

ANNUAL
**RESEARCH
REPORT**

ACADEMIC YEAR
2018-2019

**University
of Cincinnati**

**Department of
INTERNAL
MEDICINE**

DEPARTMENT OF INTERNAL MEDICINE

TOTAL GRANTS

145 19 percent are held by primary investigators with R01 awards

TOTAL FUNDING

\$89.0 million

OVER \$8.8 million
in NEW AWARDS IN FY2019

CLINICAL TRIAL REVENUE (FY2019)

\$5.7 million

INCREASE IN TOTAL FUNDING (from FY2018 to FY2019)

2.5%

SUCCESS RECEIVING FUNDING (FY2019)

29%

IMAGE, FRONT COVER:

"Reflections"

The soft hues of the morning sun reflect some of the beautiful buildings on East Campus on the glass exterior of the beautiful CARE/Crawley building. Photo taken with an iPhoneX.

2019 Image Gallery awardee, Images in Medicine

CREDIT: **Ameet Chimote, PhD**, Division of Nephrology/Kidney CARE

BUILDING AND FOSTERING RESEARCH: STRENGTHENING OUR FOUNDATION

Department of Internal Medicine

ANNUAL RESEARCH REPORT

ACADEMIC YEAR
2018-2019

Welcome From the Chair3

Since 2011, our strategic plan in the Department of Internal Medicine has prioritized our research mission.

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SUPPORTING AND
FOSTERING RESEARCH
THROUGH FUNDED
INITIATIVES AND
FORMAL PROGRAMS

Welcome to the 2018-2019 edition of the Department of Internal Medicine's (DOIM) annual research report! In this report you will have the opportunity to read about our overall accomplishments as a department and some of the key achievements and successful collaborations of the nine divisions and faculty members, trainees and staff. We have set the bar high for our research mission of discovery, innovation, collaboration and impact. To assist our researchers, we have taken steps to promote and support research internally. We have carefully done so in an aligned fashion with our College of Medicine, Cincinnati Veterans Administration Medical Center, Cincinnati Children's Hospital and the UC Health system.

As we have described previously, since June 2011, our strategic plan and vision have guided our steps towards accomplishing our mission in the nine divisions of the Department. By every measure we have succeeded in "becoming the leader in improving the health of our local and global community based upon our tripartite missions." Our total research holdings are now over \$89 million dollars. This remains at an all-time high year-to-year and leads any other geographic department in the College of Medicine. This is at least due to our Academic Research Services (ARS) construct, our internal medicine awards program for junior and senior investigators, our bridge funding process and our IM-STARS (scholarly training for academic research) program, along with RNAHR 38 funding currently under consideration.

At the end of FY 2019 we held a total of 145 grants. Approximately 19% percent of those were held by primary investigators with R01 awards. There were 44 new grants awarded in fiscal year 19 amounting to a direct award amount of \$8.8 million. This data does not include the \$5.6 million dollars in clinical trial revenue nor the research funding from our Cincinnati VAMC.

As always, we appreciate the commitment, work and service of all the faculty, investigators, researchers, trainees and staff engaging in basic, clinical, translational and healthcare outcomes research.

Our research initiatives have been successful in large part based upon our fiscal and executive governance model in the department. This is established and enduring. Thus, we are well served for future years for continued success with our research mission. Our associate chairs for basic and translational research, Carl Fichtenbaum, MD, and Sakthivel Sadayappan, PhD, MBA, continue to demonstrate extremely capable and innovative leadership. We are most grateful to them and all involved with our research mission. Most importantly we are extremely grateful to our ARS group who serve to both collaborate with and assist our scientists in their discovery work.

Sincerely,

GREGORY ROUAN, MD

CHAIR, DEPARTMENT OF INTERNAL MEDICINE

Our total research holdings remain at an all-time high year-to-year and lead any other geographic department in the College of Medicine.



CARL FICHTENBAUM, MD

ASSOCIATE CHAIR FOR TRANSLATIONAL RESEARCH

How do we promote success and improve the culture of research in the Department of Internal Medicine?

Envisioning success requires the proper support and environment to allow individuals to thrive. Researchers in the DOIM are constantly seeking to create advances that help people live better lives. These talented individuals need a supportive environment that fosters their creativity and encourages them to take risks. The research environment consists of the physical, psychological, intellectual, economic and cultural spheres that intersect to form the fabric of discovery. We must attend to each of these spheres to create the proper environment for our faculty to grow.

The DOIM is committed to providing the necessary space and equipment that allow productive research. RISE-UC (*See related story in this report*) is the paradigm we have chosen to move our research mission forward. We must celebrate each success in small but important ways. This is why we announce the contributions that our faculty make in our *Internal View* newsletter. This is why we produce our annual research report highlighting the lives and successes of our research faculty and staff. As we look toward the next five years, we must foster a culture of collaborative research and team science. We must engage our researchers in the kinds of conversations that bring about change and improvement in their professional and personal lives. We must listen. We must discuss. We should debate. We should identify better ways to communicate. And then, we must act to bring the resources and support required to build our research mission.

Our specific goals are to enhance our research portfolio in clinical, translational and laboratory based scientific research. We need to grow our faculty and staff and increase our annual grant holdings by \$2 million over the next 2 years. This will take investment from the College, the Department and the Divisions. This will require innovation and effort by our faculty and staff. This is why we are investing more in our trainees and created a regulatory operation within ARS. Together, this is a goal we can achieve. ●

As we look toward the next five years, we must foster a culture of collaborative research and team science. We must listen. We must discuss. And then, we must act to bring the resources and support required to build our research mission.

SAKTHIVEL SADAYAPPAN, PHD, MBA

ASSOCIATE CHAIR FOR BASIC RESEARCH

How has the Department promoted success and improved research culture at UC?

Research is one of the major pillars of any public academic institution. The Department is committed to advancing our understanding of the basic biology and etiology of human disease. Internal Medicine has been and continues to be a leader in basic and translational research. To accomplish this, we offer research training and workshops, travel awards, seminars, conferences, and opportunities for collaborations inside and outside the department. Consequently, we remain strong in cancer, heart failure, diabetes and obesity, rare lung diseases, digestive diseases, infectious diseases, and sickle cell studies. We have several long standing and well-established industry-sponsored research programs in place to bridge the gap between basic and translational research studies.

Describe how the Department has supported faculty researcher, staff, and trainees over the past year.

The Department has established various mechanisms to nurture trainees, fellows, and early career scientists, as well as junior, mid-career, and established faculty members to promote multidisciplinary research at all institutional levels. It funds early career scientists, trainees, and junior faculty through biannual intramural funding opportunities, providing over \$200,000 in awards each year. These efforts have increased research output and the number of quality publications. A biostatistician is contracted to assist researchers and trainees with developing winning research strategies, study design and power calculations, statistical support, and more. The Academic Research Services (ARS) office is staffed to provide full service support for preparing, editing, and submitting basic and clinical research grant applications and start-up and maintenance of IRB protocols for translational and clinical studies. The ARS office also assists researchers and trainees in finding research funding and provides education on writing winning proposals, mentorship, and collaboration. They assisted with over 30 biosketches and 20 individual development plans (IDPs) last year. This service provides investigators with an opportunity to focus on their research studies, rather than administrative logistics. Additionally, the department's annual research symposium offers opportunities for collaboration, networking, and mentoring through poster sessions, round tables, and meet and greet activities. Our annual research symposium is just one example of the many programs that are offered to foster the research careers of our faculty researchers and trainees. ●



As an associate chair of basic research for the Department, my responsibilities are to strengthen basic and translational research by advancing facilities and technologies, to encourage collaboration and teamwork to foster innovation and discovery and to advance the understanding of human biology and developing therapeutic strategies.

Research Initiative Supporting Excellence-UC (RISE-UC)

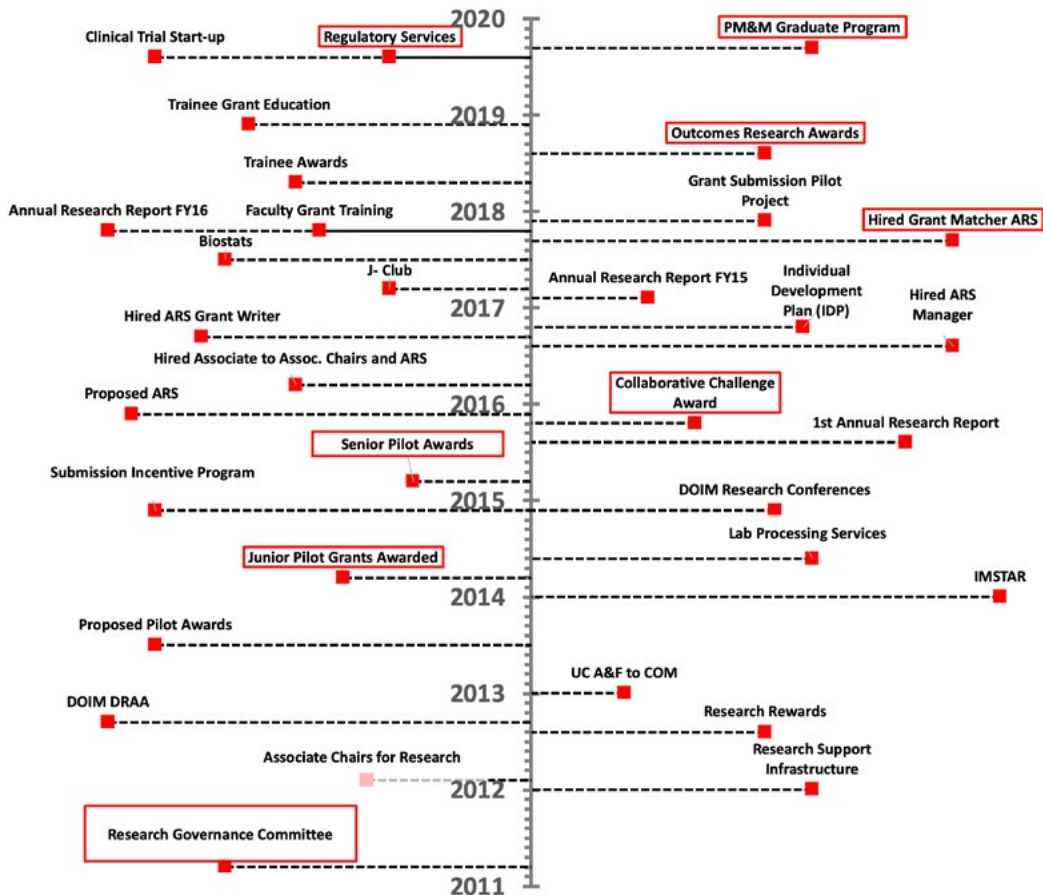
RISE-UC

“The discovery of new knowledge requires a supportive environment that encourages researchers to take chances.”

