

# Department of Internal Medicine

2017 ANNUAL REPORT



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## MISSION

The mission of the Department of Internal Medicine at Rush is to improve the health of the individuals and diverse communities we serve through the integration of outstanding patient care, education, research and community partnerships.

## VISION

The Department of Internal Medicine will be the leading department of medicine in the region and nationally recognized for transforming health care.

## VALUES

The Department of Internal Medicine embraces the Rush **I CARE** values.

**I**NNOVATION • **C**OLLABORATION • **A**CCOUNTABILITY • **R**ESPECT • **E**XCELLENCE



# MESSAGE FROM THE CHAIRPERSON

## Pursuing Our Vision for Medicine at Rush



In recent years, the Department of Internal Medicine has been transformed into a major driver of clinical, research and educational growth at Rush. Thanks to the recruitment of approximately 95 faculty members and a total of more than 500 faculty, the department will continue to be an essential health care leader in the Midwest and nationally.

At Rush, we recognize that the most exciting innovations in academic medicine occur through

collaborations. To that end, the Department of Internal Medicine has forged alliances with local, national and international organizations, providing a foundation for subspecialty care, groundbreaking research and the education of future clinicians. The department also

has close ties with other institutions in the Illinois Medical District, including a unique academic affiliation with John H. Stroger, Jr. Hospital of Cook County. Our joint residency program — the only one of its kind in Chicago — also shares faculty, giving trainees an opportunity to learn from a wide range of experts.

In the Department of Internal Medicine, we also have created a highly collaborative environment and infrastructure for basic science, translational and clinical research. We strongly believe that such research is the foundation for transformative discoveries and innovations that will be the key to advancing patient care. Through our leading-edge research programs, we are committed to helping patients by developing new therapies and medical devices, and by expanding scientific and medical knowledge.

**Jochen Reiser, MD, PhD**

**The Ralph C. Brown, MD, Professor of Internal Medicine  
Chairperson of Internal Medicine**



**Sumant Chugh, MD, Vice Chairperson for Strategy and Development** Chugh provides leadership with a focus on performance excellence for strategic clinical opportunities, clinical productivity, resource utilization, financial results and clinical access.

Chugh develops and maintains a resolution system that responds to issues raised in a timely and effective manner.



**Scott Hasler, MD Vice Chairperson for Education** Hasler provides oversight for the development, direction and coordination of all medical education activities. He administers the CME program, ensures compliance with the Accreditation Council for Graduate Medical

Education and actively participates with various staff committees to recommend policies and to provide leadership in all phases of departmental medical education.



**Suja Mathew, MD, Chairperson, Department of Medicine, Cook County Health and Hospitals System** Mathew provides oversight and direction for leadership with Cook County Health and Hospitals System. She serves as the liaison from the Department of Medicine at CCHHS to raise

concerns and opportunities across both organizations. She also serves as a liaison to create research and education synergies across both organizations and promote best practices across both organizations' departments of medicine.



**Monnie Wasse, MD, MPH, Vice Chairperson for Quality and Patient Safety** Wasse provides medical leadership on patient safety and quality improvement issues for the department. She is responsible for departmental oversight of safety, quality and the patient experience and the patient safety officers

and medical directors. She collaborates with division leadership on creating a multidisciplinary approach for achieving the quality and safety goals of the department and Rush University Medical Center in both inpatient and outpatient settings. Wasse reviews and develops annual and long-term plans around safety and quality and serves as chairperson of the Departmental Quality Improvement Committee.



**Vineet Gupta, PhD, Vice Chairperson for Research and Innovation** Gupta provides support to the department to create a productive research environment. He heads the Office of Research in the Department that assists all of the Department faculty, staff, fellows and students in their research

activities, including grant writing, grant submissions, post-award activities, clinical trial planning and its management. This office partners with all of our Divisions in these activities. Gupta also facilitates planning, budgeting, benchmarking, program evaluation, accountability and development of policy decisions for the department. He provides direction and administrative management for all aspects of the department's research operation. Gupta also mentors and develops junior and mid-career researchers and faculty.



## DEPARTMENT AT A GLANCE

# 4

## SPECIALTIES

RANKED **BEST IN THE COUNTRY** BY  
*U.S. News & World Report*

**\$2.1 million** income  
from clinical trials and industry

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**84** Grant Submissions

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**\$9.8 MILLION**  
in NIH funding in FY17

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**>2X** increase in external funding  
(including gifts and monetary contributions) in  
FY17, representing **\$24.8 million**  
(**24%** of all of Rush funding)

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**\$8.8 MILLION**  
in research expenditures by  
department faculty in FY17

**50+**  
active clinical trials  
(does not include Rush University Cancer Center)

# PATIENT CARE & QUALITY



Chief resident conducting rounds with the internal medicine team.

Rush has been named among the top hospitals in the country for quality, safety and efficiency four times by the Leapfrog Group, a national organization that promotes health care safety and quality improvement. The Department of Internal Medicine and the Internal Medicine Residency support institution-wide quality efforts and spearhead many quality improvement and safety projects that complement the institution's broader initiatives.

## RESIDENT-DRIVEN QUALITY IMPROVEMENT

Internal medicine residents play a vital role in the department's safety and quality efforts and in the delivery of safe, effective and high-quality patient care. The residency program now offers a two-year track specializing in patient safety and quality improvement, where participating residents work closely with departmental safety and quality leaders to identify safety problems and develop QI initiatives using a multidisciplinary team approach. The track also offers an opportunity for residents to work alongside hospital leadership through the Office of the Chief Medical Officer to gain a broader understanding of ongoing efforts to improve safety and quality on an institutional and national level.

Under the mentorship of **Manya Gupta, MD**, director of the track, and other core faculty, several innovative resident-led projects are underway, including projects on decreasing the usage of unnecessary telemetry monitoring, optimizing and standardizing the use of supplemental oxygen and decreasing the time to de-escalation of broad-spectrum antibiotic use.

## RESIDENT PARTICIPATION IN PATIENT SAFETY INITIATIVES

Internal medicine residents participate in a number of activities related to patient safety, such as the House Staff Quality Improvement Committee, which involves a multidisciplinary monthly meeting with residents and faculty from different residency programs, as well as representation from the Office of Graduate Medical Education and the Office of the Chief Medical Officer.

Additionally, residents participate in monthly case-based patient safety conferences that highlight specific safety issues, such as near misses or adverse events, and actively engage residents in the processes of evaluating medical errors and conducting root cause analyses. The chief residents also regularly participate in the department's bimonthly quality committee, overseen by **Monnie Wasse, MD, MPH**, the department's chief quality officer, and contribute to adverse event adjudication and the development of electronic health record modifications and processes of care to improve patient safety.

By emphasizing a collaborative and transparent approach to patient safety and quality improvement, the Department of Internal Medicine and the Internal Medicine Residency are solidifying a culture in which issues of patient safety and quality improvement can be discussed openly. This ultimately helps support a delivery model that provides safe, efficient, high-quality, high-value and patient-centered care.



