micro-computed tomography and bone destruction biomarkers showed that Ad.dcn and Ad(E1-).dcn reduced tumor burden and inhibited bone destruction. A nonreplicating adenovirus Ad(E1-).luc expressing luciferase 2 gene had no significant effect on inhibiting bone metastases, and, in several assays, Ad.dcn and Ad(E1-).dcn were better than Ad.luc, a replicating virus expressing the luciferase 2 gene.

Our data suggest that adenoviral replication coupled with decorin expression could produce effective antitumor responses in an MDA-MB-231 bone metastasis model of BCa. Thus, Ad.dcn could potentially be developed as a candidate gene therapy vector for treating BCa bone metastases.

2015 Achievements in Education



Nancy Schindler, MD, MHPE

Vice Chairman of Surgery
and E. Stephen Kurtides Chair
of Medical Education

2015 University of Chicago Pritzker School of Medicine Appointments and Promotions

Promotion to Clinical Professor:

Nancy Schindler, MD, MHPE

Promotion to Clinical Associate Professor:

Marshall Baker, MD
Michael Howard, MD
Peter Rabiah, MD

Joseph Raviv, MD
Mark Sisco, MD

National Leadership Positions in Education

Nancy Schindler, MD, MHPE, serves as Chair of the Graduate Surgical Education Committee and on the Board of Directors for the Association for Surgical Education.

Departmental Awards and Honors

Paras Shah, MD, was honored as the Teacher of the Year by the University of Chicago Pritzker School of Medicine ophthalmology residents.

Michael Ujiki, MD, was the Alpha Omega Alpha Beta Chapter Volunteer Clinical Faculty 2015 Honoree for University of Chicago Pritzker School of Medicine.

University of Chicago Pritzker School of Medicine General Surgery Excellence in Teaching Awards:

Marshall Baker, MD Stephen Haggerty, MD Michael Ujiki, MD
Ernilo Barrera, MD Mark Talamonti, MD

Selected Presentations

Invited Speaking:

Schindler N, Corcoran J. Standard Setting. Association for Surgical Education, Seattle, Washington, March 22, 2015.

Schindler N, Tseng J. "Innovations in Surgical Education in the United States and at University of Chicago," Hong Kong Academy of Medicine, Hong Kong, presented November 2, 2015.

Workshops:

Schindler N, Miller M and the ASE Graduate Surgical Education Committee. Tools to implement an institution-wide quality and safety curriculum for residents. Association for Surgical Education, Seattle, Washington, March 24, 2015.

New Educational Programs and Initiatives

The NorthShore Department of Surgery Faculty Mentoring Initiative had a successful first year with 100 percent participation of our Division Chiefs.

A new "troubleshooting" curriculum, led by Stephen Haggerty, MD, was added to provide advanced simulation training to our senior residents. The curriculum prepares residents to manage unexpected problems and complications in the operating room.

Under the direction of Manvi Maker, MD, ophthalmology residents participated in a new simulation curriculum that uses 3-D printing of models to practice surgical skills.

A comprehensive Surgical Skills Assessment Reporting System was developed by Michael Ujiki, MD, to facilitate resident assessment and learning.

A Surgical Skills Boot Camp was offered for the second year to our incoming interns.

Mock Oral Exams were organized and led by Marshall Baker, MD.

NorthShore became an affiliated institution for the University of Chicago Pritzker School of Medicine otolaryngology residency program. Under the leadership of Mark Gerber, MD, and Mihir Bhayani, MD, we welcome these trainees.

Current Surgical Training Programs at NorthShore

Physician Assistant (PA) students: We participate in training PA students from many programs.

Surgery Clerkship students: University of Chicago Pritzker School of Medicine

Residency Training Programs:

University of Chicago Pritzker School of Medicine: General Surgery, Otolaryngology, Urology, Ophthalmology, Plastic Surgery

University of Illinois: Otolaryngology

Fellowship Training Programs:

University of Chicago Pritzker School of Medicine: Endocrine Surgery, Vascular Surgery, Cardiothoracic Surgery, Surgical Oncology, Colorectal Surgery, Pediatric Plastic Surgery

Division of Cardiac Surgery

Division Surgeons



Paul Pearson, MD, PhD
Division Chief

Hyde Russell, MD

Jonathan Somers, MD

Clinical Program Highlights

2015 heralded exciting changes for the Division of Cardiac Surgery. We welcomed Hyde Russell, MD, and Jonathan Somers, MD, to our clinical faculty. Our Division Chief, Paul Pearson, MD, is the surgical leader of the structural heart team in our Cardiovascular Institute. In concert with our colleagues in Interventional Cardiology, we are able to offer our patients the most advanced, minimally invasive therapy for heart valve disease. Dr. Pearson's practice includes transcatheter aortic valve replacement (TAVR), transcatheter mitral valve replacement (TMVR) and the surgical treatment of valvular heart disease.

New Faculty

Dr. Hyde Russell joined the Division of Cardiac Surgery in 2015. Dr. Russell completed his General Surgery training at the University of Chicago Pritzker School of Medicine and his Thoracic Surgery Fellowship at Northwestern University. He also completed a fellowship in pediatric and congenital cardiac surgery at Chicago Children's Hospital. His field of expertise includes surgery for heart failure, mechanical circulatory support and congenital cardiac surgery.

Division Growth

The Division of Cardiac Surgery continues to experience robust expansion of our clinical program with dramatic growth in the minimally invasive treatment of structural heart disease. In 2015 alone, we were able to treat more than 100 patients with trans-catheter aortic valve replacement (TAVR) at our Evanston campus.

Clinical Innovations and Research Highlights

The MITRAL Trial: Mitral Implantation of TRANscatheter vaLves in native mitral stenosis. NorthShore is the sole site in Illinois participating

in an FDA protocol to implant stent-mounted mitral valves in select high-surgical-risk patients with mitral valve stenosis/regurgitation and significant mitral valve annular calcification.

Tendyne CS-03EFS—Early Feasibility Study of the Tendyne Mitral Valve System: NorthShore is one of the few institutions in the United States taking part in the early human testing of the transapically delivered Tendyne mitral valve. The valve is specifically designed for mitral implantation in high-surgical-risk patients with mitral regurgitation.

