ACCELERATING EXCELLENCE + INNOVATION

DEPARTMENT OF MEDICINE 2018 - 2019 ANNUAL REPORT
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th></th>
<th>1 2018–2019 Accomplishments</th>
<th></th>
<th>14 Veterans Affairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Chairman’s Message</td>
<td>15 Harrington Discovery Institute</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Divisions</td>
<td>16 Graduate Educational Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 Cardiovascular Medicine</td>
<td>17 Undergraduate Educational Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 Clinical &amp; Molecular</td>
<td>18 Research</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Endocrinology</td>
<td>19 Diversity &amp; Development</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 Gastroenterology &amp;</td>
<td>20 Clinical Departmental</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Liver Disease</td>
<td>Administration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 General Internal Medicine</td>
<td>21 Academic Departmental</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 Geriatrics &amp; Palliative</td>
<td>Administration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Care</td>
<td>22 By the Numbers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 Hematology &amp; Oncology</td>
<td>23 By the Numbers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 Infectious Diseases &amp;</td>
<td>24 Leadership &amp; Faculty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HIV Medicine</td>
<td>25 Leadership &amp; Faculty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11 Nephrology &amp; Hypertension</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 Pulmonary, Critical Care</td>
<td>26 Leadership &amp; Faculty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&amp; Sleep Medicine</td>
<td>27 Leadership &amp; Faculty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13 Rheumatology</td>
<td>28 Leadership &amp; Faculty</td>
<td></td>
</tr>
</tbody>
</table>

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2018 - 2019 ACCOMPLISHMENTS

PATIENT CARE

- Fifty-five Department of Medicine full-time faculty members were recognized as “Top Doctors” by Castle Connolly Medical Ltd. and Cleveland Magazine.
- The Department once again achieved successful representation in five specialties reported in the 2018-2019 U.S. News & World Report annual ranking.
- The annual Medicine Quality Summit built upon past successes and brought together a broad cross-section of providers with a focus on continuing the journey toward high-quality care and pursuing a culture of quality and safety.
- The Department of Medicine received the highest ranking in “Point of Service” patient satisfaction twice in 2019 for all of University Hospitals Medical Group.

RESEARCH

- Awarded funds to departmental faculty, including University Hospitals Cleveland Medical Center, Case Western Reserve University and Louis Stokes Cleveland VA Medical Center, exceeded $65 million.
- Research awards again favored the highly competitive and prestigious national venues with nearly 80 percent coming from federal sources.
- Continuing into its 5th year, the Harrington Physician-Scientist Pathway recruited two new residents. This pathway develops a new generation of leaders in medicine by offering training in basic, clinical and translational research.
- Participation in the Department of Medicine’s intramural research-related activities such as Research Day (82 posters, 3 excellent research talks), the Team Science Challenge (11 submitted and 5 funded) and mentorship programs remained strong.

EDUCATION

- Our Leadership in the Medicine Education Pathway has become a model for other Internal Medicine Programs nationally, with several graduates of the program hired to similar programs.
- More than half of our residents presented original research at refereed national meetings.
- The Residency and Clerkship Leadership group presented nine posters and workshops at national meetings devoted to resident and student education, and continue to maintain a high profile nationally.
- In April 2019, Dr. Armitage received the Dema Daley Founders Award from the Academic Alliance for Internal Medicine. The Dema C. Daley Founders Award honors a member of the internal medicine community recognized nationally as an educator, innovator, and leader.
Welcome to the Annual Report of the Department of Medicine for the academic period 2018–2019. Our faculty, staff and trainees had an outstanding academic year in advancing our clinical, research and teaching missions.

Research support within the Department of Medicine remains strong with overall grant awards for the department at $65 million for academic year 2018–2019 with 80% of awards related to the National Institutes of Health and other federal sources. This represents a broad portfolio of research across the divisions, centers and institutes ranging from molecular mechanisms of disease, discovery and innovation, national and international clinical trials as well as an increased emphasis on health service research and population health. Divisions highly invested in the research mission include Infectious Diseases & HIV Medicine, Cardiovascular Medicine, Gastroenterology & Liver Disease and Hematology & Oncology. Mukesh Jain, MD, through his appointment as Chief Academic Officer for University Hospitals, will focus on the infrastructure supporting translational, clinical research and population health. New recruitments of senior level faculty in Rheumatology, Nephrology, Hematology & Oncology, Geriatrics and Diabetes and Obesity will enhance the research profile and funding in the Department.

In 2018–2019, the department again sponsored strong intramural research-related initiatives. Five additional Team Science Challenge grants were awarded to departmental faculty to stimulate interdisciplinary translational research between divisions and departments. (Lalitha Nayak, MD, David Zidar, MD, PhD, and Jeffrey Hardacre, MD; Leland Metheny, MD, Jeffry Katz, MD, and Mahmoud Ghannour, PhD; Folashade Otegbeye, MD, and Howard Meyerson, MD; Reshmi Parameswaran, PhD, and Quintin Pan, PhD; Richard Lee, MD, and Sharon Stein, MD) This year the UH Center for Clinical Research supplemented the Departmental awards. Over 150 faculty and trainees attended the tenth annual Department of Medicine Research Day, and our residents, fellows, graduate students and postdoctoral investigators presented over 82 posters.

In the seven years since the inception of the Harrington Discovery Institute—part of The Harrington Project for Discovery & Development—the institute has increasingly gained the attention of leaders within academia, healthcare, finance and beyond. In the past year, recognition of the efficacy and influence of the Harrington platform led to the launch of two exciting initiatives, which will enable the institute to direct powerful resources toward new areas of unmet therapeutic need:

+ A first-in-kind relationship with the University of Oxford, that aligns resources and expertise to improve treatment options globally for patients with rare diseases. The global Oxford-Harrington Rare Disease Centre supports the development of new treatments for rare diseases, one of humankind’s most significant and unaddressed health challenges.

+ A new partnership with Morgan Stanley Global Impact Funding Trust (GIFT) is transforming the way philanthropy supports the development of new medicines. Morgan Stanley GIFT Cures powered by CHAIRMAN’S MESSAGE
Harrington Discovery Institute is Morgan Stanley’s first special interest program for philanthropists seeking to amplify their impact by accelerating cures for multiple diseases.