Biweekly hospital quality meeting with physician and nursing leadership.

# EDUCATION



**Manya Gupta, MD,** leads a weekly patient safety/QI meeting with faculty and residents.

## UNDERGRADUATE MEDICAL EDUCATION

Each year more than 200 medical students spend critical months of their training time in our department learning from our faculty. All third-year medical students rotate through internal medicine as they begin to grow their understanding of clinical medicine. This is supervised by our outstanding student educators, **Viju John, MD**, director of the internal medicine clerkship, and **Rupel Dedhia, MD**, director of the primary care clerkship. Most students will return during their final year of medical school to further practice their skills for internship. This is supervised by **Michelle Sweet, MD**, director of the subinternship.

## GRADUATE MEDICAL EDUCATION

Since 1991 the Internal Medicine Residency at Rush has had only three Graduate Medical Education Program directors. The newest of those, **Scott Hasler, MD**, assumed leadership of the program this year from **Richard Abrams, MD**. This leadership stability has proven an outstanding base on which to pursue the ultimate vision of our program: *to be a nationally known internal medicine residency program of choice that demonstrates clinical and academic excellence in its trainees while providing innovative educational programs that prepare graduates for future leadership roles in clinical medicine, education and research.* To attract the best students to the residency, department leaders have developed an innovative curriculum. In addition to outstanding clinical training in the medical center, our residents have the opportunity to work in underserved areas of the city and the world through our specialized training track in global and community health. This program, under the supervision of **Stephanie Crane, MD**, offers training experiences in Haiti and the Dominican Republic. The Internal Medicine Residency program consisted of more than 100 residents this year and a large

part of their intensive training was in patient safety and quality improvement. This residency track is led by **Manya Gupta, MD**, and focuses trainees on solving the systems issues of medicine through designing and implementing their own quality improvement projects.

Preparing graduates for future careers in academic medicine involves developing the clinical skills of residents, but also their skills in teaching and research. In the department trainees work on all three skills as they move on to their practice or their fellowships. The department also trains 90 fellows each year. These fellows are learning cutting-edge knowledge and skills in every subspecialty of medicine as well as taking the first steps to train the next generation of students and residents.



Global health trips to Haiti offer opportunities for clinical assessment.

## AWARDS DURING ACADEMIC YEAR 2016-2017



**Elizabeth Baker, MD, MHPE**

Rush University Excellence in Mentoring:  
**Elizabeth Baker, MD, MHPE**

Phoenix Award (given to the best clinical teacher): **Elizabeth Van Opstal, MD**

Induction into the Mark Lepper Society:  
**Scott Hasler, MD** and **Viju John, MD**

## PROMOTIONS DURING ACADEMIC YEAR 2016-2017

Senior Associate Dean for Rush Medical College, **Elizabeth Baker, MD, MHPE**

Vice Chairperson for Education, **Scott Hasler, MD**



# RESEARCH



Through our leading-edge research programs, we are committed to helping patients by developing new therapies and medical devices, as well as by expanding scientific and medical knowledge.

At Rush, we find answers to important science and patient care questions through cross-disciplinary collaborations within and across divisions in the Department of Internal Medicine. From basic science and translational research to clinical and epidemiological research, our focus is on developing high-quality research projects that, ultimately, will provide more options for patients. The department has significantly increased its grant funding as well as the number of submissions in dramatic ways. Our top five funded investigators received more than \$12 million in externally funded awards.

## STRONG RESEARCH LEADERSHIP

**Vineet Gupta, PhD**, vice chairperson for research and innovation, oversees the department's research program. Gupta's team focuses on ensuring investigators have the tools available to be successful in their submission of scientific grant applications for external support. The department also works to proactively connect early career faculty investigators with mentors in the department and elsewhere at Rush and in the city of Chicago.

## RESEARCH GRAND ROUNDS AND COLLABORATIONS

The department hosts a monthly Research Grand Rounds to share knowledge among students, residents, fellows and faculty and help foster collaborations between departments. It showcases various basic and translational research being conducted on the Rush campus and provides an excellent opportunity to get more involved. Additionally, department leaders regularly invite faculty from different disciplines to present their research projects so they may identify potential collaborators.

## EXECUTIVE COMMITTEE ON RESEARCH AND MENTORING

In 2017, ECOR and the mentoring program provided seed and bridge funding to several principal investigators in the department. The goal is to help researchers complete the work they need to receive NIH funding or to publish in a leading journal. Those enrolled in the program enter into a formal mentoring relationship with a senior investigator to help them develop their research ideas. Recipients of the ECOR grant award include: Alison Finnegan, PhD; Niranjan Jeganathan, MD; Joel Block, MD; Andrew Zloza, MD, PhD; Neeraj Jolly, MD; Susan Buehler, PhD; Helen Burgess, PhD; Steven Feinstein, MD; Vineet Gupta, PhD; Anne-Marie Malfait, MD, PhD; Elizabeth McAninch, MD; Aimee Hodowanec, MD; Kyle Popovich, MD, MS; Mariam Aziz, MD; Mary Jo Fidler, MD; Abde Abukhdeir, PhD; Sharon Jedel, PsyD; Joshua Melson, MD, MPH; Reem Karmali, MD, MS; Amanda Marzo, PhD; and Annabelle Volgman, MD.

## RESEARCH INFORMATICS PLATFORM

The Department of Internal Medicine is leveraging the institution's IT resources and data governance infrastructure to create a research informatics platform under the leadership of **Bala Hota, MD**, a nationally recognized IT expert and member of the Division of Infectious Diseases. He is developing a platform that will allow investigators to query the vast amounts of clinical data collected in the EHR. Additionally, Hota has created bioinformatics and biostatistics core services to support investigators in their data needs across all departments at Rush.



We have created a highly collaborative environment and infrastructure for basic science and clinical research. Our research and educational programs are geared to identify and train the future innovators, researchers, educators and leaders of medicine.

# Cardiology

32 Faculty Members / 24 Fellows / 6 Advanced Practice Providers

Meet the doctors: [rush.edu/services/cardiology-and-cardiac-surgery/doctors](http://rush.edu/services/cardiology-and-cardiac-surgery/doctors)

Research page: [rushu.rush.edu/cardiology-research](http://rushu.rush.edu/cardiology-research)



Kim A. Williams, Sr., MD  
Division Chief

“As the population ages, more people are living longer with heart disease and comorbidities such as cancer, dementia and kidney disease. To better care for the complex needs of these patients, cardiologists at Rush are partnering with their colleagues across disciplines to develop specialized clinics that combine multiple areas of expertise.” – **Kim A. Williams, Sr., MD, MACC, FAHA, MASNC, FESC**

**CLINICAL** The division of cardiology is comprised of four sections: noninvasive cardiology, interventional cardiology, cardiac electrophysiology and advanced heart failure and transplantation. The division is also home to many multidisciplinary and novel clinical programs such as the Rush Heart Center for Women and the Rush Center for Adult Structural Heart Disease, as well as emerging programs that have gained recent national attention such as cardio-nutrition, cardio-cognitive clinic, and cardio-oncology. In 2017 the division implemented new clinical services, including a cardiac rehab program at Rush Oak Park Hospital, a coronary CT program for measuring coronary calcium and a dedicated atrial fibrillation clinic.