CARL FICHTENBAUM, MD

The DOIM created the Research Initiative Supporting Excellence-UC (RISE-UC) in 2012 to foster the development and success of our researchers. By listening to faculty needs, we created a platform of people and programs to support researchers and trainees and to assist them in reaching their research career goals. RISE-UC heralded the development of the Academic Research Service (ARS) in 2016.

Over the past year we supported research through funded initiatives and formal programs with intramural funding, providing seed money for garnering external awards, preliminary data, presentations and publications to foster innovation and impact. Through the ARS and DOIM leadership these seed-grants provide funding for innovative ideas with a **10:1 return on investment.** ●



Impact

IMPACT

Year at a Glance

Year at a Glance

JULY 2018

George Deepe, MD, Carl Fichtenbaum, MD, Christy Holland, PhD, and Frank McCormack, MD, were recognized by the CoM Office of Research for **each holding more than \$5 million in UC-based awards.**



Charuhas Thakar, MD **presented** Future of AKI Research **at NIDDK**



Mark Eckman, MD, was **interviewed by US News and World Report, WCPO and other media** outlets about his latest findings suggesting hepatitis C-infected kidneys may be a safe option for HCV-infected dialysis patients, based on a paper with **Kenneth Sherman, MD, PhD,** in *Annals of Medicine*.



Zhongyun Dong, MD, PhD, received a **two-year grant** of \$383,398 from the National Cancer Institute to support the research project "Preclinical Safety and Efficacy Assessment of a Novel PCNA Inhibitor for Prostate Cancer Therapy."



Silvi Shah, MD, was **interviewed by Renal & Neurology News** for her research on how women are less likely than men and Hispanics are less likely than whites to have arteriovenous access for hemodialysis.



Neha Reddy Sanagala, PhD candidate, received a \$50,000 annual **grant for two years** for the project "Critical Health Assessment & Outcomes Study/ Score in the Cardiovascular ICU."



Carl Fichtenbaum, MD, was recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external research grants of \$100,000 per year or more for the project "ACTG Core Funds."



Michael Borchers, PhD, was recognized by the CoM Office of Research in the **Gallery of Awardees**



for receiving external research grants of \$100,000 per year or more for the project "Natural Killer Cell Phenotype and Function in Lymphangioleiomyomatosis."

Atsuo Sasaki, PhD, was awarded the 2018 **Research Innovation Grant** in the value of \$30,000 for his project "Targeting the metabolic Vulnerability of energy Metabolism in IDH Mutated Glioma."



Wenhai Shao, PhD, was awarded the 2018 **Research Innovation Grant** in the value of \$30,000 for his project "A Therapeutic Role of R428 in Glomerulonephritis."



AUGUST 2018

Xiaoyang Qi, PhD, John Morris, MD, and Trisha Wise-Draper, MD, PhD, received prominent coverage in a **front-page Cincinnati Enquirer story** about the use of an experimental drug known as BXQ-350 at the UC Barrett Center.



SEPTEMBER 2018

Shailendra Patel, MD, received a **two-year NIH grant** of \$249,435 for the research project "Role of Cholesterol Biosynthesis in Development."



Jane Yu, PhD, received a \$10,000 Patient Benefit Award **Grant from the LAM Foundation** for the proposal "Single-Cell-RNA Sequencing for Identifying Differential Responses to Sirolimus Therapy in LAM."



Manoocher Soleimani, MD, was **corresponding author for the research article** "Thiazide Therapy in Chronic Kidney Disease: Renal and Extra Renal Targets" published in *Current Drug Metabolism*.



Jason Winnick, PhD, was invited to serve on an *ad hoc* **subcommittee to assist in program development for the American Diabetes Association's** Scientific Sessions Meeting June 7-11, 2019, in San Francisco. Winnick was also invited by JDRF, a leading global organization focused on Type 1 diabetes research, to join the organization's **review panel** for the FY19 Artificial Pancreas and Metabolic Control Training Awards Review.



Carol Mercer, PhD, lead a team of researchers who have **discovered that cell metabolism plays an important role** in the ability of cells to start a survival program called autophagy, an unwanted side effect of some anti-cancer drugs that helps some tumor cells dodge treatment and eventually regrow into new tumors. The research was published in *Cell Reports*.



Melanie Cushion, PhD, **published** the research article "A Quantitative Systems Pharmacology (QSP) Model for Pneumocystis Treatment in Mice" in the scholarly journal *BMC Systems Biology*.



Ameet Chimote, PhD, was featured by ThermoFisher Scientific in its **Gibco Cell Culture Heroes Spotlight series** for the month of September, for his impactful work in the field of cancer research, presenting a webinar on his latest research "Defects in Potassium Channels Contribute to Reduced Immune Surveillance in Cancers."



Mark Eckman, MD, was **interviewed** by *MedPage Today* for his research on the cost effectiveness of hepatitis C screening for U.S. adults 18 years and older versus adults deemed among the Baby Boomer generation.



Phillip Owens, PhD, was recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external grants of \$100,000/year or more in direct costs for his project, "The Role of Protease-activated Receptor 2 in Atherosclerosis."



George Deepe, MD, was recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external grants of \$100,000/year or more in direct costs for his project, "GM-CSF-Induced Metal Sequestration and *Histoplasma*."



Zhongyun Dong, MD, PhD, was recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external grants of \$100,000/year or more in direct costs for his project, "Preclinical Safety and Efficacy Assessment of a Novel PCNA Inhibitor for Prostate Cancer Therapy."



IMPACT

Year at a Glance

OCTOBER 2018

Recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external research grants of \$100,000 per year or more are



Joseph Palascak, MD, for his project, "Hemophilia Foundation of Michigan Sub Award," **Kristin Hudock, MD**, for her project "CLOVERS: Crystalloid Liberal or Vasopressors Early Resuscitation in Sepsis" and **Melanie Cushion, PhD**, for her project "The Role of Sex in the Life Cycle of Pneumocystis."

Sakthivel Sadayappan, PhD, MBA, was named the **new Associate Chair for Basic Research** in the department. His appointment was effective Jan. 1, 2019.



Eejung Kim, MD, **won the poster competition** (basic research category) in the Ohio American College of Physicians annual meeting for her research project, "Comprehensive Look Up Table of KRAS Through Saturation Mutagenesis and Pooled Transformation Assay."



Mark Eckman, MD, was **quoted in Specialty Pharmacy Times**, discussing his research which recommends universal screening of adults 18 years of age and older for hepatitis C.



NOVEMBER 2018

Christy Holland, PhD, was recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external grants awards of \$100,000 per year or more.



Gregory W. Rouan, MD, Chair, was recommended for **Invited Fellowship in the Royal College of Physicians**, London, England.



Daniel Schauer, MD, was **interviewed by Reuters** for a story about a recent study suggesting older women who lose weight may have a lower risk of developing invasive breast cancer than those who maintain or gain weight.



Jack Rubinstein, MD, was **interviewed by WVXU-FM**, 91.7 about his research on the potential cardiovascular benefits of wearing tefillin, a tight leather band strapped around the arm and worn during 30 minutes of prayer primarily by men in the Jewish community.



DECEMBER 2018

Michael Borchers, PhD, received a **four-year grant** of \$1 million in direct costs from the National Heart, Lung and Blood Institute to study the research project "Natural Killer Cell Functions in Lymphangioleiomyomatosis."



Dylan Steen, MD, was quoted **discussing his research with the SuperWIN project** in a web story published by the UC Office of Research.

Trisha Wise-Draper, MD, PhD, was **interviewed by WKRC-TV, Local 12** for a story about a new experimental patch to treat head and neck cancer.



Deeptankar DeMazumder, MD, PhD, **published an editorial** in *Circulation Research* titled "The Path of an Early Career Physician and Scientist in Cardiac Electrophysiology."



Veronica Indihar, MD, was **awarded a grant** of \$26,260 in direct costs from the Cystic Fibrosis Foundation for the research project "TDN Principal Investigator Projected Effort (PIPE)."

Kenneth Sherman, MD, PhD, was **quoted in *Medical News Today*** discussing his research on a gene that may hold the key to new therapeutic approaches to tackling liver scarring in HIV patients co-infected with hepatitis C.



JANUARY 2019

Lisa Green, PhD candidate and **Heather Evans, PhD**, postdoctoral fellow each received awards of \$5,000 as initial recipients of the **Trainee Grant Award** offered by the DOIM.



Heather Evans, PhD, postdoctoral fellow, also received a \$1,250 **Travel Award** from the Department of Internal Medicine.