REPRISE III Trial: REpositionable Percutaneous Replacement of Stenotic Aortic Valve through Implantation of the Lotus Valve System. NorthShore is one of the few U.S. sites to study the next generation of repositionable, stent-mounted aortic valves for transcatheter aortic valve replacement (TAVR). NorthShore was also the site of the first-ever human implantation of a Lotus Valve stent-mounted aortic valve in the United States.

Selective Cerebral Cooling During Cardiopulmonary Bypass: NorthShore is the primary study site to determine the feasibility and safety of the application of external hypothermia during elective cardiac surgery using the WEikins EMT/ICU Temperature Management System. It is hoped that selective head cooling will yield improved cerebral protection for patients undergoing heart surgery requiring extracorporeal circulation.

Teaching and Educational Highlights

Training the next generation of cardiac and thoracic surgeons: In concert with the Division of General Thoracic Surgery, the Division of Cardiac Surgery has partnered with the University of Chicago Pritzker School of Medicine to serve as a clinical teaching site for the University of Chicago's ACGME-accredited residency program in thoracic surgery.



Cardiologist Dr. Mayra Guerrero and Cardiac Surgery Division Chief Dr. Paul Pearson review patient images. NorthShore is one of the few institutions in the United States taking part in the early human testing of the Tendyne Mitral Valve (inset) for high surgical risk patients.

For more information,
visit [northshore.org/
cardio](http://northshore.org/cardio)

Division of General Surgery

Division Surgeons



Michael Ujiki, MD
Division Chief

Woody Denham, MD

Stephen Haggerty, MD

John Linn, MD

Barbara Loris, MD

Joseph Muldoon, MD

James Spitz, MD

Clinical Program Highlights

The Division of General Surgery consists of seven surgeons who provide comprehensive surgical services at all four NorthShore Hospitals. We offer particular expertise in bariatric, colorectal, gastroesophageal and hernia surgery. The Division continues to be a leader in applying the most up-to-date minimally invasive techniques to the surgical treatment of gastrointestinal diseases.

Division Growth

The Division has expanded to eight outpatient sites to provide a wide area of geographic access in Lake and Cook counties.

Clinical Innovations and Research Highlights

The Division continues to increase enrollment in several research databases including bariatric, gastroesophageal and hernia. Currently, the Division is involved in 30 single- and multicenter clinical trials, including:

- 1) A randomized double-blinded, parallel-group multicenter clinical trial using an endoscopic suturing device for primary weight loss (Essential Trial)
- 2) Multicenter prospective trial assessing biosynthetic mesh for ventral hernia repairs
- 3) Single-center prospective blinded randomized trial comparing self-adhesive mesh to controls for laparoscopic inguinal hernia repairs

The Division had 16 peer-reviewed publications in the 2014–2015 academic years.

Teaching and Educational Highlights

The Division continues to participate in the education of surgical residents and medical students from the University of Chicago Pritzker School of Medicine as well as physician-assistant students from Rosalind Franklin University of Medicine and Science. The Division continues to use the Grainger Center for Simulation and Innovation on a daily basis for its educational endeavors and has expanded the use of simulation in surgical education to a level comparable to other simulation leaders in the world.

Faculty and Accomplishments

Michael Ujiki, MD, is Clinical Associate Professor of Surgery at the University of Chicago Pritzker School of Medicine and focuses on foregut and hernia surgery. He was recently promoted to Division Chief and is Surgical Director of the Grainger Center for Simulation and Innovation.

Woody Denham, MD, was promoted to Vice President, Specialty Care Practice Network of the medical group. He is also Vice Chair of Surgery at NorthShore Highland Park Hospital and is Director of Bariatric Surgery, which was again accredited by the American College of Surgeons.

Stephen Haggerty, MD, was appointed Associate Program Director for the surgical residency at the University of Chicago Pritzker School of Medicine. Dr. Haggerty was awarded an excellence in teaching award for 2014–2015 and also serves as Project Manager on the Guidelines Committee for the Society of American Gastrointestinal and Endoscopic Surgeons. Dr. Haggerty is an international expert in the placement of peritoneal dialysis catheters and presented his technique at the 2015 American College of Surgeons' meeting in Chicago, Illinois.

John Linn, MD, is a Clinical Assistant Professor of Surgery at the University of Chicago Pritzker School of Medicine and specializes in complex hernia repairs and foregut surgery. He is Medical Director of Physician Assistant Services. Dr. Linn is currently involved in several prospective trials looking at various hernia mesh implants. He serves on several national committees for the Society of American Gastrointestinal and Endoscopic Surgeons while maintaining an exceptionally busy clinical practice.

Barbara Loris, MD, specializes in laparoscopic approaches to gastrointestinal disease and hernias. She also specializes in venous disease of the lower extremities. Dr. Loris is now mentoring the Fundamental Use of Surgical Energy for surgical residents on their skills rotation at the Grainger Center for Simulation and Innovation.

Joseph Muldoon, MD, is Section Chief of Colorectal Surgery at NorthShore and Clinical Assistant Professor of Surgery at the University of Chicago Pritzker School of Medicine. Dr. Muldoon presented his work on operating room cost reduction at the 2015 meeting of the American Society of Colon and Rectal Surgeons and is site Principal Investigator for two ongoing clinical trials.

James Spitz, MD, is Clinical Assistant Professor of Surgery at the University of Chicago Pritzker School of Medicine and maintains an exceptionally busy practice specializing in benign and malignant disease of the colon and rectum. Dr. Spitz has strong endoscopic and laparoscopic skills and is highly involved in surgical resident and fellow education.

For more information,
visit [northshore.org/
generalsurgery](http://northshore.org/generalsurgery)

Division of Ophthalmology

Division Surgeons



Marian Macsai, MD
Division Chief

Rebekah Braslow, MD

Troy Close, MD

Jay Futterman, MD

Joshua Herz, MD

Andrea Honigsblum, MD

Samira Khan, MD

Katherine Kwan, OD

Ann Laurenzi-Jones, OD

Manvi Maker, MD

Milap Mehta, MD

William Myers, MD

John Pula, MD

Peter Rabiah, MD

Scott Rosen, MD

Paras Shah, MD

For more information,
visit [northshore.org/
ophthalmology](http://northshore.org/ophthalmology)

Clinical Program Highlights

New Faculty

Rebekah Braslow, MD, received her medical degree at Yale and completed her ophthalmology training at UCLA. Prior to joining NorthShore, she held faculty appointments at Washington University, the University of Illinois at Chicago, and the University of Chicago. She provides comprehensive ophthalmology care in Lake County and oversees our journal club.