**RESEARCH** The division focuses its research in three areas: early detection, prevention and innovation. Screening programs in the community, cholesterol lowering diet and medication trials and new device research that fit our patient population are ongoing. Cardiology researchers work with international companies to offer a wide range of clinical trials that bring cutting edge technologies to a variety of cardiac conditions.

**MEDICAL EDUCATION** The division's highly competitive fellowship program, led by joint faculty from Rush and Stroger Hospital, offers extensive clinical opportunities to learn from experts in imaging, heart failure and other areas. Fellows see patients in Rush's modern, 28-bed coronary intensive care unit, one of the largest in Chicago. Similarly, fellows benefit from Rush's state-of-the-art interventional platform, which brings together diagnostic testing, surgical and interventional services, and recovery for closer collaboration between clinicians.



Thanks to a generous philanthropic gift, Cardiology was able to purchase a state-of-the-art Simulation Lab that allows clinicians to practice interventions and procedures in a simulated teaching environment. In addition to incorporating this training into the fellowship curriculum, cardiologists at Rush host physician training courses on topics including coronary, peripheral, congenital and structural catheter-based interventions as well as neuroendovascular and electrophysiology procedures.

2017 brought growth and depth to the Division of Cardiology in the areas of clinical programs, education and research as well as new community outreach programs. In 2017, Rush ranked 43rd in the nation for cardiology and heart surgery according to *U.S. News & World Report*.

The division has several esteemed faculty who have reached significant accomplishments.

Cardiology's clinical researchers, under the direction of **Gary Schaer, MD**, continue to offer our patients access to the most advanced therapies such as stem cell therapy. The DREAM-HF trial is the largest stem cell trial for heart failure in the world, using adult donor stem cells, and subjects are currently being enrolled at Rush. Results of the ixCELL-DCM study were published in the journal *Lancet*, showing bone marrow cells could be harvested, processed, expanded and returned to the body for transendocardial injection safely.

**Annabelle Santos Volgman, MD**, medical director and co-founder of the Rush Heart Center for Women, was featured in *O, The Oprah Magazine* and *Elle Décor* highlighting the center's holistic treatment approach. One year out of his fellowship, **Parikshit Sharma, MD**, has already added 16 publications to his extensive list of research accomplishments. **Clifford Kavinsky, MD, PhD**, was named to the 2017 class of master fellows of the Society of Cardiovascular Angiography and Interventions.



Rush Cardiology now offers cardiac rehab at Rush Oak Park Hospital for patients who qualify after heart attacks, bypass surgery, valve replacement and more.



# Digestive Diseases & Nutrition

16 Faculty Members / 9 Fellows / 1 4<sup>th</sup> Year Advanced Therapeutic Fellow

Meet the doctors: [rush.edu/services/gastroenterology/doctors](http://rush.edu/services/gastroenterology/doctors)

Research page: [rushu.rush.edu/digestive-diseases-and-nutrition-research](http://rushu.rush.edu/digestive-diseases-and-nutrition-research)



Ali Keshavarzian, MD  
Division Chief

“Digestive health encompasses a wide range of complex problems beyond traditional GI diseases including cancers, obesity, microbial dysbiosis, and disrupted brain-gut axis and associated consequences like Parkinson’s disease and depression. Gastroenterologists at Rush are working with other specialties to give our patients the latest therapies to ensure optimal gut health to prevent and treat these GI and systemic diseases.” – **Ali Keshavarzian, MD, FRCP, FACP, AGAF, MACG**

**CLINICAL** Gastroenterologists at Rush diagnose and treat the full range of gastrointestinal conditions, including Crohn’s disease, ulcerative colitis, celiac disease and many others. Our interventional gastroenterologists offer the full range of endoscopic procedures for patients with gastrointestinal cancers, Barrett’s esophagus, complex polyps and more. In addition to nationally recognized physicians, the division includes dietitians and psychologists who help people manage GI problems.

**RESEARCH** Our research focus is to investigate how factors associated with lifestyle (diet, alcohol, behavior, circadian rhythms and sleep) promote chronic diseases via the GI tract, liver and brain-gut axis. Our research program has extensive grant funding from the National Institutes of Health, Department of Defense, the American Cancer Society, NASA, the Michael J. Fox Foundation, Nestle and other industry sponsors.

**MEDICAL EDUCATION** The gastroenterology and hepatology fellowship is a three-year ACGME-accredited program providing training in digestive diseases and endoscopic procedures. Upon completion, graduates are board-eligible for certification in gastroenterology, with a fourth year of training in advanced endoscopy also available. Home to one of the Midwest’s most active liver transplant centers, Rush treats patients with a wide variety of gastrointestinal and hepatologic illnesses, exposing fellows to a broad range of pathologies.



Led by director **Ali Keshavarzian, MD**, researchers in the Division of Digestive Diseases and Nutrition use translational research approaches utilizing a variety of models, state-of-the-art equipment and techniques to investigate the role of the GI tract in diseases.

Our goal as a division is to continue growth and innovation in the areas of clinical programs, education and research.

The Division of Digestive Diseases and Nutrition has several esteemed faculty who have had significant accomplishments.

Our division director, **Ali Keshavarzian, MD**, is a dedicated clinician-researcher with more than 550 published articles, book chapters and abstracts, and an h-index of 69.

**Faraz Bishehsari, MD, PhD**, chaired and organized the first symposium with a special focus on circadian rhythms and pathologies related to the gastrointestinal system in May 2016.

The division’s research team has had more than 100 active studies during the past year and submitted 17 grants in 2016. The team uses translational research approaches including in vitro, in vivo and animal models and clinical research studies to investigate mechanisms of and treatments for GI and chronic systemic diseases where gut-derived inflammation plays a mechanistic role.



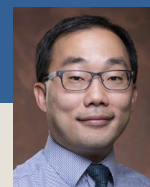
The Rush Endoscopy Center — which moved to a brand new unit in 2016 — includes three state-of-the-art procedure rooms dedicated to interventional GI procedures, a prep and recovery unit, and consultation rooms for patient privacy.