Mark Eckman, MD, was a co-author on the study "Effect of Variation in Published Stroke Rates on the Net Clinical Benefit of Anticoagulation for Atrial Fibrillation" **published in the *Annals of Internal Medicine***.



Research from **Jack Rubinstein, MD**, on the possible cardiovascular benefits of wearing tefilin, was **cited among the top stories** of 2018 chosen by the University of Cincinnati and Medical Xpress medical and health news service.



Nishant Gupta, MD, was invited to **join the editorial board of *CHEST***, a peer-reviewed scholarly journal of the American College of Chest Physicians.



Melanie Cushion, PhD, received a **four-year grant of \$1.2 million** in direct costs for the research project "The Role of Sex in the Life Cycle and Transmission of Pneumocystis."



Robert Cohen, MD, was recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external research grants of \$100,000 per year or more for the research "Glycemia Reduction Approaches in Diabetes: A Comparative Effectiveness Study."



Hassane Amlal, PhD, was recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external research grants of \$100,000 per year or more for the research "Mechanisms of Adenine-induced Fluid Loss in the Kidney."



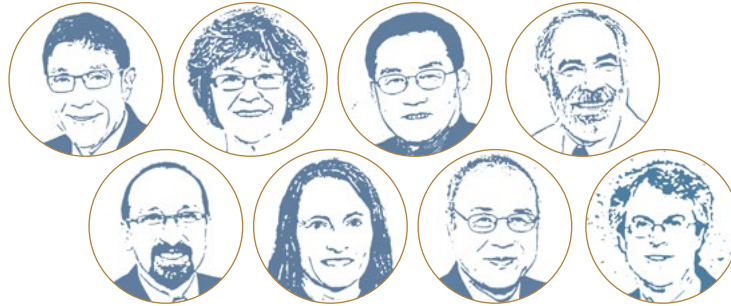
Pamposh Kaul, MD, was recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external research grants of \$100,000 per year or more for the research, "HIV Training for Professionals and Consumers-UC."



MARCH 2019

Internal Medicine faculty **honored for securing patents** at the University's inaugural Patent Recognition Awards at the 1819 Innovation Hub:
Jonathan Bernstein, MD, professor
Laura Conforti, PhD, associate professor
Zhongyun Dong, MD, PhD, professor

Fred Finkelman, MD, professor emeritus
Marat Khodoun, PhD, assistant professor
Suzanne Morris, PhD, associate professor
Xiaoyang Qi, PhD, professor
William Ridgway, MD, professor



Web of Science Most-Cited List Includes Two Internal Medicine Researchers

The Web of Science Group released its annual list of Highly Cited Researchers in November. The list identifies scientists and social scientists demonstrating significant research influence among their peers based on their ranking in the top 1% for publication citations.

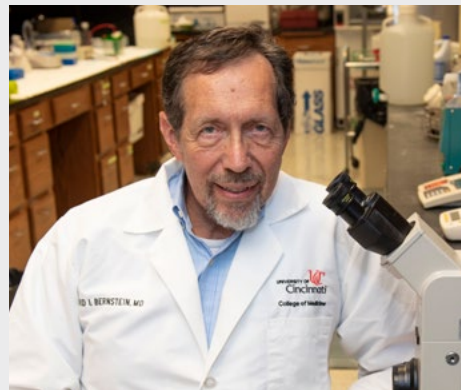
The methodology draws on the data and analysis performed by bibliometric experts from the Institute for Scientific Information at the Web of Science Group. Says David Pendlebury, senior citation analyst at the Institute for Scientific Information, "The Highly Cited Researchers list contributes to the identification of that small fraction of the researcher population that significantly extends the frontiers of knowledge. These researchers create gains for society, innovation and knowledge that make the world healthier, richer, more sustainable and more secure."

IM's Highly Cited Researchers in the 2019 list are:

- **Richard C. Becker, MD**, Mabel Stonehill Endowed Professor of Medicine, College of Medicine; Chief, Division of Cardiovascular Health and Disease; Director and Physician-in-chief, UC Heart, Lung and Vascular Institute; Director of Cardiovascular Services, UC Health
- **David I. Bernstein, MD**, Emeritus Professor of Medicine and Co-director, Allergy Training Fellowship Program, College of Medicine. •



RICHARD C. BECKER, MD



DAVID I. BERNSTEIN, MD

APRIL 2019

Wenhai Shao, PhD, received a **three-year R01 grant** of \$709,000 from the National Institute of Diabetes and Digestive and Kidney Diseases for the research project "Axl receptor tyrosine kinase, a potential therapeutic target in glomerulonephritis."



David Bernstein, MD, was interviewed by **WKRC-TV, Local 12**, discussing a new vaccine in trial aimed at protecting babies against cytomegalovirus.

Carl Fichtenbaum, MD, received one of the **Faculty Core Values Awards** from the Office of Research at the Research + Innovation Week Awards Ceremony.



MAY-JUNE 2019

Five faculty members in the Department of Internal Medicine were recognized by the CoM Office of Research in the **Gallery of Awardees** for receiving external research grants of \$100,000 per year or more:

Carl Fichtenbaum, MD, Division of Infectious Diseases; **Jason Blackard, PhD**, Division of Digestive Diseases; **Shailendra Patel, PhD**, Division of Endocrinology, Diabetes and Metabolism; **Wenhai Shao, PhD**, Division of Immunology, Allergy and Rheumatology; and **Sakthivel Sadayappan, PhD, MBA**, Division of Cardiovascular Health and Disease.



Phillip Owens, III, PhD, won a **2019 Research Innovation Grant** of \$30,000 for the research project "Role of the gut microbiota in abdominal aortic aneurysm."



Jason Blackard, MD, was interviewed by **The Cincinnati Enquirer** about his research on the potential impact opioids and HIV have on each other. Blackard received a **three-year \$1.7 million grant** from the National Institute on Drug Abuse to study the topic.



Senu Apewokin, MD, was part of a team of researchers who **won the 2019 Hackathon from UC Cancer Institute** and received a grant award of \$100,000 to study: "Radiation-activated Bacteria as Drugs: Leveraging the Microbiome for Cancer Cures." Their work was featured in a *Cincinnati Enquirer* story.



Kevin Haworth, PhD, received a **five-year R01 grant of \$2.6 million** in direct costs from the National Heart, Lung and Blood Institute for the research project "Ultrasound-Mediated Controlled Hypoxemic Reperfusion for Inhibition of Reperfusion Injury."



Shuchi Gulati, MD, IMSTAR Fellow, was accepted to participate in the 2019 American Society of Clinical Oncology American Association for Cancer Research Methods in **Clinical Cancer Research Workshop** in Vail, Colorado. ●



IMPACT

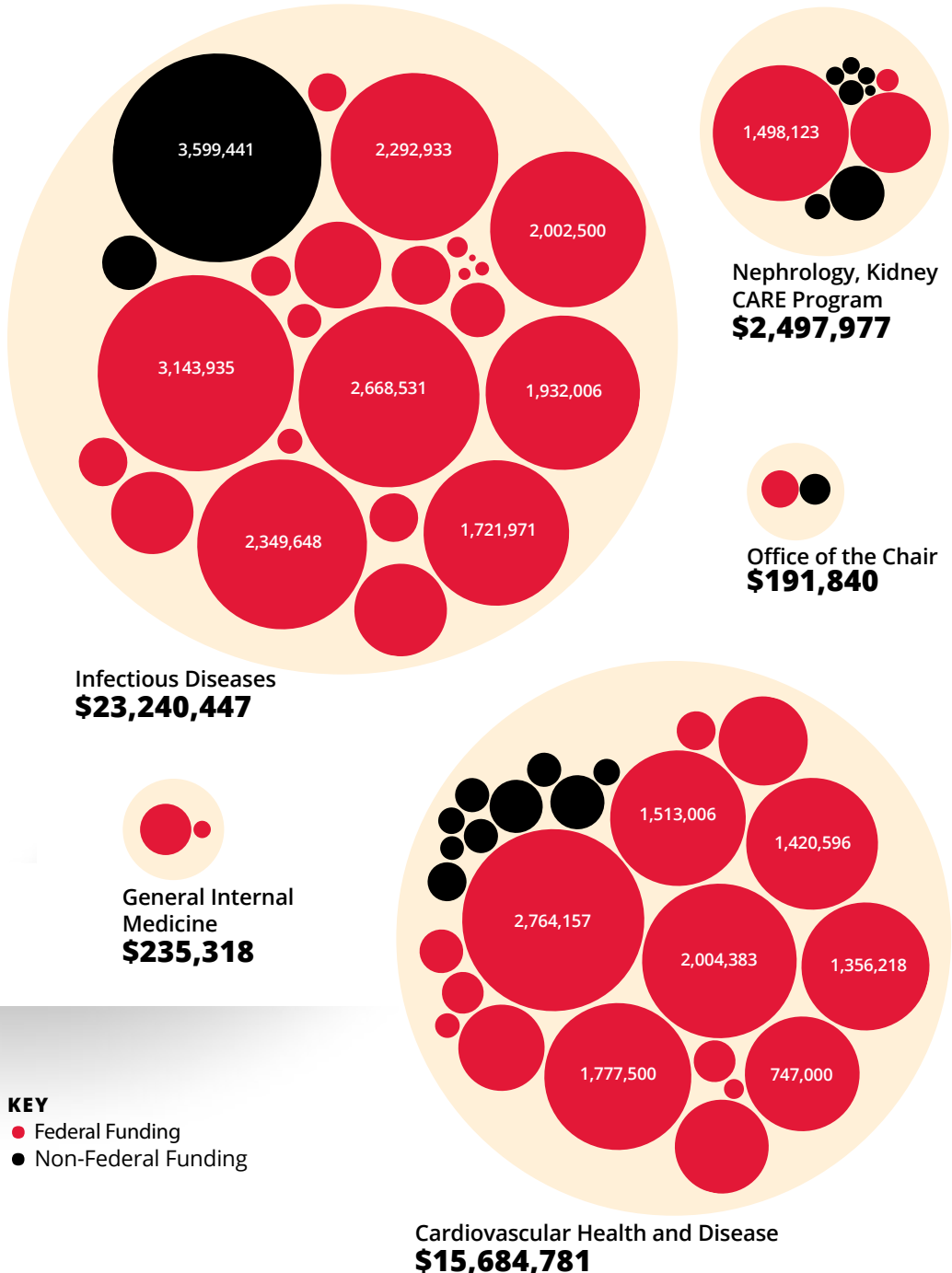
Funding

Research Funding FY18: **\$89,001,546**

We currently hold 145 total grants in the department, 19% of which are held by primary investigators