We will be recruiting another retinal surgeon in 2016.

Division Growth

2015 was another year of remarkable clinical growth. The new Ophthalmology Center at NorthShore Skokie Hospital reached capacity in 2014, resulting in conversion of administrative space to patient exam rooms in 2015.

Clinical Innovations and Research Highlights

The Cataract Surgery Structured Clinical Documentation System (SCDS) was implemented in Epic to easily document and collect data. Paras Shah, MD, is the physician leader.

Our Division participated in a recently published National Eye Institute (NEI)-funded study that yielded important results for treating diabetic eye disease. Manvi Maker, MD, was the NorthShore investigator on this study.

Marian Macsai, MD, is an investigator in the Cornea Preservation Time Study. This NEI-funded study group recently published a paper on the potential impact on the cornea donor pool in the United States.

Teaching and Educational Highlights

Peter Rabiah, MD, teaches medical students at the University of Chicago Pritzker School of Medicine.

Dr. Maker leads the surgical ophthalmic skills training course for residents at the Grainger Center for Simulation and Innovation.

Honors, Awards and Academic Recognition

Marian Macsai, MD—President Elect of the Cornea Society

Peter Rabiah, MD—Promoted to Clinical Associate Professor at the University of Chicago Pritzker School of Medicine

Paras Shah, MD—Teacher of the Year, University of Chicago

John Pula, MD—Promoted to Clinical Associate Professor at the University of Chicago Pritzker School of Medicine

John Pula, MD—Named Chairman of the North American Neuro-Ophthalmology Society Young Neuro-Ophthalmology Committee

Other Accomplishments

Marian Macsai, MD—Co-Chair Clinical Complications, World Health Organization Project Notify

Marian Macsai, MD—Co-Organizer of the World Cornea Congress

Marian Macsai, MD—Member of the Advisory Committee on Blood and Tissue Safety and Availability for the Office of the Secretary of Health

Paras Shah, MD—Member of the Epic Optimization Committee

Manvi Maker, MD—Task force member of NorthShore Leadership Forum

Faculty and Accomplishments

Dr. Macsai specializes in cornea, cataract and refractive surgery as well as external eye disease. Her primary areas of research are cornea transplant and dry eye. As Chief of Ophthalmology, she ensures the delivery of the highest quality medical and surgical eye care at NorthShore.

Troy Close, MD, takes an active interest in diseases affecting the optic nerve and visual field.

Jay Futterman, MD, is a comprehensive ophthalmologist who has continued to expand NorthShore's ophthalmology services into Lake County.

Joshua Herz, MD, enjoys challenging cases including complex cataract, cornea and refractive cases. He is the lead physician on the laser safety committee.

Andrea Honigsblum, MD, is a comprehensive ophthalmologist with a particular interest in autoimmune disease and other inflammatory conditions, including iritis, uveitis, scleritis and inflammatory dry eye.

Samira Kahn, MD, is a retina and vitreous surgeon who is developing our retina service. She is developing numerous protocols to streamline the delivery of retina care.

Katherine Kwan, OD, is an optometrist who provides quality vision correction options to those who struggle to see well with glasses or contact lens. She helps provide postoperative care to cataract surgery patients.

Ann Laurenzi-Jones, OD, is an optometrist who specializes in complex contact lens fits.

Dr. Maker provides excellent retinal and comprehensive eye care with a special interest in diabetic eye diseases.

Milap Mehta, MD, specializes in plastic and reconstructive surgery of the eye and orbit. He presented a new facial reconstructive surgery procedure at the 2015 American Society of Ophthalmic Plastic and Reconstructive Surgery meeting and authored an orbital surgery chapter in a retina textbook.

Dr. Pula is a neuro-ophthalmologist who works in both neurology and ophthalmology. Dr. Pula was a course instructor for the American Academy of Neurology's 2015 Annual Meeting Neuro Ophthalmology Skills Session Conference.

Dr. Rabiah provides care for children with all forms of eye disease and adults with strabismus. He runs an active screening and treatment program for retinopathy of prematurity at the NorthShore Evanston Hospital Neonatal Intensive Care Unit (NICU). Academically, his primary research interest is in ocular toxoplasmosis.

Scott Rosen, MD, is a busy comprehensive ophthalmologist who enjoys working with and teaching the residents and helps them in their surgical wet lab.

Dr. Shah provides comprehensive ophthalmology care as well as adult strabismus surgery.

Division of Otolaryngology

Division Surgeons



Mark Gerber, MD
Division Chief

Mihir Bhayani, MD

Judy Chen, MD

Aaron Friedman, MD

Steven Horwitz, MD

Jonathan Pomerantz, MD

Joseph Raviv, MD

Ilana Seligman, MD

Michael Shinnars, MD

Audiology

Kathryn Bialobok, AuD

Theresa Delacenserie, AuD

Kristine Erickson, AuD

Susan Marek, AuD

Margaret Molloy, AuD

Lyn Rutledge, AuD

Maria Secaras, AuD

Lukas Suveg, AuD

Jennifer von Doring, AuD

Megan Worthington, AuD

Speech Pathology

Christine Martin, MA

Meghann Olive, MS

Sweta Soni, MA

Julie Wickery, MA

Lauren Wills, MA

For more information, visit northshore.org/otolaryngology-head-neck-surgery

Clinical Program Highlights

The Division of Otolaryngology–Head and Neck Surgery includes nine otolaryngologists, and 10 audiologists and five speech pathologists. In addition to providing outstanding general otolaryngology care, multidisciplinary teams manage complex issues including allergy/sinus, lateral and anterior skull base, head and neck cancer, professional voice, sleep surgery, adult and pediatric hearing loss and cochlear implantation, pediatric airway voice resonance and swallowing disorders, salivary gland disorders, and endocrine (thyroid/parathyroid) surgery. We have five outpatient sites including our flagship location in Northbrook, as well as satellite offices in Vernon Hills, Skokie and Evanston Hospitals, and the NorthShore Kellogg Cancer Center at Evanston Hospital.