# Endocrinology & Metabolism

11 Faculty Members / 5 Advanced Practice Nurses / 6 Fellows

Meet the doctors: [rush.edu/services/endocrinology-and-metabolism/doctors](http://rush.edu/services/endocrinology-and-metabolism/doctors)

Research page: [rushu.rush.edu/endocrinology-and-metabolism-research](http://rushu.rush.edu/endocrinology-and-metabolism-research)



Brian W. Kim, MD  
Division Chief

“Endocrinology touches all areas of human life, with hormonal diseases affecting almost every individual at some point in their journey. The Division of Endocrinology and Metabolism team members are working to provide outstanding care for patients while developing new approaches to preventing and treating diabetes, thyroid problems, bone disease and obesity in collaboration with colleagues from across Rush.” – **Brian W. Kim, MD**

**CLINICAL** In addition to the inpatient endocrinology consult service, key clinical programs in endocrinology include a high volume, APN-led inpatient diabetes management service that provides diabetes care for virtually all surgical patients with diabetes as well as patients recovering in the Johnston R. Bowman Center; a fracture liaison service that is identifying and improving the care of patients suffering from bone disease in conjunction with colleagues from orthopedics and rheumatology; and a thyroid cancer program that includes a multidisciplinary tumor board bringing together physicians from surgery, oncology, pathology and other disciplines.



Antonio C. Bianco, MD, PhD

**RESEARCH** Studies conducted in the Bianco Lab ([deiodinase.org](http://deiodinase.org)), led by **Antonio C. Bianco, MD, PhD**, are challenging paradigms of thyroid hormone therapy and attracting international attention and acclaim. Our team members continue to work with industry to gain better understanding of how current therapeutics can be used to treat diseases from diabetes to

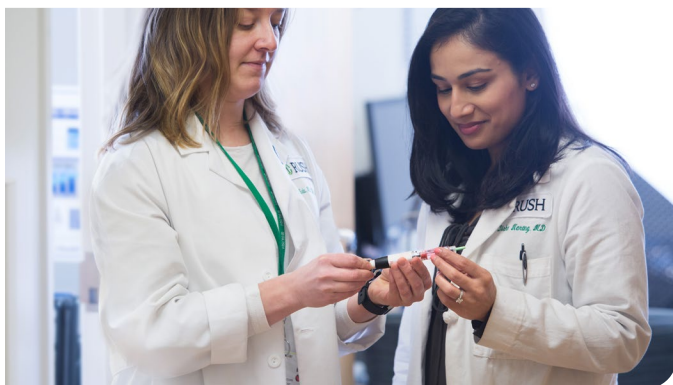
osteoporosis to thyroid cancer. Our team is also partnering with the Department of Preventative Medicine and Fitness Formula Clubs to study how patients may benefit from a gym based medical nutrition counseling and weight loss program.



Endocrinology and metabolism faculty at Rush are working together with colleagues from across the institution to develop a new obesity program.

**MEDICAL EDUCATION** Together with colleagues from Stroger Hospital, endocrinologists at Rush participate in a successful fellowship training program that takes advantage of the breadth of disease seen across the combined institutions. Our team also provides a lecture series for residents and hosts residents and students from around the world.

2017 brought further growth to the Division of Endocrinology, with **Disha Narang, MD**, and **Anila Bindal, MD**, joining our team to become leaders in weight management and obesity here at Rush. These young faculty are partnering with **Naomi Parrella, MD**, and the team led by **Alfonso Torquati, MD, MSCI, FACS**, to make Rush a leader in this important area. **Sanford Baim, MD**, leading our bone health effort, has continued to improve the quality of bone densitometry across Rush, and the fracture liaison service continues to grow in volume with effectiveness data coming soon. Finally, **Rasa Kazlauskaitė, MD, MSc, FACE**, has joined our division and will be leading our efforts stay on the cutting edge of diabetes care as the director of diabetes technology at Rush.



Amy Salo, MS, RDN, LDN, CDE (left), and Disha Narang, MD, collaborate to deliver patient care.

# General Internal Medicine

54 Faculty Members / 94 Residents / 6 Advanced Practice Providers

Meet the doctors: [rush.edu/services/general-internal-medicine/doctors](http://rush.edu/services/general-internal-medicine/doctors)

Research page: [rushu.rush.edu/general-internal-medicine-research](http://rushu.rush.edu/general-internal-medicine-research)



Daniel P. Dunham, MD, MPH  
Division Chief

“The Division of General Internal Medicine helps physicians cultivate versatility and resilience that will be vital as we face the challenges brought by the increasing emphasis on quality and efficiency in clinical care and as we change the way we educate our trainees in the future.”

– Daniel P. Dunham, MD, MPH

**CLINICAL** General internal medicine at Rush has grown to 54 faculty members and is leading the growth in practice expansion. In 2014 there were six Rush University Medical Group GIM practices with a clinical full-time equivalent count of approximately 21. To date, we currently have providers in 11 RUMG practices, and our cFTE count is at 36.82.

**RESEARCH** The division had several publications this year in journals such as *The Health Care Manager* and *Medical Teacher*. Faculty have been traveling around the world and across the United States to present on topics ranging from clinical competency committees to diagnostic reasoning in medical education to assessment in education.

**MEDICAL EDUCATION** We offer robust and successful education programs for medical students, residents, fellows and attending physicians. Our internal medicine faculty members hold significant leadership positions within Rush Medical College. We provide core educational experiences to our students during the eight-week internal medicine clerkship, the four-week ambulatory clerkship and the four-week subinternship in internal medicine. Ninety-two percent of students rate the IM clerkship as good or excellent, which outperforms every other M3 core clerkship.



Maria Reyes, MD, from Rush Primary Care-Lakeview makes a point of connecting with her patients

In the past three years, primary care clinic visits have increased by more than 35 percent, and productivity as measured by work relative value units has grown by approximately 54 percent during that same time.

Quality of care in GIM, as defined by Rush Health's quality measures, has improved as a result of concentrated efforts during the past two years through regular reporting of physician quality metrics and an investment in additional certified medical assistants to reach out to patients and schedule health maintenance appointments. CMA workflow redesign, physician education and an Epic refresh are a few of the new initiatives that have been implemented.

The Department of Internal Medicine also has a large and successful residency program. We are currently training more than 100 preliminary and categorical IM residents, 16 combined internal medicine/pediatrics residents and 12 primary care residents, in conjunction with Stroger Hospital. In the past three years, our pass rate on the American Board of Internal Medicine certifying exam has risen from 82 percent to 97 percent.



At Rush River North, primary care patients benefit from a state-of-the-art facility and physician/medical assistant flow stations that improve communication between the provider and staff.



# Geriatrics & Palliative Care

20 Faculty Members / 5 Advanced Practice Nurses / 7 Fellows

Meet the doctors – Geriatrics: [www.rush.edu/services/geriatric-medicine/doctors](http://www.rush.edu/services/geriatric-medicine/doctors)

Meet the doctors – Palliative Care: [www.rush.edu/services/palliative-care/doctors](http://www.rush.edu/services/palliative-care/doctors)

Research page: [rushu.rush.edu/geriatrics-gerontology-and-palliative-medicine-research](http://rushu.rush.edu/geriatrics-gerontology-and-palliative-medicine-research)



Anthony J. Perry, MD\*  
Division Chief

“The greying of America has impacts that range from expanding vitality in later life to growth in chronic conditions and the burdens they often provide. Through research, education and clinical practice the Division of Geriatrics and Palliative Care works to address some of the most complex and important health issues of our time with thoughtfulness, creativity and a spirit of optimism.”