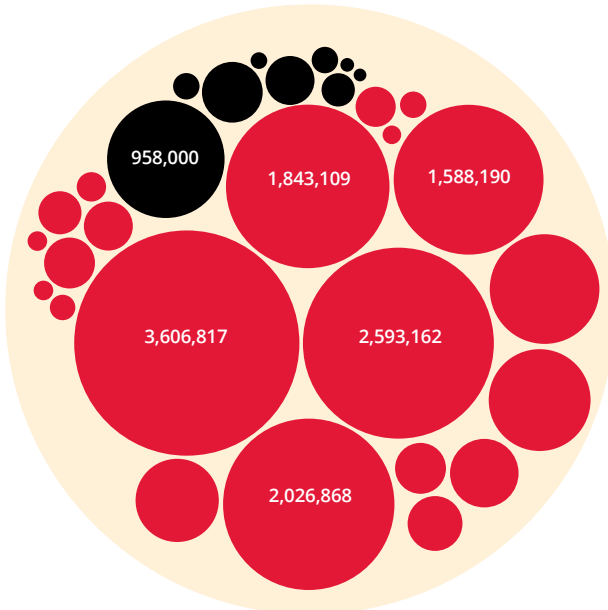
with R0-1 awards. The total award amount is \$86,869,756.

\$8.8 million of these were new grants awarded in FY19. ●

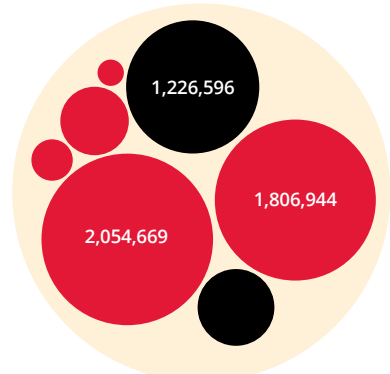


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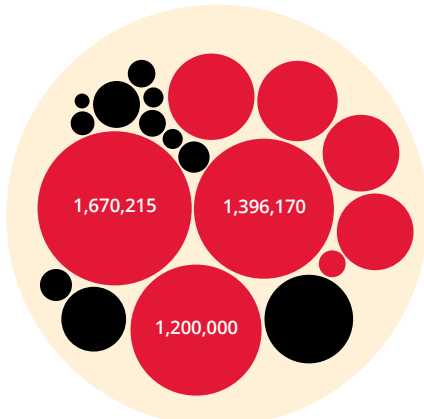
- Federal Funding
- Non-Federal Funding



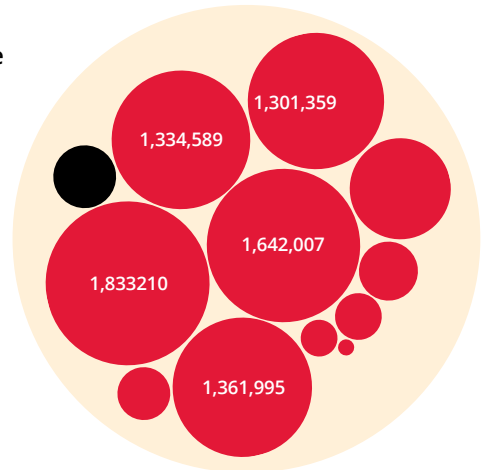
Pulmonary, Critical Care and Sleep Medicine
\$16,846,574



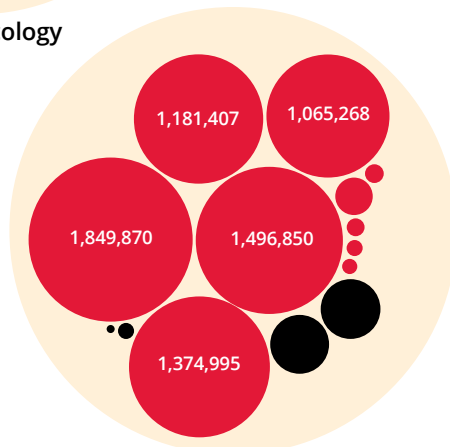
Endocrinology, Diabetes and Metabolism
\$5,976,562



Hematology Oncology
\$7,455,371



Immunology, Allergy and Rheumatology
\$9,169,862

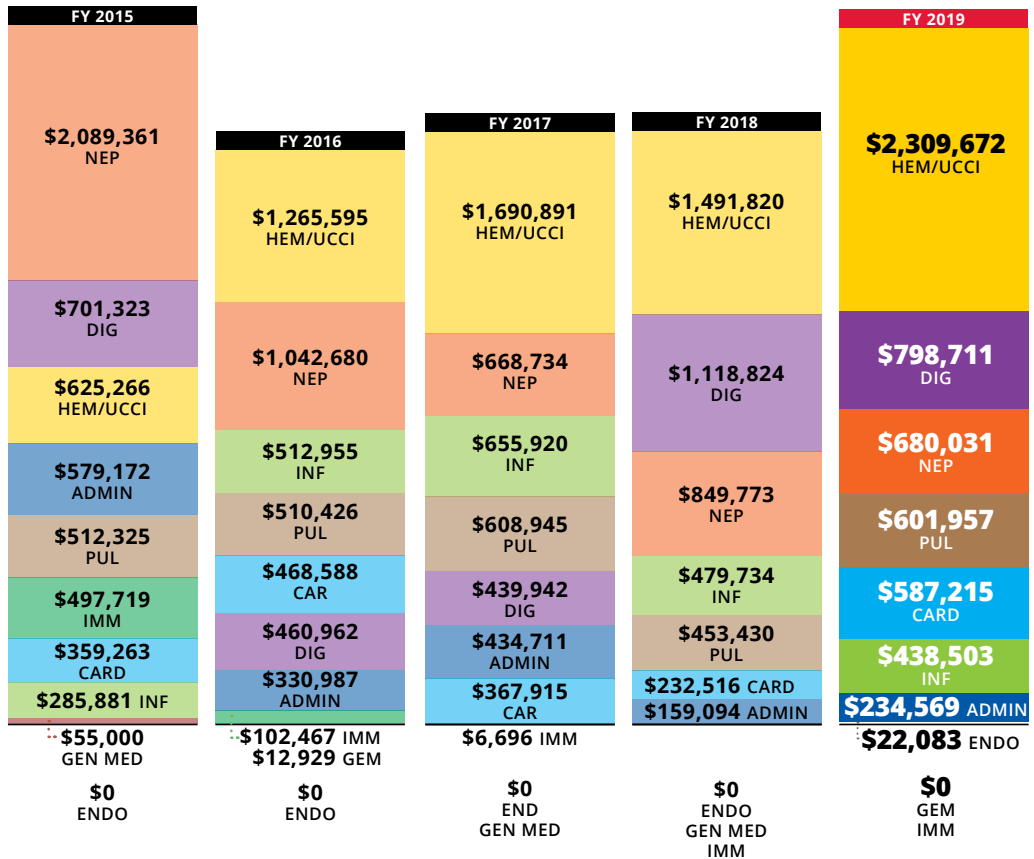


Digestive Diseases
\$7,702,813

IMPACT

Funding: Clinical Trial Revenues

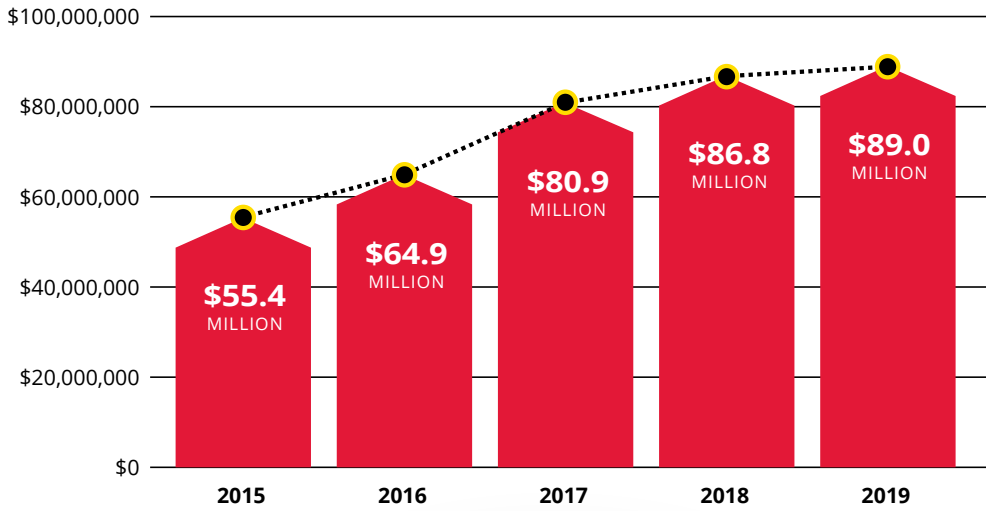
Clinical Trial Revenue FY19: **\$5,672,741**



Clinical Trial Revenue By Division

	FY15	FY16	FY17	FY18	FY19
ADMIN	\$ 579,172	\$ 330,987	\$ 434,711	\$ 159,094	\$ 234,569
CARD	359,263	468,588	367,915	232,516	587,215
DIG	701,323	460,962	439,942	1,118,824	798,711
ENDO	0	0	0	0	22,083
GEN MED	55,000	12,929	0	0	0
HEM/UCCI	625,266	1,265,595	1,690,891	1,491,820	2,309,672
IMM	497,719	102,467	6,696	0	0
INF	285,881	512,955	655,920	479,734	438,503
NEP	2,089,361	1,042,680	668,734	849,773	680,031
PUL	512,325	510,426	608,945	453,430	601,957
TOTAL	\$ 5,705,312	4,707,589	4,873,754	4,785,191	\$ 5,672,741

Five Year Trend of Research Funding



New Department Funding Furthers Outcomes, QI Research

When Ashley Jenkins, MD first approached the Internal Medicine Research office about funding quality improvement projects, she did not realize she would permanently expand the department's research awards.