Mihir Bhayani, MD, and Jonathan Pomerantz, MD, recently performed the first hypoglossal nerve implantation for airway stimulation—a new, minimally invasive treatment for obstructive sleep apnea.

In addition to providing multidisciplinary head and neck cancer care, Dr. Bhayani has established a complex salivary gland care program with one of the busiest centers in the region for sialendoscopy, a minimally invasive technique to diagnose and treat benign salivary gland problems.

Joseph Raviv, MD, (Rhino) and Michael Shinnars, MD, (Neuro) continue to expand their tertiary practices and with the recent addition of Ricky Wong, MD, (Neuro), they have built an outstanding skull base team for care of complex lesions of the anterior and lateral skull base.

We have 10 audiologists available in four locations who provide comprehensive care ranging from follow-up for failed hearing screenings to cochlear implant programming. In collaboration with industry, Dr. Shinnars and our audiologists are investigating benefits of cochlear implantation in single sided deafness as well as hearing preservation potential with hybrid cochlear implants.

Our Pediatric Otolaryngology–Head and Neck Surgery team remains strong with over 12,000 outpatient visits, and more than 1,000 primary and complex surgical procedures performed in 2015.

The NorthShore Voice Center, has continued to grow under the direction of Aaron Friedman, MD. This program is a collaborative effort with our three specialty trained voice pathologists from NorthShore's Department of Rehabilitation.

Teaching and Educational Highlights

Our faculty is active in training residents and medical students from both the University of Illinois and University of Chicago Pritzker School of Medicine programs. We continue to conduct

surgical training courses in the Grainger Center for Simulation and Innovation (GCSI) for residents from several of the Chicago area programs. Both the 6th annual Chicago resident sinus course and the annual resident temporal bone courses were well attended and received. Mark Gerber, MD was Co-Director for and Judy Chen, MD spoke at the first annual NSUHS Pediatric Symposium.

Faculty and Other Accomplishments

Mark Gerber, MD, is the Division Chief and Director of Pediatric Otolaryngology. He provides both general pediatric Oto-HNS care and multidisciplinary care for children with complex airway, voice, resonance and swallowing disorders.

Mihir Bhayani, MD, is the Director of both our Head and Neck Surgery and Salivary Gland Disorders programs. With significant philanthropic support, he has also established a laboratory for translational research in head and neck cancer.

Judy Chen, MD, is fellowship-trained in pediatric otolaryngology. Some of her current research focuses on hearing loss in children.

Aaron Friedman, MD, is a laryngologist with expertise in the surgical treatment of laryngeal disorders including phonosurgery, laryngeal framework surgery, KTP laser and office-based laryngeal procedures. Dr. Friedman received his subspecialty training at Harvard under world-renowned laryngeal surgeon, Dr. Steven Zeitels, a pioneer and leader in the field of laryngology who has operated on such famous voices as those of Adele and Sam Smith. Dr. Friedman brings the same state-of-the-art laryngeal treatments that were developed in Boston to the Chicago region.

Steven Horwitz, MD, is a general otolaryngologist at our Skokie and Vernon Hills locations. He enjoys teaching and is involved in all aspects of the care of general ear nose and throat problems.

Jonathan Pomerantz, MD, is the Director of the Sleep Surgery Program. He recently completed a year long Patient Safety and Quality Fellowship that included implementing a new screening and treatment protocol for the preoperative identification of patients at high risk for undiagnosed obstructive sleep apnea.

Joseph Raviv, MD, is the Director of the Rhino/Sinus Surgery Program and is actively involved in the multidisciplinary Skull Base and Allergy/Sinus programs.

Ilana Seligman, MD, has provided outstanding patient care over her years of service at NorthShore. She will be retiring in the coming year.

Michael Shinnars, MD, is the Director of the Neurotology and Cochlear Implant programs and has built a regional center of excellence for care of complex disorders of the ear and lateral skull base.

Division of Plastic Surgery

Division Surgeons



Mark Sisco, MD
Division Chief

Bruce Bauer, MD

Michael Howard, MD

Jeremy Warner, MD

Clinical Program Highlights

The Division of Plastic Surgery continues to provide a broad range of aesthetic and reconstructive surgical procedures to the NorthShore community. In addition to providing state-of-the-art surgical care, a focus on providing best-in-class patient service has earned the Division leading patient loyalty scores in the Department.

Division Growth

The Division continued to post strong growth numbers. In FY2015, Plastic Surgery closed nearly 10,000 patient encounters. Net collections increased 9 percent, and work relative value units (RVUs) increased 5 percent compared to FY2014.

Clinical Innovations and Research Highlights

The Division continues to innovate in providing aesthetic surgery in the office under local anesthesia. It has also developed and implemented improved methods for pain control in patients undergoing mastectomy. The Division has gained national media recognition for research focusing on quality outcomes for breast cancer patients.

Teaching and Educational Highlights

At the Grainger Center for Simulation and Innovation, the Division offers hands-on training to plastic surgery residents throughout the Chicago area. The annual Microsurgery Skills Acquisition Training Program, held in conjunction with the University of Chicago Pritzker School of Medicine, was recognized in a poster presentation at the national Association for Surgical Education. The Chicago Rhinoplasty Symposium, in its fifth year, attracts residents from all five Chicago plastic surgery training programs. In addition, all four Division members have continued to instruct courses in plastic surgery at the national level.

Honors, Awards and Academic Recognition

Michael Howard, MD, and Mark Sisco, MD, were promoted to Clinical Associate Professor of Surgery in 2015. Dr. Sisco was named to the editorial board of the *Journal of Surgical Oncology*. Jeremy Warner, MD, has been appointed by both the American Society for Aesthetic Plastic Surgery and the American Society for Plastic Surgery to serve as the national representative to the American Academy of Otolaryngology—Head and Neck Surgery Foundation for a national initiative to develop clinical practice guidelines for rhinoplasty.

Faculty and Accomplishments

Dr. Sisco maintains a practice focused on aesthetic and reconstructive surgery of the breast and body. He also performs microsurgery for head and neck cancer patients as well as for children with unusual reconstructive problems.