Harrington Discovery Institute continues to work with Takeda Pharmaceuticals—its first pharma industry partner—to advance breakthrough research into treatments for rare diseases through the Harrington Rare Disease Scholar program. In 2019, the institute welcomed its seventh class of Harrington Scholar-Innovators, who are inventive physician-scientists from institutions across the U.S. whose research demonstrates innovation, creativity and the potential to impact standards of care in medicine. In addition, the institute has been enriched through recruitment of outstanding physician-scientists Andrew Pieper, MD, PhD, and Atul Chopra, MD, PhD.

To date, Harrington Discovery Institute has assessed more than 2,100 drug development projects from 210 institutions and funded 111 potential drugs-in-the-making at 50 institutions. Additionally, The Harrington Project has supported the launch of 24 companies, the licensing of six programs to large pharmaceutical companies, and the movement of seven drugs into clinical trials. Just as important as the accomplishments to date, the institute is prepared for the future with an operational framework that has been designed to support the changes that lie ahead.

Our educational programs, led by Keith Armitage, MD, remain enormously robust and are strongly supported by our faculty. The 2019 NRMP match was again highly successful with a substantial increase in total applications. This academic year marked the fifth wave of residents admitted to our enhanced and successful Harrington pathway to fast track into the ACGME-endorsed program for physician-scientists. Two of the initial class of fast-track trainees will be joining our faculty this year.

University Hospitals Cleveland Medical Center remained by a wide margin the top choice for our medical students completing internal medicine acting internships. Our full-time faculty members continue to provide nearly 30 percent of the total teaching time at Case Western Reserve University School of Medicine. Three additional medicine faculty members were selected as Master Clinician Educators in the spring of 2019 (Brenda Cooper, MD, Frank Jacono, MD and Mahboob Rahman, MD). This list of 27 total faculty, developed over 9 years, truly represents our department’s clinical and educational Hall of Fame. This year, 13 Departmental faculty (Mauricio Arruda, MD, Ali Askari, MD, Baha Arafah, MD, Amitabh Chak, MD, Marco Costa, MD, PhD, John Dumot, DO, Debra Leizman, MD, Judith Mackall, MD, Aparna Padiyar, MD, Robert Salata, MD, George Topalsky, MD, Marcos de Lima, MD, Afshin Dowlati, MD) were named to the second class of Distinguished UH Physicians and Surgeons.

In the next academic year, we have plans to enhance the mentoring programs for young faculty and residents (with a coaching program involving 36 faculty) as well as increase our activities in the recruitment of women and minorities among our faculty and trainees. In addition, we plan to establish new high-level priorities in the clinical and research realms of diabetes, obesity, bone disease, hypertension, adult asthma, cystic fibrosis, congenital heart disease, end-stage renal disease, and respiratory health; as well as focus on our strengths in cancer, cardiovascular medicine, infectious diseases, and gastroenterology and liver diseases. To enhance our programs in diversity and faculty development, Usha Stiefel, MD, led department-wide initiatives as Vice Chair for Diversity & Faculty Development.

I invite you to become more familiar with our department by examining this report and by visiting our website at: medicine.case.edu.

It is my distinct honor and pleasure to lead our outstanding faculty, staff and trainees.

Respectfully,

Robert A. Salata, MD
Professor and Chairman
Department of Medicine
STERIS Chair of Excellence in Medicine
Physician-in-Chief
Master Clinician in Infectious Diseases
University Hospitals Cleveland Medical Center
Case Western Reserve University
The 2018-2019 academic year has seen historic accomplishments for Cardiovascular Medicine and the Harrington Heart and Vascular Institute (HHVI) with tremendous growth in all three mission areas of research, clinical care and education.

The Heart Programs were rated #24 in the Nation by US News and World Report. Clinical programs in interventional cardiology, electrophysiology, advanced heart failure, and vascular and critical care are witnessing record growth, increasing market share in Ohio.

A new world class Center for Advanced Cardiac and Vascular Care was unveiled in September 2019 allowing cardiovascular tomographic (CT) imaging/magnetic resonance imaging (MRI) guided complex structural intervention. This center will facilitate convergence of next generation advanced imaging (including virtual reality (VR) facilitated and remote robotic intervention in the future) and structural intervention.

The Structural Heart Disease program is considered a global leader in procedures like TAVR and Mitraclips with our experts educating physicians across the world from live Cleveland-based video broadcasts.

A generous $5 million gift from Angela and James Hambrick helped establish the Hambrick Center for Cardiac Recovery at UH Harrington Heart & Vascular Institute to help patients with advanced heart failure receive access to cutting-edge therapies.

The Vascular Medicine program has grown exponentially with the establishment of a unique regional referral center for Fibromuscular Dysplasia and Spontaneous Dissection. Programs in Critical Limb Ischemia continue to chart new records with techniques such as deep venous arterialization and renal denervation.

A new Translational Science unit (TSU) was inaugurated January 2019, which will facilitate investigator initiated translational research projects and will serve as an incubator for promising young investigators with a future in translational research.

The Cardiovascular Research Institute (CVRI) continues successfully with several new R01s and a T32 Grant. Under the direction of Dr. Mukesh Jain, a new American Heart Association-Allen Initiative in Brain Health and Cognitive Impairment began in 2019. UH is one of only three recipients of this prestigious national award.

The publication record for Cardiovascular Medicine has been stellar with >200 published papers in peer reviewed journals in 2019.

The 13th Annual Cardiovascular Disease Update in the fall of 2019 attracted world-class faculty and was rated as one of the best CME events in the mid-west.

Our Fellowship training program has been immensely successful in recruiting top-notch trainees from around the world. Many of our faculty received teaching awards in 2018-19. The division currently boasts four elected American Society of Clinical Investigation (ASCI) members and one Institute of Medicine (IOM) member.
The Division of Endocrinology prides itself for being able to offer outstanding patient care while simultaneously advancing basic and translational research along with educating the next generation of leaders in our specialty.