Jenkins is finishing an Internal Medicine-Pediatrics hospital medicine research fellowship at Cincinnati Children's Hospital Medical Center and has a voluntary appointment as an assistant professor of Internal Medicine. As a Meds-Peds hospitalist, she has a special interest in using a community-based participatory research approach to improve healthcare system navigation and communication amongst the healthcare team for patients

across the lifespan. Jenkins said her initial request was about "being able to get food and some basic supplies to conduct an inclusive multi-stakeholder needs assessment about communication on the inpatient medicine teams."

Kelly Niederhausen was the right person to appeal to. Niederhausen, Business Administrator in the Divisions of Nephrology and Infectious Diseases and Assistant Director of Research for Internal Medicine, is committed to the research mission of the department and directed effort into creating a new research award for outcomes and quality improvement research in Internal Medicine. This new award "furthers the commitment to improve safety and quality in

health care and assist in determining what works and what does not work in health care delivery. Projects can incorporate clinical outcomes, financial impact, and functional measures and qualitative data collection methods and approaches."

Jenkins applied for and received the first Internal Medicine Outcomes Research/ Quality Improvement Award in fall 2018 for her proposal titled, "Interdisciplinary Communication Enhancement: Using Group Level Assessment to Guide Healthcare System Improvement." She worked with a large team of organizers and researchers on her project, including the Internal Medicine Academic Research Services (ARS) office staff and the Patients and Family Advisory Council (PFAC) at UC Health.

The project aimed to understand how communication occurred between interdisciplinary internal medicine (IM) teams in the inpatient setting as efforts to enhance interdisciplinary collaborative teamwork within inpatient IM teams highlighted a critical need to address concerns related to communication.

Jenkins's team conducted a single-center participatory mixed methods study using both group level assessment and concept mapping to examine current barriers and facilitators of effective communication. Their recruited stakeholders were IM faculty, residents, nurses and ancillary staff, patients/families, and care managers who work or have experienced care on inpatient IM teams. Over 100 stakeholders (17 care managers, 16 nurses/ ancillary staff, 22 IM faculty, 19 patients/families, 30 residents) generated 97 unique ideas related to communication in the inpatient setting.



Ashley Jenkins, MD, received the first Internal Medicine Outcomes Research/ Quality Improvement Award for her proposal titled, "Interdisciplinary Communication Enhancement: Using Group Level Assessment to Guide Healthcare System Improvement."

A key step after initial idea generation and was to go back to participant groups for feedback. One patient commented, "People always ask us for information, but we never get to hear what the results were or how they were being used. Thank you for bringing this back to us." This subsequent feedback and analysis revealed eight concepts within three key domains related to enabling interdisciplinary medicine team communication: patient inclusion and engagement, institutional expectations and role clarity, and team dynamics and behaviors. By interpreting the relationship between ideas and the perspectives of other team members, this interdisciplinary team identified clear expectations as a central and prioritized area to target communication improvement efforts.

For Jenkins, the main indicator of success for this project is that the majority of the co-leads on this project now continue to work together on improvement work at UC Health. Jenkins said, "Having research coordinator time with Ms. Dobbs and the supplies we needed was imperative. Otherwise, I would not have had the time to lead a team of diverse members—many whom have never done research—in this work. As a junior investigator, developing skills early in study design, project management, data analysis, and team leadership have been instrumental as I move forward in my career as a clinician investigator." ●

**INTERNAL MEDICINE OUTCOMES RESEARCH/
QUALITY IMPROVEMENT AWARD**

This award "furthers the commitment to improve safety and quality in health care and assist in determining what works and what does not work in health care delivery. Projects can incorporate clinical outcomes, financial impact, and functional measures and qualitative data collection methods and approaches."

Among those working with Dr. Jenkins on this project were:

- | | |
|---------------------------|---|
| Emily Dobbs, MS | IM Academic Research Services |
| Danielle Weber, MD | Assistant Professor of Medicine and Pediatrics, COM; University of Cincinnati Medical Center; Cincinnati Children's Hospital Medical Center |
| Danielle Clark, MD | Assistant Professor of Medicine, COM; University of Cincinnati Medical Center |
| Sana Rockwell | Former Director of Patient Experience, UC Health |
| Brian May, MD | Former Med-Peds Chief Resident, University of Cincinnati Medical Center; Cincinnati Children's Hospital Medical Center |
| Jamie Tu | Manager of Care Management, UC Health |
| Betian Lahbabi, RN | UC Health |
| Andy Arken | PFAC, UC Health |

IMPACT

Research Professional Award Finalists

College of Medicine Research Professional Award Finalists

Many of our IM staff serve our research mission in a way that vastly transforms productivity and drives the research enterprise. They do so by contributing to publications and grant proposals; acquiring and managing clinical trials; designing and executing experiments; recruiting, educating, and protecting clinical research participants; analyzing data; maintaining regulatory compliance; engaging the community in the research enterprise; and mentoring future researchers.

They often serve with little recognition for the time and expertise they commit to improving the quality and rigor of laboratory and clinical research.

We are proud of all our Department's nominees. Two research staff were recognized

as Research Professional Award Finalists by the College of Medicine's Office of Research and recognized at the annual Office of Research awards ceremony: Alan D. Ashbaugh (Infectious Disease Division) and Ameet Ajit Chimote (Nephrology Division). Each finalist received an award of \$20 sponsored by Fisher Scientific.

Chimote says it was an honor to be nominated for this award and he is grateful to everyone who nominated him. "Working in an academic health center has enabled me to work with the best clinical and basic research teams and allows the research to be truly translational in nature," he states. He is grateful to UC's amazing cores and core managers who support the research and allow cutting-edge research to occur.

"I couldn't have been nominated without the support of my amazing coworkers in the Conforti lab, Dr. Conforti and the wonderful folks in the Division of Nephrology who make coming to work a pleasure."

Ashbaugh states he is pleased to be nominated by Melanie Cushion, PhD and Michael Linke, PhD, and to become a finalist for the award, saying it is very important to recognize the staff that performs so much of the quality work done in basic and clinical research here at the University.

Nominations submitted to the Office of Research were reviewed by nine clinical and basic science faculty and senior researchers, the nominees were exceptional and the selection was difficult. ●

We celebrate our Research Professional Award Finalists!



Alan D. Ashbaugh, BS
Internal Medicine,
Infectious Diseases Division.
Nominated by: Melanie T.
Cushion, PhD and Michael J.
Linke, PhD, CIP



Ameet Ajit Chimote, PhD
Internal Medicine,
Nephrology Division
Nominated by: Laura Conforti,
PhD, Charuhas Thakar, MD,
FASN, Edith Janssen, PhD, and
Michael Arnold



Discover and Innovate



Division of

Cardiovascular Health and Disease

ENDOWED CHAIR: **Mabel Stonehill Endowed Chair**

The Division of Cardiovascular Health and Disease is actively engaged in a full range of research programs. These include fundamental and translational science, clinical trials, population health, implementation science, artificial intelligence and machine learning. We are fully committed to preventing, treating and curing diseases of the heart and circulatory systems through biomedical research and scholarly undertakings at the highest levels, and aspire to positively impact the cardiovascular health of people in our community and beyond.



Richard C. Becker, MD, FAHA
DIVISION DIRECTOR

Research Focus Areas/Types:

Our research focuses on understanding the mechanisms of heart and vascular disease, the development of new drugs, devices, and diagnostic technologies and employs a programmatic, theme-based approach to research that is carefully and strategically aligned with UC Health, the learning health system and the UC College of Medicine. Current projects include:

- Structural heart disease
- Adult congenital heart disease
- Aortopathies
- Cardiovascular-oncology
- Ultrasound-based therapies
- Advanced heart failure and transplant
- Vascular medicine
- Cardiac imaging, thrombophilias and arrhythmias, including those causing sudden cardiac death

Investigators/Trainees:

Our researchers have been highly productive in securing extramural funding. Collectively they provided presentations at 30 national and international prestigious conferences and meetings. We have six MD investigators and eight PhD investigators. Among others, they received R01, K25, Precision Medicine, Leducq, Department of Defense and Acoustic Society of America funding. Our early and mid-career faculty, to include Kevin Haworth PhD, Michael Tranter PhD, Phillip Owens PhD, Deeptankar DeMazumder, MD, PhD and Dylan Steen, MD, MS, have been productive, conducting high-impact basic, translational and population-based research, starting new companies or licensing inventions.

Funding Types:

- National Institutes of Health
- American Heart Association
- UC Heart, Lung and Vascular Institute
- UC College of Medicine, Department of Internal Medicine
- Department of Veterans Affairs
- Industry, public-private partnerships and philanthropy
- Intramural grant awards designed specifically to support discovery, collective intelligence, collaboration and training the next generation of scientific researchers and clinician-investigators.