– Anthony J. Perry, MD



Anthony Perry, MD, with patient

**CLINICAL** The division comprises two key clinical sections: geriatrics and palliative care. In 2017, geriatric medicine was the pilot site for a new Medicare program focused on chronic care management. This program allows for the clinical team and ancillary staff to bill for home-care coordination and patient counseling and education done over the phone. Working closely with EPIC and Vyridian personnel, the geriatric team helped navigate logistical issues, EPIC workflows and other items that will now allow this program to roll out across Rush's many clinical departments.

Palliative care faculty were able to expand their chronic pain clinic in FY 17 as well as experience growth in their oncology-focused outpatient program. The team had its highest year yet of inpatient consults, proving a market leader in the number of inpatient consults by institution.



Martha Clare Morris, ScD

grant proposals submitted throughout the year. The key areas of focus of their research include Alzheimer's disease and population health.

**RESEARCH** The Section of Epidemiology will soon host the MIND trial ([www.mind-diet-trial.org](http://www.mind-diet-trial.org)) and other NIH-funded grants with the addition of a new section chief, **Martha Clare Morris, ScD**, in FY 18. The section hosted eight NIH-funded research grants in FY 17, with additional multiple

Co-directed by **Sean O'Mahony, MB, BCh, BAO**, the Section of Palliative Care closed out the final, third year of its almost \$800,000 Coleman Foundation education grant, which focuses on providing education to current and future palliative care providers and ancillary personnel. It is also conducting multiple clinical trials including two funded by the NCI and PCORI.

**MEDICAL EDUCATION** Under the leadership of **Jack Olson, MD**, the Section of Geriatrics hosted four fellows in FY 17, fully filling its fellowship spots during a time when most programs were unable to fill even one to two spots. Another highlight is the division's involvement with the HRSA-funded Geriatric Workforce Education Program, which focuses on providing education in geriatric medicine to a broad community of trainees. The Section of Palliative Care hosted three fellows in its joint program with Cook County Health System, in which fellows experience both palliative and geriatric rotations at both institutions during their fellowship experience.



Denis Evans, MD

**Denis Evans, MD**, was director of the Rush Institute for Healthy Aging for two decades and has tracked Alzheimer's for more than a quarter-century. Most recently, in July 2016, Evans was awarded the Bengt Winblad Lifetime Achievement Award in Alzheimer's Disease Research from the Alzheimer's Association. We congratulate him on a well-earned retirement after a career of major advancement and accolades in the field of

Alzheimer's research. **Anthony Perry, MD**, advanced to a new role at Rush as vice president for ambulatory transformation, vacating his leadership position with the division. A current search for a division chief is underway. **Sean O'Mahony, MB, BCh, BAO**, section chief of palliative care, was appointed interim division chief during this time.

\*Sean O'Mahony, MB, BCh, BAO, was named interim division chief in the second half of 2017.

# Hematology, Oncology & Cell Therapy

23 Faculty Members / 26 Advance Practice Providers / 6 Fellows

Meet the doctors: [rush.edu/services-conditions/cancer-center/meet-team](http://rush.edu/services-conditions/cancer-center/meet-team)

Research page: [rushu.rush.edu/hematology-oncology-and-stem-cell-transplant-research](http://rushu.rush.edu/hematology-oncology-and-stem-cell-transplant-research)



Timothy M. Kuzel, MD  
Division Chief

“Patients are coming to Rush for trials because we offer the novel trials they are seeking.”

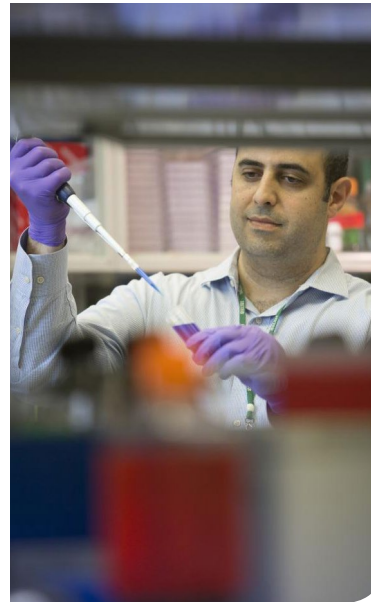
– Timothy M. Kuzel, MD

**CLINICAL** The division provides extensive services to patients through the Rush University Cancer Center. Patients have access to comprehensive clinics dedicated to conditions such as brain cancer, breast cancer, leukemias, lymphomas and prostate cancer. Patients also have access to supportive services, such as distress screening and survivorship planning. The division supports an urgent care center specifically for cancer patients, helping patients to avoid unnecessary emergency room utilization and access to specialized care.

Through a partnership with Tempus, cancer patients at Rush now have the option of undergoing a genetic analysis that may allow their oncologists to customize treatments for their particular cancer. Advances in genetic science and cancer care increasingly are enabling researchers and clinicians to design treatments for cancer that specifically target genetic mutations that lead to disease.

**RESEARCH** Research and clinical trial activities are growing rapidly within the division. As the division chief, **Timothy Kuzel, MD**, is committed to making clinical trials more accessible to patients. The division also supports a strong basic sciences research program. The scientific research conducted through the division has made a strong impact in the field of hematology and oncology.

**MEDICAL EDUCATION** The division supports two fellows each year for the three-year hematology-oncology fellowship. This ACGME-accredited program provides an opportunity for clinical training in hematology, medical oncology and stem cell therapy. In addition to diverse clinical experiences, fellows have the opportunity to participate in the ongoing research activities across the division.



**Abde Abukhdeir, PhD**, is focused on finding the preclinical evidence needed to test the effects of specific drugs on breast cancers with NF1 mutations.

**Abde Abukhdeir, PhD**, received two core scholarships from the Lynn Sage Foundation's Lynn Sage Scholars Program to fund research focusing on molecular variants that lead to or contribute to drug resistance in breast cancer. Collaborating with **Melody Cobleigh, MD**, medical oncologist, Abukhdeir hopes that his research will help determine how cancers with NF1 mutations will react to certain drugs, with the ultimate goal of providing more targeted treatments to breast cancer patients.

**Sasha Shafikhani, PhD**, is looking at how the presence of tumor and infection may lead to a state of immune confusion affecting both antitumor and antibacterial immune defenses.

**Vineet Gupta, PhD**, is developing novel, immune-targeted small molecule therapeutics to treat both cancer and autoimmune diseases.

**Amanda Marzo, PhD**, is attempting to identify and characterize the molecular mechanisms underlying head and neck squamous cell carcinoma initiation and progression, with the goal of enabling earlier diagnosis and developing more effective treatments.