The Division’s faculty include internationally renowned investigators who have made important scientific contributions in several disease-specific disciplines within our specialty such as diabetes mellitus, thyroid illnesses as well as diseases of the pituitary and adrenal glands. Some of our faculty members played a leading role in the planning and execution of several NIH-sponsored, nation-wide clinical trials addressing diabetes management and its complications. The results of these landmark studies have drastically impacted clinical practice as they introduced a paradigm shift in the management of some endocrine disorders such as diabetes mellitus and consequently set a new standard of care for physicians and patients to follow.

Faculty members offer clinical expertise in all disciplines of the specialty and many are internationally recognized in their respective fields. A unique and important feature of our faculty is that some have a secondary appointment in basic science departments such as Biochemistry and Pharmacology. The persistent interactions between our faculty members and others in basic science departments have helped promote collaboration on furthering translational research within the Division. It is truly remarkable to be among a group of highly dedicated physicians who are passionate about delivering the best medical care to their patients while at the same time passing that trait to the next generation of endocrinologists. In advocating a patient-centered approach in the management of endocrine diseases, our faculty have been recognized nationally for their efforts to promote a holistic approach to delivering care to our patients by integrating the social setting of our patients as well as their educational, economical and personal choices in designing therapeutic interventions.

The educational and training program emphasizes the importance of understanding basic physiological mechanisms along with deep and thorough appreciation of our patients’ individuality. The training program also emphasizes independent learning, inquiry and critical appraisal of the literature. Our trainees have had successful careers in academic institutions as well as in clinical practice.
The Division of Gastroenterology and Liver Disease continues to be an international leader in clinical research, education, and community service.

The following programs continue to flourish with important accomplishments and publications: the Cleveland Digestive Diseases Research Core Center, Program Project Grant: Innate Immunity and Experimental Crohn’s Disease, Barrett’s Esophagus Translational Research Network (BETRNet) Research Center.

The division continues to be successful in large multi-disciplinary National Institutes of Health grants:
- Digestive Diseases and Metabolism: P30 Center (PI: Fabio Cominelli, MD, PhD)
- Inflammatory Bowel Disease: P01, R01 (PI: Fabio Cominelli, MD, PhD)
- Barrett’s Esophagus: U54 (PI: Amitabh Chak, MD)
- Gastrointestinal Cancers: P50 (Co-PI: Amitabh Chak, MD)
- Stent vs. Indomethacin for Preventing Post-ERCP Pancreatitis: The SVI Trial (Co-I: Amitabh Chak, MD)
- Education and Training: T32 and T35 (PI: Fabio Cominelli, MD, PhD)
- Role of TWEAK/Fn14 in the Pathogenesis of Experimental IBD: CCFA Fellowship Award (PI: Luca Di Martino, PhD)
- TL1A/DR3 regulates the effector-regulatory T cell balance in experimental CD: CCFA Fellowship Award (PI: Ludovica Butto, PhD)
- Stress Induced Inflammation and Dysbiosis in a Mouse Model of Crohn’s Disease: NIH F31 (PI: Adrian Gomez-Nguyen, MSTP Student)
- Identification of Pathogenic Bacteria in Crohn’s Disease: NIH R21 (PI: Alexander Rodriguez-Palacios, DVM, PhD)

The division’s clinical activity remains highly productive, providing integrated care within the primary and secondary markets, which have further expanded the development of our clinical programs to the east and west sides of Cleveland. This clinical expansion includes a hepatology clinic on the far west side (Elyria) and far east side (Portage) of Cleveland and the introduction of a telemedicine initiative within hepatology.

In September 2016, our division launched Cleveland IDEAS (International Digestive Education and Science) Symposium, the first series of educational activities that encompassed a two-day Basic Science workshop for research-oriented physicians and scientists and a two-day clinical gastroenterology/hepatology course. The Symposium was held again in September of 2018 and will also take place in 2020.

We continue to pursue excellence in all areas of the departmental mission and strive to provide state-of-the-art care for patients with digestive diseases, while at the same time remaining inquisitive researchers and educational innovators.
In academic year 2018-2019, the Division of General Internal Medicine made valuable contributions to patient care and clinical education and continued its work in systems process and quality improvement.

At University Hospitals Cleveland Medical Center, our Hospitalist faculty, who attend on nearly a third of the Department of Medicine’s inpatients, had a Risk adjusted Length of Stay ratio of 1.07 and Risk adjusted Mortality ratio of 0.33 (observed/expected values), surpassing last year’s values and ranking them in the Top 50% of the Vizient hospital database when compared to their peers. In addition, as part of University Hospital’s Blood Management Program initiative, the division of General Internal Medicine posted one of the system’s best improvement scores, increasing the rate of appropriate red blood cell transfusions from a baseline of 73% to 92%.

As in previous years, several of our Primary Care faculty were honored as Cleveland Magazine’s “Top Doctors”, with patient satisfaction scores approaching the 100th percentile.

From the Section of General Internal Medicine at the Louis Stokes Cleveland Veterans Affairs Medical Center, six hospitalist faculty members had abstracts accepted and presented at the 2019 Society of Hospital Medicine Annual Meeting. The project, “Decreasing Admissions, Readmissions and Length of Stay While Improving Patient Safety for Alcohol Withdrawal Syndrome” was chosen as one of the top 3 Research, Innovations & Vignette posters out of over 1000 presented at the meeting.

The Cleveland Veterans Affairs Emergency Department was awarded Level 1 Geriatric Emergency Department Accreditation by the American College of Emergency Physicians. It is the first Veterans Affairs Medical Center and 9th overall Emergency Department in the nation to earn this accreditation.

Our clinician-educators continued their excellence in teaching, and this past academic year two faculty members were honored with the Department of Medicine’s Inpatient and Outpatient Teacher of the Year awards.

Our faculty are dedicated to providing high-quality medical care to our patients and remain committed to creating a stimulating learning environment for our trainees.
The Division of Geriatrics and Palliative Care at University Hospitals Cleveland Medical Center engages in clinical services, educational programs and research activities aimed at improving care for our patients.