Bruce Bauer, MD, maintains an international pediatric practice that employs tissue expansion and complex flap techniques for the treatment of giant pigmented nevi, congenital and acquired deformities of the ear, and vascular deformities.

Dr. Howard is Associate Program Director for the University of Chicago Pritzker School of Medicine Plastic Surgery residency. He specializes in aesthetic and reconstructive breast surgery, surgery for massive weight loss, and extremity and cranial reconstruction.

Dr. Warner, whose clinical specialties are reconstructive and aesthetic facial surgery, is a nationally recognized leader and educator in rhinoplasty.

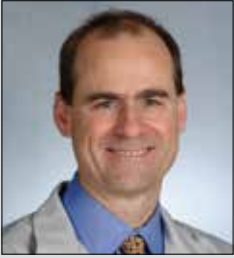


Dr. Michael Howard, an expert in plastic and reconstructive surgery and breast reconstruction, also provides advanced cosmetic appearance care.

For more information, visit northshore.org/plastic-surgery

Division of Surgical Oncology

Division Surgeons



David J. Winchester, MD
Division Chief

Marshall Baker, MD

Ermilo Barrera, MD

Lawrence Krause, MD

Tricia Moo-Young, MD

Catherine Pesce, MD

Richard Prinz, MD

Mark Talamonti, MD

Katharine Yao, MD

For more information,
visit [northshore.org/
cancer](http://northshore.org/cancer)

Clinical Program Highlights

The Division of Surgical Oncology offers comprehensive surgical oncology care, with expertise in breast, endocrine, gastrointestinal, hepatobiliary, pancreas, melanoma and sarcoma, within NorthShore's Commission on Cancer (COC) Accredited Cancer Program. In 2015, Catherine Pesce, MD, introduced radioactive seed localization surgery, providing a more streamlined and efficient experience for breast cancer patients. Ermilo Barrera, MD, expanded his breast cancer practice to include care at the University of Chicago Hospital for a one-year commitment. In addition to Highland Park, Lawrence Krause, MD, provides care to breast patients in Chicago on a biweekly basis. Tricia Moo-Young, MD, has expanded her Lake County expertise in endocrine surgery, joining Marshall Baker, MD, as he splits his clinical expertise in hepatobiliary surgery at Evanston and Highland Park.

Research Highlights

The Division of Surgical Oncology continues to maintain a strong presence at national meetings as well as creating high-impact publications. In 2015, the Division had 34 presentations at national meetings, most leading to publications in peer-reviewed journals. Katharine Yao, MD, has assumed the role of Associate Vice Chair of Research and Development for the Department of Surgery in 2015 to facilitate the Division's and Department's focus on clinical outcomes research and genomic research for personalized medicine.

Teaching and Educational Highlights

The 2015 Surgery Excellence in Teaching Awards of the University of Chicago Pritzker School of Medicine were presented to three members of the Division of Surgical Oncology, including Drs. Baker, Barrera and Mark Talamonti, MD.

Honors, Awards and Academic Recognition

Dr. Yao received the Distinguished Service-Specialty Care Award at the 7th Annual State of Our Union. Dr. Talamonti has been elected President of the Chicago Surgical Society.

Richard Prinz, MD, was the Norman C. Estes Surgery Symposium Keynote Speaker, Central Illinois Surgical Week 2015, 65th Annual Scientific Meeting Illinois Chapter of the American College of Surgeons, 2nd Annual Norman C. Estes, MD, Surgery Symposium, Peoria, Illinois.

Faculty and Accomplishments

David J. Winchester, MD, (Division Chief) Clinical Professor of Surgery, fellowship-trained surgical oncologist specializing in breast, thyroid, melanoma and sarcoma with more than 10 years of service with the American Joint Committee on Cancer and the Commission on Cancer. Active in cancer outcomes research and cancer staging.

Marshall Baker, MD, MBA, Associate Clinical Professor of Surgery, fellowship-trained hepatobiliary/pancreas surgeon. As Associate Vice Chairman of Research, focused on clinical outcome research for patients with pancreas cancer.

Ermilo Barrera, MD, Associate Clinical Professor of Surgery and Family Medicine, fellowship-trained surgical Oncologist with a focus on breast cancer, offering expert services at Glenbrook and the University of Chicago.

Lawrence Krause, MD, providing personalized care for women with breast diseases for more than 15 years at Highland Park Hospital and in Chicago.

Tricia Moo-Young, MD, Assistant Clinical Professor of Surgery, specialty-trained endocrine surgeon with a focus in thyroid and parathyroid surgery, offering services in Lake County with a clinical research focus on endocrine surgery outcomes.

Catherine Pesce, MD, Assistant Clinical Professor of Surgery, fellowship-trained breast surgeon offering compassionate care in Lake County. A member of the Society of Surgical Oncology and American Society of Breast Surgeons. Active in breast cancer outcomes research.

Richard Prinz, MD, (Vice Chairman) Clinical Professor of Surgery, former president of the American Association of Endocrine Surgeons with practice limited to thyroid, parathyroid and adrenal diseases with nearly 300 published peer-reviewed articles.

Mark Talamonti, MD, (Chairman) Clinical Professor of Surgery, fellowship-trained surgical oncologist with clinical practice and research focused on hepatobiliary and pancreatic disease. Productive research experience anchored by his creation of one of the country's largest and most productive pancreas cancer databases.

Katharine Yao, MD, Associate Clinical Professor of Surgery, fellowship-trained surgical oncologist with clinical practice and research focused on breast diseases. As the Associate Vice Chair of Research and Development, she has extensive experience with breast cancer outcomes research, working with multiple databases and clinical trials.

Division of Thoracic Surgery

Division Surgeons



John Howington, MD
Division Chief

Ki Wan Kim, MD

Seth Krantz, MD

New Faculty

Seth Krantz, MD, joined our Division in 2015. Dr. Krantz received his MD and completed surgical residency at Northwestern University Feinberg School of Medicine and then a fellowship in cardiothoracic surgery at Washington University School of Medicine. His specialty interests include thoracic surgical oncology and outcomes research.

Division Growth

In 2015, the Division of Thoracic Surgery experienced a 50 percent growth in the volume of esophageal resections for treatment of esophageal cancer.