**Mary Jo Fidler, MD**, is one of the principal investigators for a phase 1 clinical trial testing the experimental photoimmunotherapy technique for patients whose advanced head and neck cancer has not responded to chemotherapy or radiation and cannot be addressed surgically. Rush is the only center in Illinois offering this treatment.



Nurses in the infusion center have been instrumental in improving distress screening and connecting patients with the supportive services they need.

# Hospital Medicine

## 50 Faculty Members

Meet the doctors: [rush.edu/med-team](http://rush.edu/med-team)

Research page: [rushu.rush.edu/hospital-medicine-research](http://rushu.rush.edu/hospital-medicine-research)



Suparna Dutta, MD, MS, MPH  
Division Chief

“The Division of Hospital Medicine at Rush is a national leader in clinical care, education and the disciplines of patient safety and quality improvement. Through our clinical expertise, investment in educating our trainees and the extensive work we put into improving patient safety and quality at our institution, we are able to provide high quality, efficient and safe care for all of our patients — with superior outcomes.” – **Suparna Dutta, MD, MS, MPH**



The Division of Hospital Medicine provides high-quality, evidence-based care only for hospitalized patients. Hospitalists provide multidisciplinary care through continuous contact with nursing, pharmacy, case management and social worker staff. The division provides consultation and co-management services for multiple nonmedical services throughout the medical center.

**CLINICAL** The division specializes in the care of medical inpatients for the general medicine services at Rush University Medical Center. Through the medical consult service, the division also cares for surgical, rehab, psychiatric, neurologic and gynecologic inpatients. During the past several years, we have expanded our reach to include a new observation unit for short-stay patients, which was expanded in December 2017. We also have built and grown the Rush Center for Preoperative Care, where we evaluate and optimize patients prior to planned surgeries.

This year, to further optimize inpatient care, the division has partnered with nursing and case management to create accountable care units, led by a unit medical director, a registered nurse and a social worker, who work together to continuously improve care on the unit for our patients.

The division has had the following achievements this past year:

- 90,000 total inpatient encounters
- 5,400 visits to the Rush Center for Preoperative Care
- 79.5 percent patient satisfaction (doctor communication domain), with our work in patient communication highlighted in *New England Journal of Medicine Catalyst*

**MEDICAL EDUCATION** Following are highlights of our work over the past year:

- Faculty recognition for teaching excellence, both for graduate and undergraduate medical education
- Implementation of a quality improvement track as part of the Internal Medicine Residency curriculum
- Integration of quality and safety education into the M3/M4 years, with a hospitalist-led quality improvement elective and a mandatory M3 track developed to expose all students to continuous improvement

- Development of a new curriculum in conjunction with the medical college
- Participation in the LEAD and TEACH programs via the Society of General Internal Medicine
- Participation in the Society of Hospital Medicine Public Policy Committee
- Participation in the observation care white paper, published by the Society of Hospital Medicine
- Presentations and posters at medical education conferences, including AAIM, SHM and SGIM
- Research and work with big data via CAPriCORN, a Chicago based PCORI initiative designed to link researchers, patient communities, clinicians and health systems via health data
- Participation in national clinical trials, such as the MINT trial

Our faculty includes daytime hospitalists, advanced practice providers (PAs and APNs) and nocturnists. We have faculty members who have been a part of the group for more than 20 years as well as many recent graduates. We are proud of our extremely high retention rate for faculty and the strong cohort of former Rush graduates and chief residents from the Rush Internal Medicine Residency program who choose to stay on with us. Our program invests heavily in developing our faculty, with regular educational offerings, such as hospital medicine grand rounds, journal clubs and faculty development sessions. We also have many faculty members who are alumni of national programs, such as the Academic Hospitalist Academy, the Quality and Safety Educators Academy and the Society of Hospital Medicine's Leadership Academy.



# Infectious Diseases

28 Faculty Members / 10 Fellows

Meet the doctors: [rush.edu/services/infectious-diseases/doctors](http://rush.edu/services/infectious-diseases/doctors)

Research page: [rushu.rush.edu/infectious-diseases-research](http://rushu.rush.edu/infectious-diseases-research)



Gordon M. Trenholme, MD\*  
Division Chief

“Infectious disease involves problem solving, differential diagnosis and appropriate therapeutic decisions. When the division was started by Dr. Stuart Levin, outpatient ID was minimal and inpatient was quite busy. The division has grown from four faculty members in 1975 to 28 today.”

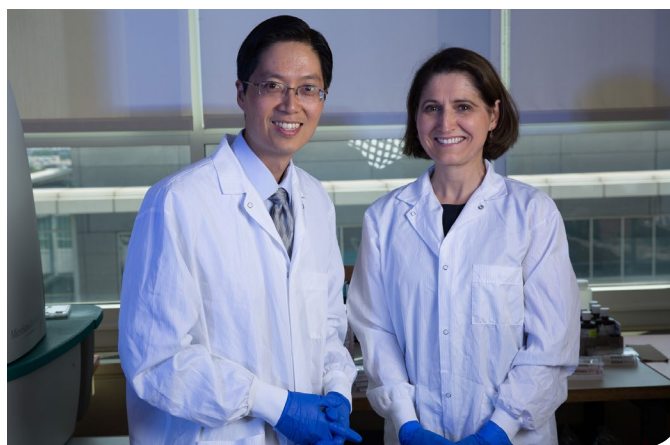
– Gordon M. Trenholme, MD

**CLINICAL** Infectious diseases specialists diagnose and treat a wide range of diseases caused by germs such as bacteria, viruses, fungi and parasites. The division’s areas of special expertise include HIV and AIDS, as well as infections related to organ transplantation, orthopedic surgery, tropical disorders from traveling abroad, invasive fungal infections, antibiotic resistance and weakened immune systems.

Other activities include infection control, Institutional Review Board membership, transplant support and direction of the clinical microbiology lab.

**RESEARCH** The major areas of research in the division are in hospital epidemiology and HIV. The Prevention and Intervention Epicenter grant from the CDC funds a year of research for one ID fellow. Many fellowship applicants are interested in doing a third year of research in the epicenter and are possible NIH Young Investigator Award candidates.

**MEDICAL EDUCATION** The division educates medical students, physician assistants, residents in medicine and ophthalmology, and fellows in infectious diseases and neurointensive care. Didactic lectures and bedside teaching are taken seriously. A number of the ID faculty members provide research experiences for residents and medical students.



Infectious diseases researchers **Michael Lin, MD, MPH (left)**, and **Mary Hayden, MD**, receive support from the CDC.