We continue to offer exceptionally diverse clinical services that include: inpatient care on the ACE (Acute Care for the Elderly) Service, inpatient geriatric co-management and consult service, outpatient geriatric assessment at Foley ElderHealth Center, home visits to homebound patients through the UH HouseCalls program, coordinated care through McGregor PACE (Program of All-Inclusive Care for the Elderly), skilled nursing care at Judson Park, long term care at McGregor Gardens/Overlook, and Palliative Care Consult Services.

New divisional highlights include:
- Expansion of the PACE program
- Advancement in UH’s key quality improvement initiatives through collaboration with UH’s Quality Institute
- Expansion of outpatient geriatric assessment program at Foley Elderhealth Center

The section of Palliative Care’s intensive patient- and family-centered commitment remains a centerpiece of UH’s “Art of Compassion” focus. It has continued to expand the scope of its clinical, educational, and quality improvement activities. The section added Rab Razzak, MD, a distinguished clinical leader in Palliative Care, as its Medical Director for University Hospitals Cleveland Medical Center and Seidman Cancer Center, and is engaged in the following strategic initiatives.
- A system-wide High-Reliability Medicine (HRM) initiative in Palliative Care, focused on expanding and integrating Palliative Care services across the advanced illness continuum
- Expanding early, proactive Palliative Care consultation among high-risk ICU admissions
- Increasing Palliative Care education activities among CMC’s medical and surgical residency programs
- Integrating tablet-based patient reports of symptoms and other Palliative Care needs into care at Seidman Cancer Center
The Division of Hematology & Oncology had a very productive year. Our faculty has been very busy clinically and academically, and a partial list of accomplishments is presented here.

The Case Comprehensive Cancer Center (CCCC) National Cancer Institute (NCI) P30 grant was renewed under the leadership of Stanton Gerson, MD, with contributions from multiple individuals. The $27.9 million grant is to support our collaborative research. Our Center has had NCI designation since its founding, and attained “comprehensive” status in 1998. In addition, the NCI awarded the renewal of the $4 million K-12 Scholar Training grant.

The Division is home of the NCI awarded Case Specialized Program of Research Excellence in Gastrointestinal Cancers (GI SPORE), led by Dr. Sanford Markowitz. This is a $12.5 million program, which, along with Harvard University and Johns Hopkins University, is one of three such centers of excellence in the country. Senior leaders include members of several divisions and programs. SPORE-supported research has led to the creation of several novel clinical trials, led by David Bajor, MD, David Wald, MD, PhD, Joseph Willis, MD, Amitabh Chak, MD, and Folashade Otegbeye, MD, PhD, among others.

The CCCC was awarded a P20 SPORE Planning Grant, a three-year, $3.2 million grant from the NCI to investigate colorectal and breast cancer health disparities. Principal investigators include Nathan Berger, MD, Monica Webb Hooper, PhD, and Li Li, MD, PhD, from the University of Virginia.

Clinical research is a major aspect of our mission. In 2018, clinical trial accrual went up by 14%, with 460 subjects enrolled in interventional studies. Approximately 150 oncologic therapeutic clinical studies are open at any time at University Hospitals Seidman Cancer Center.

Cellular immunotherapy saw a significant expansion over the last year in a variety of collaborative efforts involving members of several divisions. Our laboratory, shared with the National Center for Regenerative Medicine and the CCCC, manufactures chimeric antigen receptor T cells, in addition to mesenchymal stromal cells, dendritic cells, natural killer cells, virus specific T cells, and others. We have three active genetic engineering studies in our portfolio.

Collaborative research is the present and the future of our division. We expect to continue to exceed and grow, nurturing young investigators and blending clinical care with clinical, translational and basic research.
Faculty lead and are involved with major University-wide infectious disease programs including the AIDS Clinical Trials Unit (ACTU), Center for AIDS Research (CFAR), Center for Global Health and Diseases, CWRU-Cleveland VAMC Center for Antimicrobial Resistance and Epidemiology Studies (Case VA CARES), Geriatric Research Education and Clinical Center (GRECC), Tuberculosis Research Unit (TBRU) and Visual Sciences Research Center (VSRC). Research funding for 2018-2019 totaled $25.4 million ($16.7 million CWRU, $4.2 million UH and $4.5 million VA [$1.6 VA Merit/CDA & $2.9 Foundation]) with the National Institutes of Health as a major source but is becoming increasingly diverse with funding from Center for Disease Control (CDC), Bill & Melinda Gates Foundation, Fogarty International Center, industry, foundations and philanthropy. Uganda remains a major focus for our international research with extensions to South Africa and South America. A national search for research faculty in HIV and TB is ongoing, and is coordinated with Case VA CARES, which is recruiting in the area of antimicrobial resistance. The STERIS Foundation, CFAR and Roe Green gift provide pilot funding for new collaborative research. The Division, with the Center for Global Health and Disease, continues its successful weekly Global Health and Infectious Diseases research seminar, now in its third year, supported by NIH and Fogarty training grants.

Clinical services continue to expand in the inpatient and outpatient arenas at the VA and in the UH system. In addition to HIV/AIDS care in the Special Immunology Unit supported by Ryan White funding, travel medicine and general Infectious Diseases, our services are expanding for solid organ and bone marrow transplants, increasing our expertise in infections of the immune compromised. New recruitment for antimicrobial stewardship at UH, and major national recognition for it at the VA have strengthened this important area. Infection control has become re-invigorated by new divisional faculty involvement at UH. The Roe Green Center for Travel Medicine and Vicki Tifft funding help support our international clinical activities.

Faculty remain active in second year medical school teaching in Block 5’s microbiology and infectious diseases section, graduate courses, supervising PhD and MD-PhD students in their labs, serving on thesis committees, and through clinical teaching to medical students, residents and fellows with continued high levels of positive feedback.
Under new leadership, the division pivots forward with a focus on population health and implementation science. This new focus is the result of a robust alignment with the Office of Clinical Transformation at University Hospitals. Clinical collaboration between UH Cleveland Medical Center and the Louis Stokes Cleveland Veterans Affairs Medical Center continues to be strong as does the longstanding relationship with the Centers for Dialysis Care (CDC). Members of the division play key roles in the kidney and pancreas transplant programs at UH Transplant Institute and the Onco-Nephrology Clinic, which launched in 2018. These areas focus on the care of patients who have cancer and kidney disease and have seen robust success and continued growth.