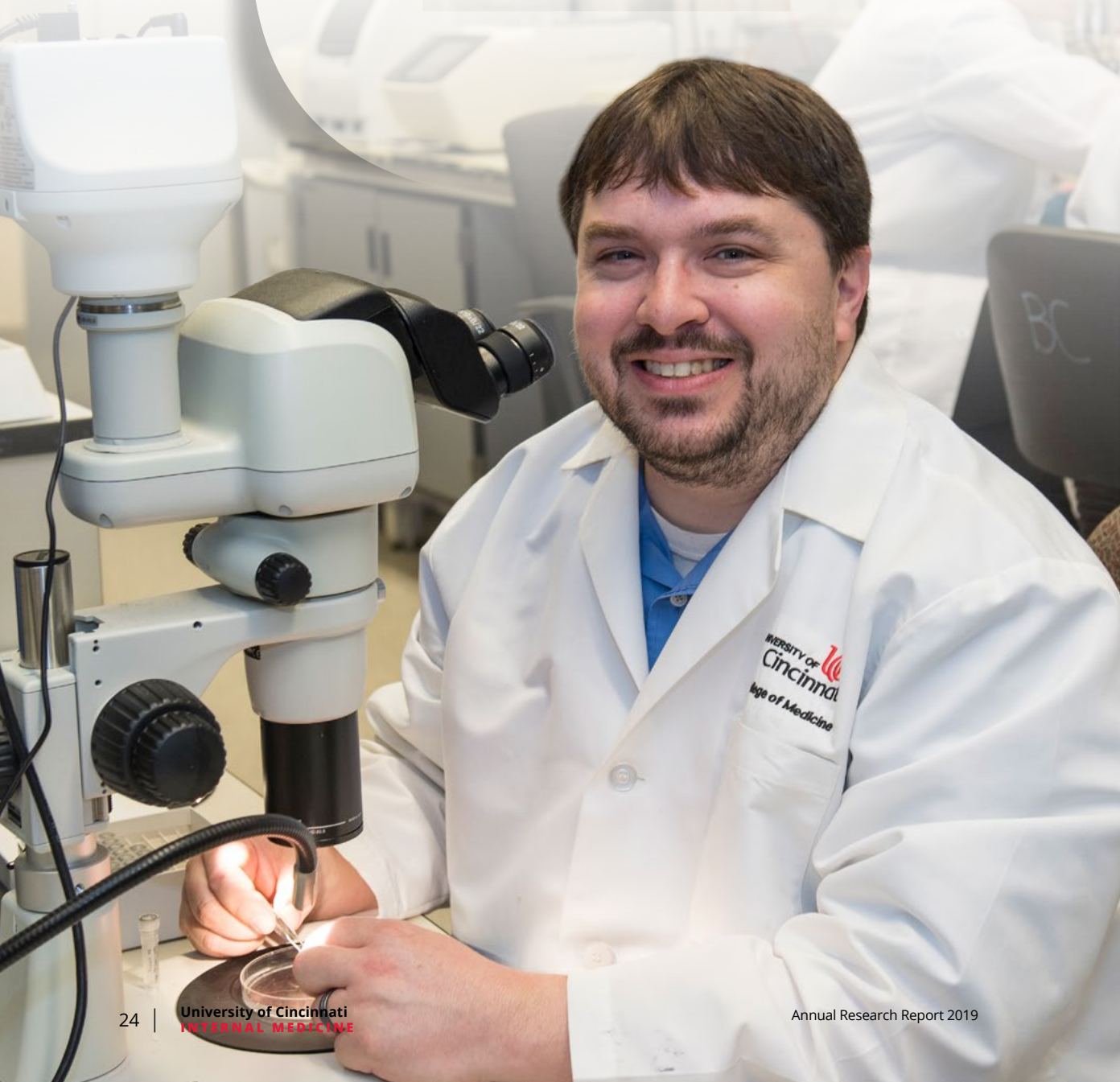
Mentoring:

We employ both single and team mentoring strategies, career development and scientific advisories and leadership training for senior faculty members who aspire to become department chairs. All of our senior and junior faculty provide mentoring to trainees. We have over 25 trainees that range from pre-doctoral to doctoral and post-doctoral students.

Collaborations:

Our research faculty have collaborations with most University of Cincinnati colleges. We also have collaborations with community retail and start-ups, the Office of Innovation-I-Hub and multiple federal and industry collaborations from scientific advisories for new drug development and innovative trial design in rare diseases to scientists in residency/exchange programs and development of AI platforms with large technology and device companies. Research initiatives will focus on point-of-purchase community health initiatives, AI, machine-based learning, predictive modeling and simulation among patients with cardiovascular conditions, the use of organoids and single-cell models of disease to understand genotype-phenotype relationships in myocardial and coronary vascular disease, and molecular associations of inflammation and thrombosis.

A. Philip Owens III, PhD



For Albert Phillip Owens III, PhD, his love of science can be traced back to his mom. So, not surprisingly his responses to the questions about his research at UC, while revealing his passion for discovery, innate curiosity and devotion to mentoring graduate students, also disclosed an inspiring underlying theme.....the influence of his mother in shaping his career. This has recently been even more in the forefront of his mind as she passed away this year after an 8-year battle with cancer.

As an Assistant Professor in the Division of Cardiovascular Health and Disease, he has been an independent faculty member at UC for 5 years and is a member of a highly successful and robust cohort of primarily PhD investigators in his division pursuing both basic and translational projects. The long-term goals of his research are to increase the understanding of thrombosis and coagulation in cardiovascular diseases (CVD) with an emphasis on atherosclerosis and abdominal aortic aneurysm. He aims to translate these findings into more effective therapeutics to improve survival and quality of life for CVD patients.

He asserts that his motivation to contribute to the understanding of cardiovascular disease is somewhat akin to the pleasure of adding a “piece to a puzzle.”

“I don’t care about patents, start-up companies or being credited with designing a new drug. I think that is too self-serving,” says Owens. His minimal interest in the entrepreneurial side of science is in part the attitude bequeathed to him by his mother who worked as a Research Assistant for a now defunct Cincinnati company, Duramed. When Owens was in high school,

his mom would come home from work and share her enthusiasm for new discoveries. In contrast, his dad, who is an accountant for a minority-owned local construction firm, came home with stories that were less inspiring to Phil, and more inspiring to Phil’s brother, who is a successful certified public accountant at a local insurance firm.

After obtaining a dual degree in Biology and Chemistry at Georgetown College, his decision to seriously pursue an academic career crystallized while working for a small Cincinnati biotech company, ApoLogic, Inc, located on the third floor of Hoxworth Building. Owens completed a PhD with Dr. Alan Daugherty at the University of Kentucky followed by a postdoctoral fellowship with Dr. Nigel Mackman at one of the meccas for the study of coagulation disorders, the University of North Carolina, Chapel Hill. When Dr. Richard Becker left Duke to become Chief of Cardiovascular Health and Disease at UC, Owens was recruited as an Assistant Professor with his own lab focusing on the role of clotting cascade in the pathogenesis of atherosclerosis. His closest collaborator in his division is Dr. Tranter with whom he co-directs the Pathobiology Graduate Program. However, he has a recent first author paper with another colleague in the division, Dr. Rubinstein, and recently received NIH supplemental grant with Dr. Haworth focused on investigating the role of protease-activated receptor 2 (PAR2) in the pathogenesis of Alzheimer’s Disease. With these and other collaborations, Owens has established a strong collaborative niche within the Division and the

UC College of Medicine.

Another important focus of Owens laboratory is the training of students; he has personally trained over 6 undergraduate researchers and successfully graduated 2 Master’s students and 1 Ph.D. scientist in his first four years at UC. He currently has 2 undergraduates, 2 graduate students and 3 research assistants in his lab.

Owens possesses a healthy attitude about his chosen career. Obviously, the competitive process of obtaining grants is stressful but the stress for him his largely “concern for the employment of his laboratory staff and their futures.” In part benefiting from internal Junior Pilot funding and the department’s Collaborative Challenge and Innovations grants, he was awarded a 5-year R01, an Alzheimer’s supplement, an award from Bayer Pharmaceuticals and an AHA innovative grant with Dr. Frank McCormack and anticipates a second R01 to be funded in April 2020.

Owens works hard and enjoys his work but—like his mother—is devoted to his family. He and his wife have three kids: 8, 5 and 3 years of age. His wife is a research scientist at the EPA, and it goes without saying that time is precious. But, Owens makes sure that he spends significant and high-quality time every day with his family...until they are all tucked into bed, and then he gets back to work pursuing his passion for science. He says this with a good-natured smile as he directs a productive cough into a tissue....an unsolicited gift from his youngest in daycare! ●

DISCOVER & INNOVATE*Cardiovascular Health and Disease***PUBLICATIONS** July 1, 2017 thru June 30, 2018

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Division of

Digestive Diseases

ENDOWED CHAIR: **Robert and Helen Gould Endowed Professorship in Internal Medicine**

The Digestive Disease Division has an active research agenda across the spectrum of gastrointestinal disorders. This includes basic, translational and laboratory research studies in esophageal disorders including eosinophilic esophagitis and GERD, upper GI bleeding, pancreatobiliary disorders, inflammatory bowel disease, intestinal infections like *C. difficile* and liver disorders including viral hepatitis, NAFLD/NASH, PSC, PBC and liver transplantation. We anticipate even further expansion of our clinical trials program. Areas of clinical research include treatment of chronic viral hepatitis, NASH, eosinophilic esophagitis, upper GI bleeding, inflammatory bowel disease, and hepatic encephalopathy.