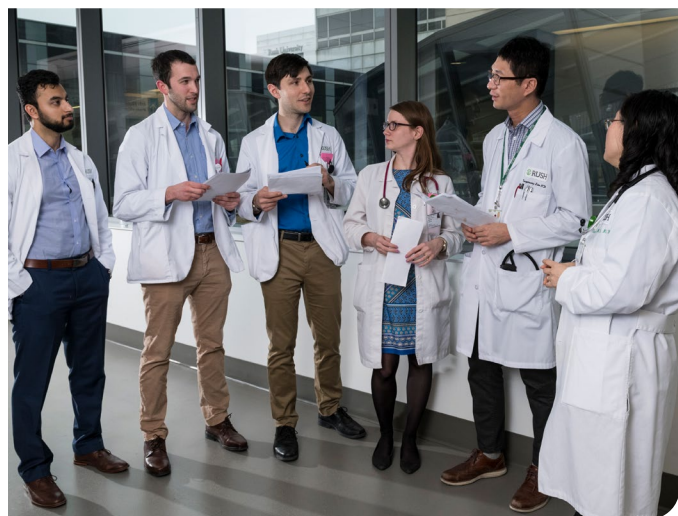
As part of the division’s joint fellowship with John H. Stroger, Jr. Hospital of Cook County, fellows are trained by faculty at Rush, Stroger Hospital and the CORE Center. More than 150 ID fellows have trained in our program, the largest of its kind in the Midwest. During the past three years, seven fellows have attained academic positions and eight have entered private practice after completing the fellowship program. The division director also leads the fellowship program, which includes two associate directors from Rush and Stroger Hospital. The fellowship program coordinator is at Rush.

To attract the best fellows, recruitment is an intensive effort. Reviews of the program and faculty are generally excellent.

**Kyle Popovich, MD, MS**, examines the epidemiology of methicillin-resistant *Staphylococcus aureus* in community as well as hospital settings, and studies racial, ethnic and gender disparities in MRSA colonization and infection rates. She currently has an NIH-funded project underway that is using whole genome sequencing to examine the genomic epidemiology of MRSA in correctional facilities and the impact MRSA has in the surrounding community.

**Mary K. Hayden, MD**, received a large epicenter grant from CDC this year. The division also has more than a dozen clinical trials ongoing that offer our patients choices for treatment.

\*Alan Harris, MD, was named interim division chief after Trenholme’s retirement in January 2018.



Teaching rounds are an important part of the division’s commitment to medical education.

# Nephrology

11 Faculty Members / 6 Fellows

Meet the doctors: [rush.edu/services/nephrology/doctors](http://rush.edu/services/nephrology/doctors)

Research page: [rushu.rush.edu/nephrology-research](http://rushu.rush.edu/nephrology-research)



Vasil Peev, MD  
Division Chief

“Kidney disease is one of the nation’s most common medical conditions. Although a cure for kidney disease is still not a reality, the Division of Nephrology at Rush has fostered a unique approach by combining its basic science with clinical experience to bring the cure closer to our patients.” – **Vasil Peev, MD**

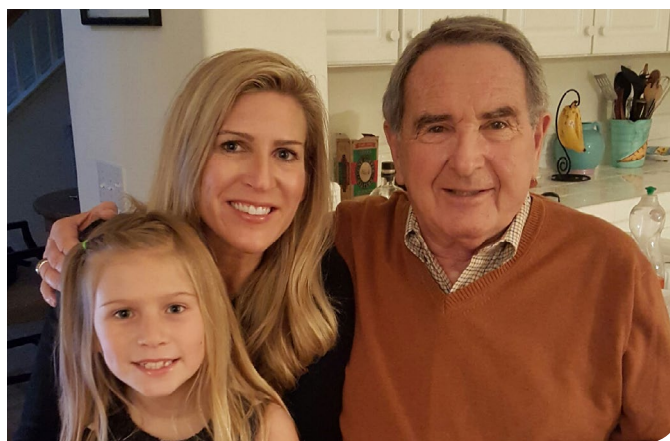
**CLINICAL** The Division of Nephrology consists of the following three sections:

- General nephrology led by **Vasil Peev, MD**
- Interventional nephrology led by **Monnie Wasse, MD, MPH**
- Transplant nephrology led by **Samuel N. Saltzberg, MD**

The nephrology program at Rush is consistently named among the best in the country by *U.S. News & World Report*. The nephrology team at Rush has developed innovative treatments for kidney disease, including slowing the progression of kidney disease in people with diabetes. The interventional nephrology program at Rush specializes in providing routine and complex care for the management of hemodialysis fistulae, grafts and catheters. The transplant nephrology team includes skilled transplant surgeons and medical specialists, as well as a nurse coordinator who is available to answer patients’ questions about treatment.

**RESEARCH** For decades, nephrologists at Rush have advanced the understanding of kidney disease and transformed how clinicians care for patients here and abroad. Rush is home to specialized clinics for kidney transplant patients, as well as individuals with diabetic kidney disease, glomerular diseases, renal stones and anemia due to kidney disease.

**MEDICAL EDUCATION** Education also is a strength at Rush, and division faculty have earned eight teaching awards from the Department of Internal Medicine. Since 1973, 105 nephrology fellows have trained at Rush.



Kidney recipient Maurie Cone (right) and donor Teresa Kieffer (middle) forge a bond after altruistic organ donation at Rush.

Today, the division maintains a highly active, basic science research program, backed by 12 NIH grants. Following are some of the key new discoveries at Rush:

- **Jochen Reiser, MD, PhD**, is investigating the permeability factor (suPAR) that causes glomerular injury such as focal segmental glomerulosclerosis and diabetic nephropathy.
- **Sumant S. Chugh, MBBS, MD**, is describing the major molecular basis of human minimal change nephrotic syndrome.
- **Vineet Gupta, PhD**, is using state-of-the-art technologies to discover novel treatments for kidney disease.
- **Stephen Korbet, MD**, has collaborated with NIH researchers to understand the genetic abnormalities that lead to the development of FSGS.
- The Collaborative Study Group is testing pyridorin to slow the rate of progression of type 2 diabetic nephropathy.
- **Steve Mangos, PhD**, has developed genetic models of renal disease using zebra fish to test promising new agents.
- Researchers in the Division of Nephrology are partnering with Chinese scientists at Peking University First Hospital on studies focused on kidney disease.



Professors **Jochen Reiser, MD, PhD** (right), and **Vineet Gupta, PhD**, prepare samples for high-throughput analysis. Reiser’s and Gupta’s research groups are discovering new treatments for proteinuric kidney diseases.