The division has provided major leadership for key NIH-sponsored multicenter research trials including the Systolic Blood Pressure Intervention Trial and the Chronic Renal Insufficiency Cohort Study. Other areas of research include measurement of uremic toxins and other factors that influence the progression of chronic kidney disease and studying the association between kidney and cardiovascular disease. UH Cleveland Medical Center is a leading participant in a multicenter consortium enrolling patients into the NIH’s Clinical Trial in Organ Transplant initiative. Mirela Dobre, MD, MPH, has received extramural funding from the NIH for the study of myocardial fibrosis in hypertensive adults.

The division’s members also hold prominent roles in scientific journals with Dr. Mahboob Rahman serving as Associate Editor of the Clinical Journal of the American Society of Nephrology and Dr. Titte Srinivas serving Associate Editor for Clinical Transplantation and on the Living Donor Committee of the United Network for Organ Sharing.

The division has a successful training program for clinical nephrology fellows and an NIH training grant for the training of physician scientists. We are also accredited by the American Society of Transplantation to train fellows in transplant nephrology. Our trainees benefit from both bench and translational opportunities in a multidisciplinary environment encompassing the departments of medicine, pathology, physiology and biophysics.

The ultimate goal of the division is to prepare tomorrow’s academic physicians, scientists and clinician-educators to continue our mission: To Heal, To Teach, To Discover.
“Breathing Better, Sleeping Well”. We strive to be a national leader in the delivery of exceptional-quality respiratory care to residents and visitors of northeast Ohio through our integrated clinical practice, disease-focused centers of excellence, innovative research, and professional education.

Under the leadership of Rodney J. Folz, MD, PhD, we have continued to develop and expand our respiratory care services offered at University Hospitals Cleveland Medical Center (UHCMC) and throughout University Hospitals’ community locations. It is our mission to greatly improve both lung and sleep health throughout the communities we serve.

Our new 20 bed medical ICU at UHCMC along with our exceptional multidisciplinary clinical programs remain the cornerstone of success for our division and provide a full range of services from the diagnosis and management of common respiratory and sleep conditions to state-of-the-art distinguishing technologies to treat the most complex cases. Our clinical expertise includes lung nodules evaluation, lung cancer, cystic fibrosis, chronic obstructive pulmonary disease, asthma, pulmonary hypertension, lung transplantation, simple and complex sleep disorders, pulmonary vascular disease, allergic lung disease, interstitial lung disease, pulmonary rehabilitation, bronchoscopy, interventional pulmonology and advanced pulmonary function testing.

Our highly successful, certified lung transplant program provides hope and promise to many of our sickest patients with various forms of advanced lung disease.

Our Division boasts a broad-based research enterprise with numerous active investigations in clinical, translational and basic research at UHCMC, the Louis Stokes VA Medical Center, and Case Western Reserve University. The impact of the division’s research programs can be seen various in publications and grant support. Major areas of research emphasis are in “Control of Breathing”, “Pulmonary Immunology and Inflammation”, “Neurotherapeutic Therapy for Sleep Disordered Breathing”, “Pulmonary Artery Hypertension and Acute Lung Injury and Hypoxemia”, “Early Diagnosis and Treatment of Sepsis”, “Asthma in Older Adults: Identifying Phenotypes and Factors Impacting Outcomes”, “Spinal Cord Injury and Respiratory Function”, and “Brainstem Inflammation and Sepsis”.

The Division maintains three clinical fellowship programs: Pulmonary/Critical Care, Sleep Medicine, and Allergy/Immunology. Our T32 training grant in Sleep Medicine Epidemiology and Neurobiology has been continuously funded for over 19 years. We have expanded the number of ACGME approved training slots in Pulmonary/Critical Care from 12 to 15. The philosophy of our training programs are to produce excellent clinicians trained in the art and science of medicine with a strong research component outfitted with all the tools necessary for them to succeed as leaders in academic and clinical settings.
DIVISION OF RHEUMATOLOGY

The Division of Rheumatology strives to offer state of the art treatment to patients with a variety of rheumatic diseases.

Education is one of the hallmarks of the division’s function, training six fellows in the current class. Furthermore, the division is involved in academic publications that include contributions from our fellows and faculty members.

Annually there is a contribution of 60,000 relative value units (RVUs) by rheumatologists from both UH community hospitals and UH Cleveland Medical Center. These two arms of rheumatology care for patients throughout the Northeast Ohio area served by the UH Health System. They care for diverse rheumatologic problems such as rheumatoid arthritis, osteoarthritis, and autoimmune conditions such as Lupus, Sjogren’s syndrome, and scleroderma.

The clinical activity of the Division has been moved to a newly constructed office at the UH Minoff Health Center at Chagrin Highlands. With the increased regulation and scrutiny over the use of scheduled drugs, we have been migrating our patients to a variety of biologic and infusible medicines. Allen Segal, DO, has been instrumental in developing our infusion center at Minoff Health Center and works with special pharmacy personnel who expertly navigate the insurance landscape to preauthorize these medications.

There has been further integration between the division and physicians in the UH community hospitals. Ogechi Muoh, DO, now participates in some of the academic activities of the division and was recently assigned as director of the David Satcher Diversity Center at Case Western Reserve University. Lawrence Kent, MD, is also planning to have joint activity in the division.

Our fellowship training continues successfully with six fellows selected from 180 applicants in recognized internal medicine programs throughout the country. The current shortage of trained specialists in rheumatology and the division’s excellent reputation continue to make our Fellowship Program highly sought after.

Scholarly activities included both faculty and fellows, publishing 11 papers in refereed Journals. The highlights of this research include; Red cell distribution width and ankylosing spondylitis (Askari, Mattar, Blumenthal, Anthony, and fellows class of 2019); Achieving sustained viral remission in patients with chronic HCV infection and cryoglobulinic vasculitis (Askari, Anthony, and Mattar).