Kenneth E. Sherman, MD, PhD
DIVISION DIRECTOR

Research Focus Areas/Types:

Currently, the division has five active research laboratories/groups. These laboratories are nationally recognized for their contributions to the understanding of:

- New treatments of hepatitis C, and interaction of HIV and hepatitis C viruses
- Viral host immunology and hepatic fibrosis
- Pharmacoeconomics
- Hepatitis B clearance mechanisms
- Effects of cocaine on liver disease progression
- Hepatitis E in immunosuppressed hosts
- Inflammatory bowel diseases and *C difficile* infection
- Eosinophilic esophagitis
- Liver transplantation immunosuppression

Investigators/Trainees:

We have five MD investigators engaged in clinical and translational research, three PhD investigators engaged in basic research and one PharmD. The Division has one endowed Chair (Gould) that is currently filled.

Funding Types:

- National Institutes of Health
- CDC
- UC College of Medicine and Department of Internal Medicine
- Industry and public-private partnerships

Mentoring:

All division laboratories are available to medical residents interested in an elective experience in a basic/translational research. We have an extensive and well-developed clinical research program. In addition to GI fellows, participation in the programs is also available to house staff.

Collaborations:

A joint GI training grant with pediatric gastroenterology has recently been renewed and funded. This grant provides stipends for fellows interested in basic and translational laboratory research. The divisional faculty have active international collaborations in South Africa, Botswana, Ghana, and India and work with leading investigators at UCSF, University of Maryland, Florida International University, University of Florida, University of North Carolina, Duke University and Harvard University.

Nadeem Anwar, MD

For Professor Nadeem Anwar, research is as much about equipping tomorrow's investigators as it is about finding answers for patients today.

"I consider my book chapter, which I worked on closely with my mentor Dr. Kenneth Sherman, to be one of my significant contributions in teaching hepatology to the next generation," says Anwar, whose chapter on the topic of "Viral Hepatitis other than A, B or C" for the journal *Scientific American Gastroenterology, Hepatology and Endoscopy*, was published in September 2016. The chapter is available online for medical students, residents and fellows.

Anwar inherited his "pay-it-forward" attitude from Sherman, who is the Division Director for Digestive Diseases and frequently cited as a mentor by young researchers in the division.

"Dr. Sherman takes personal interest in the development of his faculty and provides them with the help, guidance and opportunities to participate in clinical trials, as well as invites them to write review articles for national journals," Anwar says. "With his extensive academic experience, he has helped numerous other faculty members besides me to develop and complete their research projects, too."

As for his current work, Anwar has several ongoing clinical trials, some industry-sponsored, others investigator-initiated, and some nearing completion. In the next year, he hopes to submit a few more papers for publication in high-impact, peer-reviewed journals. His primary areas of interest are viral hepatitis and liver transplantation. A promising paper on HCV Ab positive organs being transplanted into non-HCV patients has been well recognized nationally.

"I feel that the research papers I have contributed to have helped make the right medical decisions for patients suffering from advanced liver diseases," Anwar says. ●



Nadler, MD
Digestive

UHealth™



Division of

Endocrinology, Diabetes and Metabolism

ENDOWED CHAIR: **Albert W. Vontz, Jr. Chair in Diabetes**

The Division of Endocrinology, Diabetes and Metabolism is committed to improving the health of our region by translating insightful findings from innovative research into impactful outcomes for the health of patients and our community. A few examples of how the division is making a difference include the outcome-based research that Robert M. Cohen, MD and Jason Winnick, PhD are conducting and the basic science that Vincent Fong, MD, PhD explores. Dr. Cohen's work has great potential impact to inform on how best to treat patients with type 2 diabetes; Dr. Winnick's work investigates how individuals with type 1 or type 2 diabetes respond to hypoglycemia and Dr. Fong is investigating how steroids like prednisone impact bone health as well as fat stores; Yufei Dai, MD is our IMSTAR faculty investigating how glucose metabolism is altered after weight loss surgery.



Shailendra B. Patel, BM, ChB, DPhil
DIVISION DIRECTOR

Research Focus Areas/Types:

Current research interests range from exploring the neuro-humoral integrated pathways using animal models of diabetes and obesity, lipid disorders affecting development and atherosclerosis to diabetes and metabolic clinical research . Examples are:

- Mechanisms important in hypoglycemia responses in subjects with diabetes
- Rare lipid disorders and integrated cholesterol metabolism in animal models
- The role of cholesterol in embryonic development

- Mechanisms by which the toxic proteins, causing Alzheimer's disease, are excreted by the brain
- The relationship between bone and metabolism
- Comparative effectiveness of various therapies for improving the durability of type 2 diabetes treatment (beta cell preservation)
- Mechanisms underlying variation between people in the hemoglobin A1c-blood glucose relationship, including racial differences
- Clinical interventions to reduce diabetes and nonalcoholic fatty liver consequences after liver transplantation
- Hematologic mechanisms contributing to the relationship between diet-induced obesity and inflammation

Investigators/Trainees:

We have two MD PhD investigators (Drs. Patel and Fong), two MD investigators (Drs. Cohen and Dai) engaged in clinical and translational research, one PhD investigator (Dr. Winnick) engaged in basic research and clinical trials. We have two basic science laboratories (Drs. Patel and Fong). Dr. Cohen is a co-investigator in a National Institutes of Diabetes and Digestive and Kidney Disease

sponsored multi-center trial called GRADE (Glycemia Reduction Approaches in Diabetes).

Funding Types:

- National Institutes of Health – Dr. Cohen GRADE study on diabetes, two R03s – Dr. Patel for Role of Cholesterol biosynthesis in development, and the Role of Abcg4 in Alzheimer's Disease, R01 – Dr. Winnick to investigate responses to insulin-induced hypoglycemia in type 1 diabetes.
- UC College of Medicine and Department of Internal Medicine (Drs. Dai and Fong)

Mentoring:

Our faculty host two post-doctorate fellows in our research laboratories and have trained medical students for their research rotations. We also have two undergraduate interns for laboratory-based research.

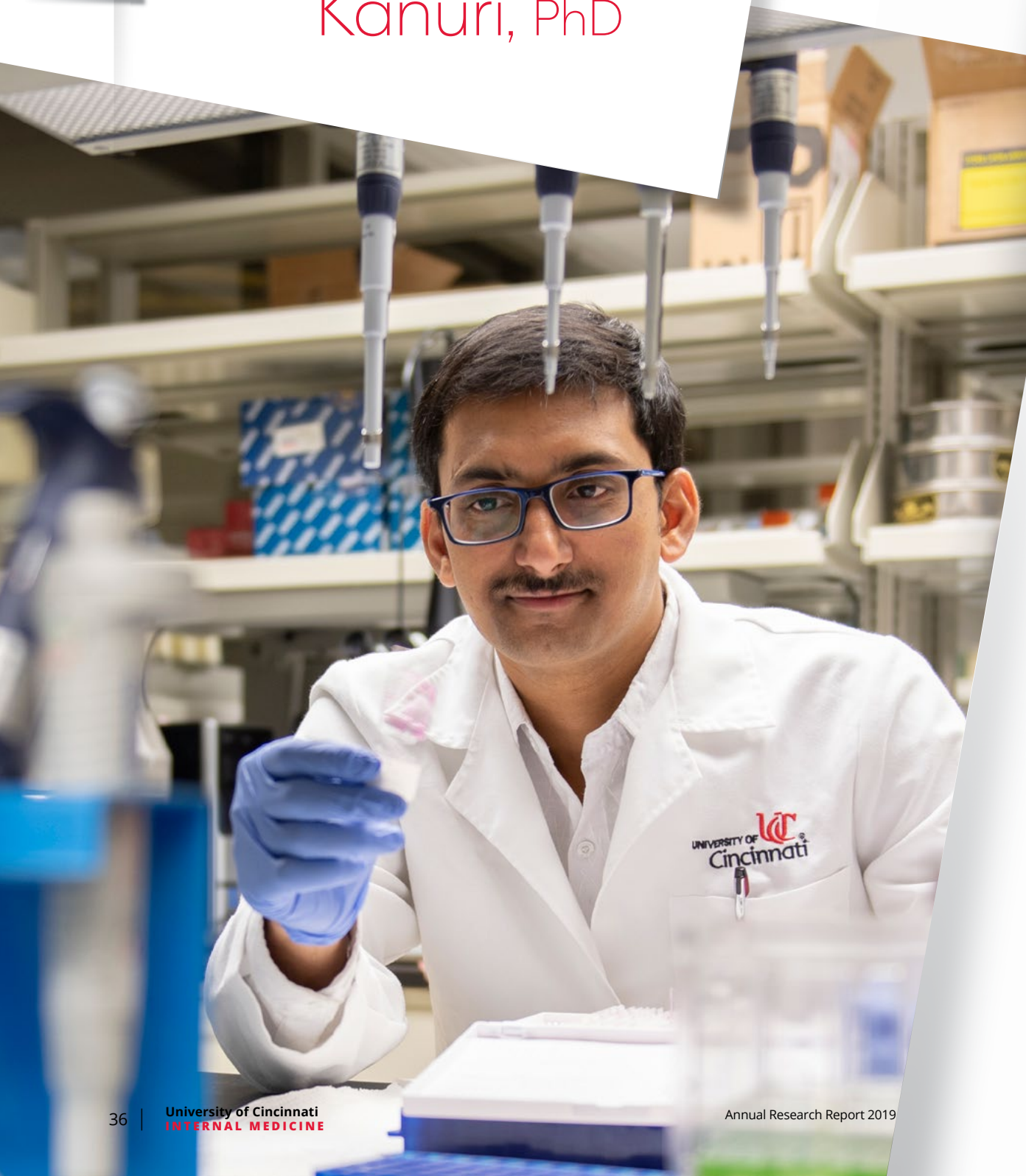
Collaborations:

Our faculty has many collaborative research efforts with other disciplines including Adult and Pediatric Hematology; Digestive Diseases; Transplantation Surgery; Pediatric Gastroenterology, Hepatology and Nutrition; Pediatric Human Genetics; and the Department of Pathology and Laboratory Medicine.