Clinical Program Highlights

Thoracic-Oncology Program: Led by Co-Directors John Howington, MD, and medical oncologist Thomas Hensing, MD, our multispecialty team meets weekly to discuss individual patient cases, bringing collective expertise to the development of personalized treatment plans. The program and patients are supported by our shared Nurse Navigator Gail Ronkoske, BSN, OCN. The thoracic research teams also meet weekly to review local and national clinical trials as well as investigator-initiated studies.

Illinois Surgical Quality Improvement

Collaborative: Dr. Howington serves as the Surgeon Champion for NorthShore in this collaborative that consists of more than 40 leading Illinois hospitals working together to improve quality and safety and lower costs of surgical care. The objective is to obtain rapid, meaningful and sustained improvement in surgical quality by facilitating engagement in mentored and targeted quality improvement and performance improvement initiatives.

Thoracic Tumor Data Registry and Biorepository:

These resources contain clinical data for more than 3,000 subjects and 960 thoracic tumor samples. In 2015, NorthShore collaborated with the University of Chicago and West Virginia University on two studies:

- Fifty non-small cell lung cancer tissue samples were stratified in the patient cohort. This pilot study was completed in 2014, and a larger cohort of 100 samples were analyzed in 2015.
- As part of The Chicago Thoracic Oncology Database Consortium (CTODC), which was created to standardize data collection and facilitate the pooling and sharing of data at institutions throughout Chicago and across the world, we shared de-identified data with the University of Chicago from lung cancer patients treated with Tarceva. A resulting manuscript was submitted for publication to *BMJ Open*.

Thoracic Surgical Oncology Structured Clinical Documentation System (SCDS)

Project: After successfully implementing an SCDS clinical note, the thoracic team worked with the SCDS team at our Center for Biomedical Research Informatics to develop distinct structured operative notes for lung cancers, esophageal cancers and thymic tumors. Ki Wan Kim, MD, is the physician leader in SCDS development for our Division.

Teaching and Educational Highlights

The Division of Thoracic Surgery, in collaboration with the University of Chicago Pritzker School of Medicine Thoracic Surgery fellowship program, helped train fellows Diego Avella Patino, MD, and Brian Mitzman, MD. With the assistance of our three certified Physician Assistants (PA-C) Amy Call, Kaitlin Bryzinski and Alison Glinski, the Division also helped train Physician Assistant students from Rush University Medical Center and Rosalind Franklin University.

Our two summer premedical undergraduate research interns, Zari Watts from the University of Chicago and Kendall Elue from Hampton University, presented individual quality improvement projects at our annual Thoracic Oncology Research Conference. This summer internship and our research efforts are well-supported by our Research Coordinator, Ujala Bokhary, MBBS.

Honors, Awards and Academic Recognition

John Howington, MD, was elected as a member of the University of Chicago Pritzker School of Medicine Thoracic Residency Clinical Competency Committee and the American Academy of Thoracic Surgery Robotics Fellowship Review Committee.

Top Performing Practice for Patient Loyalty
NorthShore University HealthSystem

Physician Excellence Award presented by the nurses of NorthShore Evanston Hospital

NorthShore Medical Group Member Award,
"Distinguished Contribution in Medicine"

Loyalty Leader Award, NorthShore University HealthSystem

Postgraduate Program Committee, Southern Thoracic Surgical Association, Co-Chair

Moderator, Southern Thoracic Surgical Association Postgraduate Program

Director, Medical Group Quality: Surgical and Hospital-Based Specialties

Member, Board of Trustees of the American College of Chest Physicians, President Elect 2013–2014, President 2014–present

Ki Wan Kim, MD, received the Ethicon Fellowship for Advanced Minimally Invasive Thoracic Surgery.

Division of Trauma/Acute Care Surgery/ Surgical Critical Care

Division Surgeons



James Boffa, MD
Division Chief

Andrew Agos, MD

Carlos Ortega, MD

Philip
Theodoropoulos, MD

Clinical Program Highlights

The Division was established in February 2012 to care for critically ill surgical patients promptly to improve outcomes. NorthShore has four Trauma Centers. The Level 1 Trauma Center at Evanston Hospital has a trauma surgeon immediately available at all times for patients arriving in the Emergency Department. Evanston Hospital also has an operating room and staff available within minutes of arrival. The Level 1 designation also ensures that crucial specialists are available within one hour.

NorthShore Glenbrook, Skokie and Highland Park Hospitals are designated as Level 2 Trauma Centers, meaning a trauma surgeon is available within 30 minutes. Evanston Hospital serves as a resource for these Level 2 Trauma Centers. If patients require a higher level of care, the Evanston trauma team helps coordinate a safe and prompt transfer to its Level 1 Trauma Center.

All Division physicians are board-certified with Andrew Agos, MD, and Carlos Ortega, MD, having additional board certification in surgical critical care. The Division's Trauma Nurse Coordinator is June Smith, RN.

Clinical Innovations and Research Highlights

The Division works closely with colleagues in the Emergency Department, the Intensive Care Unit (ICU) and the Operating Room to provide expert surgical care. Trauma surgeons care for surgical emergencies such as hemorrhage, airway issues

and central venous access that occur in the hospital. The Division also has the ability to care for pediatric patients with traumatic injuries and provide surgical care for children 5 years of age and older. We continue to be involved in injury prevention and education in our communities.

Collaboration with biomedical engineering students from Northwestern University in conjunction with the Grainger Center for Simulation and Innovation (GCSI) at Evanston Hospital continues. We are developing innovative products to be used in trauma and acute care surgery. The aim is to develop working prototypes that can be submitted for Internal Review Board approval and tested at our NorthShore hospitals. The trauma team has been trained on a new technique for traumatic non-compressible hemorrhagic shock called REBOA (Resuscitative Endovascular Balloon Occlusion of the Aorta).

Honors, Awards and Academic Recognition

Dr. Agos contributed to book chapters in the *Atlas of Clinical Emergency Medicine* on cervical and lumbar spine fractures. He was recognized by Gift of Hope as a Lifesaving Partner, and he has been named a member of the Critical Care Advisory Committee for Gift of Hope.

Dr. Ortega has participated as an instructor in this year's Advanced Trauma Life Support course hosted at the GCSI, and attended the annual Trauma/Acute Care Surgery meeting in Las Vegas.