Ongoing research includes regulation of the human chondrocyte gene activity by activation of the Janus kinase/signal transducer (Jak/Stat) Pathway (Malemud).
VETERANS AFFAIRS

Medical Service at the Cleveland VA strives to advance the clinical mission while excelling in the training of the next generation of physician leaders and scientists.

The General Internal Medicine (GIM) Section and Primary Care and the Transforming Outpatient Primary Care Center of Excellence define the standards in ambulatory medicine. These enterprises are model programs for academic medical centers nationally.

Dr. Lori Leonard, the new leader of Women's Health, is expanding the scope of this specialty on a regional and national level. The Acute Medicine Section serves as the best model of inpatient care in the nation having recently achieved a Level 1 Geriatric Emergency Department accreditation by the American College of Emergency Physicians.

Our Cardiology services are nationally recognized in Left Ventricular Assist Devices as destination therapy in Advanced Heart Failure and for the new Trans-catheter Aortic Valve Replacement Program. Nationally funded programs continue to advance the frontiers of knowledge in Pulmonary and Sleep disorders. Our Sleep Section has more than doubled in size and utilizes innovative telemedicine approaches.

Physicians in the Gastroenterology Section are leading the country in developing evidence-based guidelines and clinical trials in the screening and treatment of Hepatitis C patients. Dr. Ashley Faulx serves on the American Gastroenterology Board of Governors for our region and Dr. Andrew Blum received a Case GI SPORE (Specialized Program on Research Excellence) Career Enhancement Award.

Research in the Rheumatology Section addresses patient-centered care of the immune response in the elderly. In Endocrinology, our researchers lead the interdisciplinary development of new testing for diabetes. Additionally in Nephrology, Dr. Niraj Desai works closely with Dr. Mahboob Rahman in the Cohort Study of Chronic Renal Insufficiency, an NIH study.

The Infectious Disease Section is a nationally recognized leader in management of C. difficile and methicillin-resistant Staphylococcus aureus. This year, Dr. Usha Stiefel was elected to Fellowship in the Infectious Diseases Society of America and was awarded a major grant with Dr. Ukwen Akpoji implementing a Center of Excellence in Antimicrobial Stewardship. Recently, Dr. Puja van Epps was awarded a VA national grant to form a Center of Excellence/regional hub for HIV care and prevention.

The Hematology and Oncology Section is a nationally recognized leader in the implementation of quality programs that optimizes timely diagnosis and treatment of patients with cancer and possesses world-class thrombosis expertise under the direction of Dr. Evi Stavrou.
In the past year, recognition of the efficacy and influence of the Harrington platform led to the launch of two exciting initiatives, which will enable the institute to direct powerful resources toward new areas of unmet therapeutic need:

+A first-in-kind relationship with the University of Oxford, that aligns resources and expertise to improve treatment options globally for patients with rare diseases. The global Oxford-Harrington Rare Disease Centre supports the development of new treatments for rare diseases, one of humankind’s most significant and unaddressed health challenges.

+A new partnership with Morgan Stanley Global Impact Funding Trust (GIFT) is transforming the way philanthropy supports the development of new medicines. Morgan Stanley GIFT Cures powered by Harrington Discovery Institute is Morgan Stanley’s first special interest program for philanthropists seeking to amplify their impact by accelerating cures for multiple diseases.

Harrington Discovery Institute continues to work with Takeda Pharmaceuticals—its first pharma industry partner—to advance breakthrough research into treatments for rare diseases through the Harrington Rare Disease Scholar program. In 2019, the institute welcomed its seventh class of Harrington Scholar-Innovators, who are inventive physician-scientists from institutions across the U.S. whose research demonstrates innovation, creativity and the potential to impact standards of care in medicine. In addition, the institute has been enriched through recruitment of outstanding physician-scientists Andrew Pieper and Atul Chopra.

To date, Harrington Discovery Institute has assessed more than 2,100 drug development projects from 210 institutions and funded 111 potential drugs-in-the-making at 50 institutions. Additionally, The Harrington Project has supported the launch of 24 companies, the licensing of six programs to large pharmaceutical companies, and the movement of seven drugs into clinical trials. Just as important as the accomplishments to date, the institute is prepared for the future with an operational framework that has been designed to support the changes that lie ahead.

We are excited to continue to evolve our model and expand our reach, while remaining true to The Harrington Project mission of translating promising discoveries into medicines that benefit society.
While engaging in their professional development our residents continue to provide outstanding care to patients at UH and the Cleveland VA. Below are select accomplishments from AY 18-19.

+ The innovative Leadership in Medical Education Pathway, led by Charles LoPresti, MD, graduated its third class of residents. Several graduates were hired by other Internal Medicine residencies to start similar programs.

+ Dr. Salata continues the tradition of ‘midnight rounds,’ organizing monthly Chairman teaching rounds for students, interns and residents on call in the hospital in the evening.

+ Fourteen 2018 residency graduates will be staying at UH/VA for fellowship or faculty positions and eight graduating fellows are joining the University Hospitals Health System or VA staff.

+ The Residency and Clerkship Leadership group presented nine posters and workshops at national meetings devoted to resident and student education, and continue to maintain a high profile nationally.

+ In April 2019, Dr. Armitage received the Dema Daley Founders Award from the Academic Alliance for Internal Medicine (AAIM). The Dema C. Daley Founders Award honors a member of the internal medicine community recognized nationally as an educator, innovator, and leader.

The Department of Medicine sponsored fellowships in thirteen subspecialties. All subspecialty programs received full accreditation from the ACGME in 2018.

The continuing education component of the educational program remains strong. As examples, weekly Grand Rounds and Morbidity & Mortality Conferences provide outstanding education for students, residents and faculty while also providing type one CME for faculty. Grand Rounds presentations are also available on the Department of Medicine web site. CME credit for Department of Medicine programs can now be claimed on line or by a phone app.