# Pulmonary, Critical Care & Sleep Medicine



Robert A. Balk, MD  
Division Chief

14 Faculty Members / 12 Fellows

Meet the doctors: [rush.edu/services/pulmonary-and-critical-care-medicine/doctors](http://rush.edu/services/pulmonary-and-critical-care-medicine/doctors)

Research page: [rushu.rush.edu/pulmonary-medicine-and-critical-care-research](http://rushu.rush.edu/pulmonary-medicine-and-critical-care-research)

“The Division of Pulmonary, Critical Care and Sleep Medicine is excited about our recent growth and the strategic changes that have further enhanced our clinical programs, research endeavors and fellowship training programs. We are planning further enhancements by partnering with the cardiovascular service line, ENT, allergy and immunology, and thoracic surgery for multispecialty clinical care that will add to our mission and vision for future growth” – **Robert A. Balk, MD**

**CLINICAL** The Section of Pulmonary Medicine under the leadership of **Mark Yoder, MD**, has an expanded repertoire of interventional pulmonary procedures that includes cryobiopsy, argon plasma coagulation, eBUS, navigational bronchoscopy, percutaneous tracheostomy placement and pleurX catheter placement. The Section of Critical Care Medicine under the leadership of **David Gurka, MD, PhD**, continues to provide comprehensive critical care for patients in the medical intensive care unit, which has recently expanded to a total of 27 beds. The Section of Sleep Medicine under the leadership of **James Herdegen, MD**, has continued to grow in patient volume and polysomnographic studies performed. Visits to the sleep center have increased 93 percent since 2016.

**RESEARCH** Following are some of the basic science, translational, clinical and quality improvement projects underway:

- Basic research conducted by **Sanda Predescu, PhD**, and **Dan Predescu, MD**, including an NIH/NHLBI study investigating the cleavage of intersectin-1s by Granzyme B and pulmonary arterial hypertension
- A preclinical study investigating the usefulness of 12 months of nintedanib treatment in a genetic model of pulmonary fibrosis
- Translational research on acute lung inflammation/injury/acute respiratory distress syndrome (ARDS)



Pulmonologists at Rush use the latest diagnostic tools and treatments to address the full spectrum of lung diseases.

**MEDICAL EDUCATION** Members of the division serve as key faculty for medical education programs across the medical center. In addition, basic scientists **Sanda** and **Dan Predescu** teach courses in the College of Health Sciences and Rush Medical College. **Sara Mirza, MD, MS**, regularly brings attending physicians and fellows to the Rush Center for Simulation Training to ensure we have competency for providing complex care and using sophisticated equipment and techniques to take care of our critically ill patients.

The division has made significant changes during the past year that have improved clinical care, medical education and research. Clinical programs have been improved with the recruitment of three new attending physicians, one of whom is postfellowship trained in pulmonary hypertension and has revitalized the pulmonary hypertension program. Interventional procedures continue to grow in volume and complexity. Our critical care efforts have expanded to include rounding in the CVT-ICU and participation in the ELSO Gold Certified adult ECMO program for patients with profound cardiac and/or respiratory dysfunction.

The fellowship programs had successful matches and continue to provide excellent clinical and research training.

Our research program also added two basic scientists who are conducting a number of research studies evaluating the vascular changes in pulmonary arterial hypertension and the pathogenesis and treatment of pulmonary fibrosis.



Critical care specialists provide inpatient consultation, evaluation and state-of-the-art treatment for a wide range of acute and chronic medical conditions. They collaborate with a team of specialists to ensure the best quality care for patients.



# Rheumatology

21 Faculty Members / 5 Fellows

Meet the doctors: [rush.edu/services/rheumatology/doctors](http://rush.edu/services/rheumatology/doctors)

Research page: [rushu.rush.edu/rheumatology-research](http://rushu.rush.edu/rheumatology-research)



Joel A. Block, MD  
Division Chief

“In addition to being home to the pioneers in patient-reported outcomes in rheumatoid arthritis and systemic lupus, the Division of Rheumatology has a long, multidisciplinary history of studying the biology, biomechanics and clinical care of osteoarthritis. Today, it maintains one of the largest and best respected osteoarthritis groups internationally, as well as one of the most important groups evaluating the physiology of osteoarthritis pain.” – **Joel A. Block, MD**

**CLINICAL** The Division of Rheumatology is internationally known for its excellence in patient care and research in all aspects of rheumatology, including but not limited to osteoarthritis, rheumatoid arthritis and connective tissue diseases. To meet the complex needs of patients with rheumatic disease, the division offers specialty clinics and services such as the Rush Lupus Clinic and the Rush Osteoporosis Center. The Rush Immunotherapy Infusion Center offers a vast range of services, including infusions, injections, vaccinations and patient education on self-administered injections. The infusion team works with referring physicians to deliver medication safely, affordably and efficiently.

**RESEARCH** The division has particular prominence in the areas of osteoarthritis, patient-reported outcomes, pain and systemic lupus erythematosus. Faculty conduct basic science, translational and clinical studies to generate new avenues for helping our patients. Our work is recognized internationally and has support from a variety of federal and foundation sources. The division participates in multiple clinical trials as well as research studies in hopes of improving clinical outcomes.

**MEDICAL EDUCATION** Rush rheumatology faculty are nationally recognized specialists, determined to foster academic inquiry and provide broad clinical exposure in all aspects of rheumatology. Fellows work in an office-based, private rheumatology practice where they learn to assess patients, formulate diagnoses and develop comprehensive care plans. In addition, fellows can interact with patients with SLE and osteoporosis, and gain additional experience in our ultrasound specialty clinics. Our graduates have gone on to distinguished careers at leading private and academic medical centers.



**Meenakshi Jolly, MD, MS** (left), has developed the first validated measures for quality of life in lupus patients and pioneered research on using those measures to improve quality of life. Now she is sharing the tool across the globe.

The Division of Rheumatology also offers onsite X-rays, bone densitometry scans and ultrasound. This ensures that our patients receive many of the necessary rheumatic services within a single facility. This is especially convenient for our patients who suffer from limited mobility due to their rheumatic condition.

According to **Sobia Hassan, MD**, there are many indications for ultrasound use in rheumatology practice. One is to guide injections of deep joints, such as the hip, or other joints that may be difficult to inject without guidance. The machine can also be used to look for signs of joint inflammation or damage that may be missed by clinical examination or X-ray. It can also sometimes detect signs of gout.

The findings seen on ultrasound can help diagnose and guide treatment in our patients. A major advantage of ultrasound is that there is no radiation exposure involved. The test can be performed right here in our rheumatology clinics.



**Anne-Marie Malfait, MD, PhD** (right), and **Rachel E. Miller, PhD**, work with their team to discover new treatment targets for osteoarthritis and associated pain.





To learn more about the Department of Internal Medicine at Rush, visit **[rush.edu/internalmedicine](http://rush.edu/internalmedicine)**

## HOW TO MAKE A GIFT TO THE DEPARTMENT

To learn how you can make a difference in the lives of our patients, please contact us at **[giving@rush.edu](mailto:giving@rush.edu)** or call **(312) 942-6830** or make a gift any time using our secure online form at **[rush.convio.net/internalmedicine](http://rush.convio.net/internalmedicine)**. Thank you.

**RUSH** Rush is an academic health system comprising Rush University Medical Center, Rush Copley Medical Center and Rush Oak Park Hospital.

PLEASE NOTE: All physicians featured in this publication are on the medical faculty of Rush University Medical Center. Some of the physicians featured are in private practice and, as independent practitioners, are not employees or agents of Rush University Medical Center.