Dr. James Boffa leads the Division of Trauma/Acute Care Surgery/Surgical Critical Care, which includes trauma centers at all four NorthShore Hospitals.

Philip Theodoropoulos, MD, has shifted his clinical practice to Skokie Hospital where he is an integral part of teaching residents and students from Rush Medical College. He is currently pursuing training in robotic surgery for the general surgeon.

Our Trauma Nurse Coordinators are currently conducting a study to assess management of pain in trauma patients.

Division of Urology

Division Surgeons



Michael McGuire, MD
Division Chief

Jeffrey Albaugh, PhD,
APN, CUCNS

Michael Blum, MD

Charles Brendler, MD

Peter Colegrove, MD

Brian Helfand, MD, PhD

Thomas Keeler, MD

Jaclyn Milose, MD

Kristian Novakovic, MD

Sangtae Park, MD, MPH

Sandi Tenfelde, PhD, APN

For more information,
visit [northshore.org/
urology](http://northshore.org/urology)

Clinical Program Highlights

New Faculty

In the last year, we have added two new faculty members: Jaclyn Milose, MD, and Sandi Tenfelde, PhD, APN. Dr. Milose is a urologist who provides comprehensive urological care and specializes in urogenital reconstructive surgery. She sees both male and female patients at Glenbrook, Evanston and Highland Park Hospitals. Dr. Tenfelde is a sexual health expert who sees primarily female patients with sexual health issues at the John and Carol Walter Center for Urological Health (Walter Center) at the Glenbrook Hospital campus.

Division Growth

The Division of Urology continues to grow in all areas of urological care. The core of urology at NorthShore is the Walter Center. Additionally, patients are seen in our Vernon Hills, Gurnee, Highland Park and Evanston offices. Surgical procedures are done at all four NorthShore Hospitals. Wherever they practice, our urological healthcare providers are tasked with the guiding principle of the Walter Center, which is to “treat the patient, not just the disease.”

Clinical Innovations and Research Highlights

The Division of Urology and the Walter Center are intimately associated with the Program for Personalized Cancer Care at NorthShore. Our urologists, in combination with world-class scientists, are working to determine the genetic basis of urologic diseases such as prostate cancer. The Division has opened the first personalized, genomic-based prostate health clinic in the country. In this clinic, we use a proprietary genomic DNA testing to assess prostate cancer risk and develop individualized screening, diagnostic and treatment strategies.

Teaching and Education Highlights

The Division faculty remain actively involved in helping educate the University of Chicago Pritzker School of Medicine urology residents. All members are actively involved in formal didactic programs, as well as teaching in the clinic, hospital, and Operating Room. Sangtae Park, MD, has mentored many summer medical students on research projects, the results of which have been presented at national meetings. The University of Chicago Pritzker School of Medicine residents complete multiple research projects with NorthShore faculty. For example, at least six different residents have submitted abstracts to the 2016 national urology meeting.

Faculty and Accomplishments

All our urologists diagnose and treat all aspects of urological diseases. However, many of our faculty members have special interests.

Urologists

Michael McGuire, MD, (Division Chief) is a fellowship-trained urologic oncologist whose practice emphasizes bladder cancer (especially continent urinary diversions) and advanced prostate cancer detection by MRI-ultrasound fusion biopsy.

Michael Blum, MD, a NorthShore native, has provided exceptional urologic care for 30 years including open prostate cancer surgery, as well as treatment of kidney stones and benign prostatic hyperplasia.

Peter Colegrove, MD, has a special interest in erectile dysfunction and urinary incontinence.

Brian Helfand MD, PhD, a true physician-scientist, specializes in cutting-edge, genomic-based prostate cancer care. Additionally he performs the most robotic radical prostatectomies in our system.

Thomas Keeler, MD, another almost 30-year member of the Division, supplies supreme quality care in all aspects of urology.

Jaclyn Milose, MD, the newest member of the Division, is specialty-trained in urological reconstruction and advanced surgical treatment of erectile dysfunction and incontinence. She is also available to treat those women with other urological diseases who wish to see a female healthcare provider.

Kristian Novakovic, MD, another fellowship-trained urological oncologist, specializes in organ-preserving kidney cancer surgery and leads the prostate cancer active surveillance study.

Sangtae Park MD, MPH, leads our programs in minimally invasive surgery for kidney and prostate surgery. Additionally, he is the director of the metabolic stone clinic for the evaluation and management of recurrent and complicated urological stone disease.

Clinical PhDs

Jeffrey Albaugh, PhD, APN, CUCNS, a renowned worldwide authority on sexual health, treats both men and women and has been an invited lecturer both nationally and internationally on numerous occasions.

Sandi Tenfelde PhD, APN, the other new member of our faculty, focuses her practice on women with sexual health issues who, understandably, often prefer to discuss these problems with a female healthcare provider.

Division of Vascular Surgery

Division Surgeons



NavYash Gupta, MD
Division Chief

Joseph Caprini, MD

Benjamin Lind, MD

Omar Morcos, MD

Nancy Schindler, MD,
MHPE

Clinical Program Highlights

New Faculty

In 2015, the Division welcomed Alfonso Tafur, MD, a specialist in vascular medicine. Dr. Tafur treats diseases of the vascular system that do not require surgical intervention.

Division Growth

The Division is anchored in its new clinic space at the Skokie Ambulatory Care Center as a component of the multidisciplinary NorthShore Cardiovascular Institute. Our vascular surgeons provide comprehensive vascular surgery services at all four NorthShore Hospitals as well as clinics in Cook and Lake counties.

Clinical Innovations and Research Highlights

The Division recently acquired a state-of-the-art laser for treatment of spider veins which can be used in conjunction with, or in place of, traditional injection therapy.

The Division, along with our Center for Biomedical Research Informatics (CBRI), designed and implemented a comprehensive Epic toolkit that improves clinical workflow, improves patient care by reducing omissions and errors in documentation, and allows information to be stored discretely for future quality and research projects.

The Division participates in a variety of research projects ranging from retrospective reviews of our patient experience to clinical trials sponsored by pharmaceutical companies. We also collaborate with the Department of Radiology on studies aimed at improving magnetic resonance imaging.