The Department of Medicine is prepared to meet new health care challenges through the strength and balance provided by the excellence and expertise of our faculty in fulfilling our mission of exemplary medical care, development and application of new knowledge as well as superior training of health care professionals.
This represents more than 40 percent of total faculty teaching time at Case Western Reserve University School of Medicine. During the 2018-2019 academic year, our academic endeavors extended to numerous medical students.

+ 94 Case Western Reserve medical students completed their 3rd year Internal Medicine (IM) clerkship at University Hospital (UH) Cleveland Medical Center and The Louis Stokes Cleveland Veteran’s Administration (VA) Medical Center.
+ 3rd year Internal Medicine clerkship program at UH and the VA continues to be one of the highest overall rated clerkship experiences for students.
+ Perfect scores of 5 from Case medical students for the UHCMC house staff teaching efforts during the 3rd year Internal Medicine clerkship this past year.
+ 94 medical students completed a 4th year acting Internship elective rotation at UH and the VA.
+ 45% of Case Medical students mentored by UHCMC and VA faculty for their required research thesis.
+ More than 150 letters submitted on behalf of our Case medical students in support of their residency applications.

Medical students are involved with UH and VA faculty in basic research at many touchpoints throughout their medical school education. This includes during the summer after their first year of medical school, the third year of medical school required research thesis work, and the doctoral candidate research by the Medical Science Training Program (MSTP) students. Eleven Case medical students had clinical vignette abstracts from the IM clerkship rotation accepted for poster presentation at the Ohio/Air Force American College of Physicians (ACP) Chapter’s Scientific Meeting this fall. Case students had their IM clerkship abstract selected for oral presentation at the National ACP meeting and at the Society of General Internal Medicine national meeting. Five CWRU students published IM clerkship case vignettes over the past year in peer reviewed medical journals.

The Department of Medicine sponsors and advises the Case Western Reserve Medical Student Internal Medicine Interest Group, which hosts monthly events during the academic year. These events provide venues for students to interact with residents, fellows and attending physicians in the Department to learn about research, clinical training and potential careers in Internal Medicine starting from their first year of medical school. Twenty percent of this year’s graduating Case Western Reserve medical school class chose careers in Internal Medicine.

The Department of Medicine’s commitment to scholarship along with its consistent excellence in patient care and research forms an outstanding platform for teaching future health care professionals.
The Department of Medicine’s research effort remains strong. Awards to Case Western Reserve University, Louis Stokes Cleveland VA Medical Center and University Hospitals Clinical Research Center totaled over $65 million for 2018-2019 ($39 CWRU [$29 direct/$9.9 indirect], $20.4 UH and $5.7 VA [$2.2 VA Merit/CDA & $3.5 VA Foundation]).

Our 10th annual Research Day was held in May. Eight-two posters were displayed from residents, fellows, graduate and medical students, and postdoctoral fellows. The poster session was preceded by three excellent plenary talks given by Anna May, MD, from the Pulmonary, Critical Care and Sleep Division; Atul Chopra, MD, PhD, from the Harrington Institute; and David Canaday, MD, from the Division of Infectious Diseases & HIV Medicine.

Five intramural Team Science initiatives received seed funds from the Department for the purpose of developing data for large grant submissions across disciplines. This year, Departmental funds were matched by the UH Clinical Research Center.

The awardees are:

- Lalitha Nayak, MD, David Zidar, MD, PhD, and Jeffrey Hardacre, MD: Examining the myeloid transcriptome as a predictor of pancreatic cancer progression and cancer-associated thrombosis
- Leland Metheny, MD, Jeffry Katz, MD, and Mahmoud Ghannoum, PhD: Clinical Trial of Fecal Microbiota Transplantation For The Treatment Of Gastro-Intestinal Acute Graft Versus Host Disease
- Folashade Otegbeye, MD, and Howard Meyerson, MD: Qualifying the manufacturing of a donor lymphocyte product depleted of TCR-αβ T cells and CD19+ B cells for early prophylactic infusion following allogeneic stem transplantation in patients with hematologic malignancies
- Reshmi Parameswaran, PhD, and Quintin Pan, PhD: Reversing NK cell dysfunction in Head and neck squamous cell carcinoma
- Richard Lee, MD, and Sharon Stein, MD: A Feasibility Study of Acupuncture for the Treatment of Postoperative Ileus After Gastrointestinal Surgery

The Harrington Physician-Scientist Pathway recruited two new residents. This track provides residents aspiring to research careers direct admission to research training in the subspecialty of their choice after two years of training in general internal medicine. Aaron Proweller, MD, PhD, and Keith Armitage, MD, continue to lead this program, now in its 5th year.

The Department of Medicine has the largest research portfolio at UH. The change in affiliation between UHCMC and CWRU has invigorated the UH Clinical Research Center under the leadership of Grace McComsey, MD, and Mukesh Jain, MD, and this will further strengthen the collaborative clinical and basic biomedical research focus of the Department. This collegial atmosphere puts our faculty members at the forefront of discovery and our dedication to training research leaders helps shape the intellectual discourse of tomorrow.
The Department of Medicine remains committed to developing faculty and trainee careers and to foster diversity and inclusivity in the Department. Broadening access to professional development programming for busy faculty and supporting faculty through the Promotions and Tenure process have been recent priorities.

In the past year:

+ Seminars on Medical Student Teaching, on the use of Case Reports in Medical Education, and on Resident Mistreatment have focused on enhancing the educational aspect of our mission for faculty and trainees in the past year. Physician Wellness and High-Value Care have also been featured, and a special program focusing on humanism in medicine—undertaken in collaboration with the Women Faculty School of Medicine (WFSOM) organization and featuring Visiting Professor Dr. Rana Awdish, author of the bestselling memoir “In Shock,”—was implemented. Finally, the 18th annual Jack Berman Visiting Lecturer in Oncology conducted a concurrent workshop, Inspiring Women, for women faculty and trainees, in partnership with the WFSOM.

+ The Department of Medicine’s Committee on Appointments, Promotions and Tenure (CAPT) has altered its structure to be more broadly reflective of Departmental faculty composition. Additionally, a “CV Review” process, by which faculty considering a senior-level promotion may submit their CV for feedback and suggestions prior to an official CAPT Review, has been implemented. Increased availability of key CAPT members to personally mentor individual faculty through the Promotions and Tenure process has also taken place. As a result, 19 faculty members—12 of them women faculty—achieved promotion to Associate Professor or Professor in 2018-2019. To date, this is the largest and most diverse number of Senior-Level Promotions in one year in the history of the Department of Medicine at University Hospitals and the Cleveland VAMC.

+ Initiatives for the next academic year will include building upon the successes above with respect to programming and promotions. Additionally, as Departmental infrastructure expands, re-introduction of a weekly faculty newsletter to improve access to relevant activities, and electronic toolkits related to career development topics, are planned. Finally, ongoing evaluation and fostering of mentoring activities within the Department will occur. Through these initiatives, as well as through increased collaborations with the Offices of Faculty Development at University Hospitals and at the School of Medicine, the Department will strive to ensure that all faculty and trainees are given the tools that they need to excel.
We will continue to enhance the quality of care to our patients, improve interdisciplinary coordination and collaboration, and improve utilization of our resources. Focusing on these concepts will contribute to the goal of improved patient satisfaction and clinical outcomes for our patient population. The principle goals of the department administration are to assure that our faculty are successful in our tripartite mission of the organization encompassing clinical expertise, research and education. In addition, the administrative team will continue to develop creative solutions to the complex operational challenges we face as a department and organization.

Academic year 2018–2019 increased its growth in net revenue by 6% over the prior academic year. Physicians continued to grow their work Relative Value Units (wRVU) percentiles as well, demonstrating increased patient volume, timely and accurate charge capture and the delivery of quality care to our patient population.

In October of 2018, the department fully transitioned to the Soarian scheduling and charge capture platform creating a seamless process in the registration, scheduling and billing processes for our patients.

Physician engagement in 2019 improved 9% overall which is a reflection of the continued commitment, trust and process improvement that the Chairman and Division leaders focused on this past year. Through thoughtful dialogue and transparency, the department will continue to work alongside faculty to further increase our engagement scores.

As the department moves into the next academic year, our strategic objectives for 2020 will continue to be focused on increasing patient access, patient experience and program development in several divisions in the department. Continued recruitment of clinical and scientific leaders will continue as we grow our service lines at Cleveland Medical Center and in the community.
Several notable awards include:

- Keith B. Armitage, MD, MACP, Director of the Internal Medicine Residency Training Program for the past 26 years, was awarded Mastership in the American College of Physicians for his outstanding and extraordinary career accomplishments.

- Sanjay Rajagopalan, MD, will lead one of University Hospitals’ new Centers of Excellence, the Center for Integrated and Novel Approaches in Vascular-Metabolic Disease (CINEMA), which will focus on better understanding and treatment of cardiac and vascular complications of Type 2 diabetes.

- Dr. Mukesh K. Jain, recently appointed Chief Academic Officer of University Hospitals, received a $9.6 million dollar grant for Alzheimer’s research from the American Heart Association-Allen Initiative in Brain Health and Cognitive Impairment.

- Robert Bonomo, MD, Chief of Medical Service at the Louis Stokes Cleveland VA Medical Center was named a Distinguished University Professor at Case Western Reserve University.

In Dr. Salata’s third year as Chair of the Department of Medicine, faculty recruitment has once again been a top priority. Both Dr. Salata and Departmental staff have been focused on searching for quality physicians to join the Department’s ranks. Recruitments of note this year are Titte R. Srinivas, MD, FAST, who joins us as the Chief of the Division of Nephrology & Hypertension and Marcos de Lima, MD, who accepted the role of Chief for the Division of Hematology & Oncology.

Additionally, with Dr. Salata’s renewed emphasis on our academic activities, extramural research has seen increases in funding from public and private sources for our basic, translational, and clinical research activities. These activities are facilitated by the University Hospitals Clinical Research Center and our affiliations with the Louis Stokes Cleveland Veteran’s Affairs Medical Center and the Case Western Reserve University’s School of Medicine.

Internally, the Department of Medicine continues to enhance collaborative research efforts through the Department of Medicine Team Science Challenge. In addition, the Annual Department of Medicine Research Day continues to highlight the talents of our residents, fellows and post-doctoral trainees.

The primary goal of our department administration is to facilitate the success of our faculty. In pursuit of this objective, we remain focused on increasing our extramural research footprint, continuing our intramural and team-based support, assisting in recruiting exemplary faculty and leadership, and continuing to support the Department’s exceptional educational programs.
132
TOTAL NUMBER
OF RESIDENTS

281
NUMBER OF
FULL-TIME FACULTY

125,783
UHMG-BASED AMBULATORY PHYSICIAN SERVICE ENCOUNTERS

$39.3M
NET PATIENT
SERVICES REVENUE

107
TOTAL NUMBER
OF CLINICAL FELLOWS
2.4 to 1
RATIO OF CLINICIAN-EDUCATORS TO PHYSICIAN-SCIENTISTS

756,741
TOTAL WORK RELATIVE VALUE UNITS

$294.6M
ANNUAL STEWARDSHIP RESPONSIBILITY

346
DEPARTMENT-BASED IRB REVIEWS

91
PRINCIPAL AND CO-PRINCIPLE INVESTIGATORS
LEADERSHIP

ROBERT SALATA, MD, FACP, FIDSA
STERIS Chair of Excellence in Medicine
Chair, Department of Medicine
Physician-in-Chief, University Hospitals
Master Clinician in Infectious Diseases
UH Cleveland Medical Center
Professor of Medicine
CWRU School of Medicine

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MUKESH K. JAIN, MD, FAHA
Chief Academic Officer, University Hospitals Health System
Chief Scientific Officer, Harrington Discovery Institute
Chief Research Officer, UH Harrington Heart & Vascular Institute
Ellery Sedwick Jr. Chair and Distinguished Scientist in Cardiovascular Research
Vice Dean for Academic Affairs and Medical Sciences
Professor of Medicine, CWRU School of Medicine

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