We continue to participate in the national Vascular Quality Initiative, allowing our surgeons to track outcomes and focus on quality improvement.

Teaching and Educational Highlights

NavYash Gupta, MD, Omar Morcos, MD, Benjamin Lind, MD, and Nancy Schindler, MD, MHPE, participated in the Open Surgical Skills Course at Evanston Hospital.

Dr. Lind and Tina Desai, MD, mentored a resident research project that culminated in a presentation at the Strandness Symposium and Vascular Care.

Dr. Lind, along with Hector Ferral, MD, presented results of their research, "Complications of arterial and venous catheter-directed thrombolysis," at the annual meeting of the Society for Interventional Radiology.

Honors, Awards and Academic Recognition

Drs. Gupta, Lind and Morcos received Excellence in Teaching Awards from the University of Chicago Pritzker School of Medicine.

Dr. Lind received a NorthShore Excellence in Nurse-Physician Relationship Award.

Dr. Gupta was invited to contribute several video-recorded courses for the Vascular Surgery Comprehensive Review offered by the American Physician Institute for Advanced Professional Studies.

Other Accomplishments

Dr. Gupta was interviewed on Fox News Chicago's *Conversations in Health* on topics related to the diagnosis and treatment of vascular disease.

Dr. Gupta published the results of an international trial of a dry-powder fibrin sealant. He served as the Principal Investigator for the vascular surgery portion of the trial. The results were presented at the annual meeting of the Society of Academic and Research Surgery.

Joseph Caprini, MD, was invited to speak at numerous national and international venues on topics related to venous thromboembolism and anticoagulation.

Dr. Lind is completing the NorthShore University HealthSystem Fellowship in Quality and Safety, focusing on reducing postoperative deep vein thrombosis (DVT).

Dr. Morcos was named to the Perioperative Planning Committee and is spearheading the redesign of our pre- and postoperative care algorithms.

Dr. Schindler was promoted to Clinical Professor of Surgery at the University of Chicago Pritzker School of Medicine and to Vice President of Physician Development for NorthShore Medical Group.



Dr. Omar Morcos has expertise in abdominal aortic and thoracic aneurismal disease, peripheral vascular disease and carotid artery disease, and was one of three Division surgeons who received an Excellence in Teaching Award from the University of Chicago Pritzker School of Medicine.

For more information,
visit [northshore.org/
vascularsurgery](http://northshore.org/vascularsurgery)

2015 Report on Philanthropy

Continued academic growth will require additional growth in grant and philanthropic funding to assure robust collaborations and translational research.

Department of Surgery Strategic Retreat, November, 2015

Last year, the faculty of NorthShore Department of Surgery performed close to 22,000 surgical procedures. In addition, they saw more than 161,000 patients in clinics and conducted 157 clinical trials. These achievements position this Department among the leading surgery providers in our region, offering our patients a wide array of innovative and effective patient care services. In addition to the high proportion of favorable outcomes this surgical volume delivers, it also testifies to our growing diversity of expertise available at NorthShore.

But while quantity has a quality of its own, our continued progress as a leading academic center for surgical innovation and personalized patient care continues to move upwards because of the philanthropic vision of our corporate and Foundation partners



2015 annual dinner celebrating the Rob Brooks Fund for Personalized Prostate Cancer Care. Pictured (from left): Justin Brueck, MHA, MA, Director, Laboratory and Research Administration; Charles Brendler, MD, Vice Chairman of Surgery for Research and Development and Executive Research Director, Program for Personalized Cancer Care; Brian Helfand, MD, PhD, Director, Prostate Cancer Program; and Richard Melman, Founder of Lettuce Entertain You Restaurants and longtime supporter of NorthShore prostate cancer research. Melman co-established an endowed chair for Dr. Brendler in 2008.

and the generosity of our grateful patients. These sponsors and donors have chosen to invest in our transformative initiatives and collaborative projects that have brought us national recognition and established our faculty as opinion leaders.

We continue to experience the dramatic multiplier effect of philanthropy in many areas:

- Our **Program for Personalized Cancer Care**, generously seeded by the Walter and Rappeport families, continues to attract funding from other donors who wish to advance our study of cancer genomics and improve our ability to detect and treat earlier at-risk patients and educate their families about future susceptibilities.
- At the **Grainger Center for Simulation and Innovation**, our interdisciplinary team has increased the number of workshops offered in minimally invasive surgery, grown corporate sponsorship and exhibitions, developed new procedures to train Operating Room teams and simulate surgical crises, and expanded NorthShore's presence at national conferences, while increasing their production of leading presentations, articles and book chapters in the academic realm.
- Thanks to the support of the North Suburban Healthcare Foundation, our **High-Risk Breast Cancer Program** has been launched to much acclaim and has attracted additional support for genomics research and comparative outcomes research. Additional research on breast cancer risk stratification, personalized surgical planning, and the racial disparities in breast cancer screening and treatment have all been underwritten by generous donors, some of whom are themselves breast cancer survivors.

Our patients can benefit significantly from new insights into genomics, cancer biology and medical informatics funded thanks to philanthropy. All these and other philanthropic gifts have enabled our surgeons and scientists to improve the evidentiary basis for new diagnostic tests, personalized surgical strategies and planning tools for the timing, targeting and delivery of safer, surer and more compassionate care. This same evidence will help validate expanded insurance coverage and provide the access and affordability for these new patient-centered services so many need.

We thank all of you whose generosity will help others.

2015 Peer-Reviewed Publications and Book Chapters

Division of Cardiac Surgery

Feldman T, Pearson P, Smart S. Percutaneous closure of post TAVR LV apical pseudoaneurysm. *Catheter Cardiovasc Interv.* 2015 Aug 13. doi: 10.1002/ccd.26157. [Epub ahead of print]

Guerrero M, Pursnani A, Salinger M, Levisay J, **Pearson PJ, Feldman T.** Techniques for percutaneous left ventricular access. *Cardiac Interventions Today.* 2015 July-Aug; 48-52.

Division of General Surgery

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continued

2015 Peer-Reviewed Publications and Book Chapters

Division of Ophthalmology

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Division of Otolaryngology

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Division of Plastic Surgery

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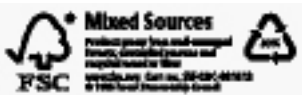
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