DISCOVER & INNOVATE

Endocrinology, Diabetes and Metabolism SPOTLIGHT

Babunageswararao Kanuri, PhD



For post-doctoral research fellow Babunageswararao Kanuri, the thrill of research lies in uncovering the small-scale advances that have the potential to lead to big breakthroughs.

“Most of my doctoral and postdoctoral research projects were focused on understanding the importance of interactions between different biological systems at the organ and tissue scale during the progression of a disease,” Kanuri says. “These interactions affect both transcriptional and translational processes leading to complex integrated changes in the global picture of genes and proteins.”

Kanuri says it was his passion toward the development of multitargeted pharmacotherapy approaches as possible treatments for patients with complex lifestyle disorders—such as diabetes and rarer metabolic syndromes—that made him realize the importance

of basic scientific research. He says that a variety of basic research activities are currently being pursued in the Division of Endocrinology, Diabetes and Metabolism that include development of mouse models and understanding pathophysiological mechanisms pertaining to diseases linked with endocrine dysfunction such as diabetes, obesity and rare genetic lipid disorders.

“Extensive understanding of different animal models could help us determine the possible pharmacological targets that can be tested for treatment purposes,” Kanuri says.

Kanuri credits some of his research success so far to his postdoctoral mentor, Dr. Shailendra Patel, whose experience, advice and support helped Kanuri overcome research challenges.

“I admire Dr. Patel for helping me become a better professional,

The thrill of research lies in uncovering the small-scale advances that have the potential to lead to big breakthroughs.

one who can deliver any work with passion, patience and perseverance,” Kanuri says.

And it is that passion that drives him, both inside and outside the lab.

“I enjoy drenching the mind and body in research to investigate unique biological questions and find logical, evidence-based answers,” Kanuri says. “However, outside the lab, I’m a dreamer who wants to explore the possibility of designing multitargeted pharmacotherapies to treat complex metabolic diseases linked with lifestyle changes.” ●

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- 9 Kim T, Holleman CL, Nason S, Arble DM, Ottaway N, Chabenne J, Loyd C, Kim JA, Sandoval D, Drucker DJ, DiMarchi R, **Perez-Tilve D**, Habegger KM. Hepatic Glucagon Receptor Signaling Enhances Insulin-Stimulated Glucose Disposal in Rodents. *Diabetes*. 2018 Nov;67(11):2157-2166. doi: 10.2337/db18-0068. Epub 2018 Aug 27. PMID: 30150304
- 10 Agrawal A, Parlee S, **Perez-Tilve D**, Li P, Pan J, Mroz PA, Kruse Hansen AM, Andersen B, Finan B, Khari-tonenkov A, DiMarchi RD. Molecular elements in FGF19 and FGF21 defining KLB/FGFR activity and specificity. *Mol Metab*. 2018 Jul;13:45-55. doi: 10.1016/j.molmet.2018.05.003. Epub 2018 May 11. PMID: 29789271
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Division of

General Internal Medicine

ENDOWED CHAIRS: **Posey Chair** and **Richard W. and Sue P. Vilter Chair**

Research in our Division has impacted numerous stakeholders, from patients in our own health care system to national policy. Examples of impactful work include work funded by the Centers for Disease Control and Prevention that will contribute to updated national guidelines on screening recommendations for hepatitis C infection; NIH-funded research helping to elucidate associations between morbid obesity and the incidence of certain cancers and the impact of bariatric surgery on reducing these risks; and PCORI-funded research to determine optimal treatment for migraine headache patients with medication overuse.



Mark H. Eckman, MD
DIVISION DIRECTOR

Research Focus Areas/Types:

Primary areas of interest include the decision sciences, outcomes research, health services research, clinical informatics, performance improvement and innovations in medical education, and system redesign.

Impactful Publications

Our faculty have shared several significant findings in high impact journals. These findings are found in publications such as the *Annals of Internal Medicine*, describing the cost-effectiveness of using kidneys from donors with hepatitis C infection for transplantation in patients with end stage kidney disease and in another article, the effect of variations in published stroke rates on the net clinical benefit of

anticoagulation for patients with atrial fibrillation; and the *Annals of Surgery* assessing bariatric surgery and the risk of cancer in a large multisite cohort and in another article, a study suggesting that bariatric surgery is associated with reduced risk of breast cancer in both premenopausal and postmenopausal women.

Investigators/Trainees:

We have eight MD investigators engaged in clinical and translational research; four senior faculty and four promising junior faculty (Ashley Jenkins, MD, Ben Kinneer, MD, Matt Kelleher, MD and Dana Sall, MD) and two endowed chairs, the Posey Chair and the Vilter Chair. Our faculty have received R01, UL1, Ryan White Foundation, other investigator-initiated industry and foundation, and Anthem Blue Cross Blue Shield Foundation award funding.

Funding Types:

- National Institutes of Health
- Centers for Disease Control and Prevention
- PCORI
- UC College of Medicine and Department of Internal Medicine
- Industry and public-private partnerships

Mentoring:

Our researchers are currently mentoring 2 PhD candidates, 6 junior faculty researchers, and 15 internal medicine residents. We also are mentoring junior faculty in other institutions, including one K-award recipient at the Cleveland Clinic, and faculty at UCSF.

Collaborations:

Beyond a rich network of collaborations within the University of Cincinnati, our faculty collaborate on academic activities and research with colleagues at a number of institutions, including the Harvard Medical School, the Massachusetts General Hospital, UCSF, Kaiser Permanente, McMaster University (Ontario) and University of Birmingham (UK), among others.

Mark H. Eckman, MD

Decisions, Decisions,
decisions!

As the Posey Professor of Clinical Medicine, Professor of Environmental Health, Director of the Division of General Internal Medicine, Director, Center for Clinical Effectiveness, and Co-Director of the Biomedical informatics Core for the University of Cincinnati's Clinical and Translational Science Award (CTSA), Mark Eckman, MD makes multiple decisions every day. Adding to the scale of these responsibilities is a burgeoning hospitalist mission taken on by his Division of General Internal Medicine that staffs over 30 faculty and nurse practitioners that are critical to the functioning of UC Medical Center. When asked how he successfully manages these roles, he points smilingly to a framed drawing on his wall that depicts a homunculus-like cartoon of his head surrounded by multiple hats labeled: physician, husband, Director Clinical Effectiveness, Division Director, Posey Professor, and father. Though this is not unlike many overworked division directors, and, some might say, most academic physician scientists attempting to be the triple threat, Eckman may have a distinct advantage—his passion and indeed his career focus is on advancing the field of logical, evidenced-based decision making. This combined with a natural sense of organization and instinct to be proactive and timely creates an unusually “effective” physician, scientist and administrator.

Put another way, Eckman espouses cognitive medicine.

Eckman is a pioneer in what is now commonly known as “evidence-based” medicine. Is this not a misnomer - have not doctors always been evidence-based? Eckman stresses that as recently as the 1980s it remained typical on rounds for attending physicians to say when asked to justify their clinical decisions, “I do it this way because this what I know works best.” At medical school at Albany, the logic-based computer scientist in Eckman with a Masters in Biomedical Engineering from Northwestern recoiled at this anecdotal approach to medical decisions. Following an internal medicine residency at Albany, Eckman completed a highly prestigious two-year fellowship at Tufts University School of Medicine in Clinical Decision Making and Medical Informatics and learned under some of the masters in this young field including Dr. Stephan Pauker, and Dr. Jerome Kassirer, at the time editor of the *New England Journal of Medicine*. He stayed on at Tufts rising to Professor of Medicine, Chief of General Medicine, Division of Clinical Decision Making, Informatics and Telemedicine all the while being a Research Affiliate at the Laboratory for Computer Science at MIT. In 1999 he moved to UC as the director of the Institute for Health Policy and Health Services Research, Director of the Center for Clinical Effectiveness, and Chief of General Internal Medicine.

As he looks back on his career, he is most proud of his contributions to a publication in *Chest* in 2012 providing guidelines for antithrombotic therapy for atrial fibrillation. In this paper—with well over 1300 citations to date—evidence-based theory was applied to address the management of patients receiving anticoagulant or antiplatelet therapy. Eckman has published over 120 primary data papers and has an H index in the low 40s.

Eckman remains excited about the prospects in his field. The need for evidenced-based medical decision making that also factors in cost and quality of life continues to be progressively more emphasized. One of the challenges, however, that is typical of most divisions in academic medicine, is the difficulty in garnering the resources to support and foster academic research careers. His strategy at UC has been to “grow his own” young faculty; Drs. Schauer, Warm, Zafar and Sall, to name a few, are examples of the wisdom of this approach. Increasingly, as Eckman finds that his expertise can be applied to many clinical domains, a large percentage of his research effort involves assisting others in the design of their research questions. At its core, it all comes back to how to make the right decision! ●



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- 6 Gauthier N, Johnson C, Stadnick E, Keenan M, **Wood T**, **Sostok M**, Humphrey-Murto S. Does Cardiac Physical Exam Teaching Using a Cardiac Simulator Improve Medical Students' Diagnostic Skills?. *Cureus*. 2019 May 7;11(5): e4610. doi: 10.7759/cureus.4610. PMID: 31312537 Free PMC Article

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Division of

Hematology Oncology

The scientists and clinical investigators in the Division of Hematology Oncology strive to understand the molecular basis of cancer with the goal of developing novel cancer therapies. The research faculty is engaged in the design and execution of early phase clinical trials, laboratory, research and in teaching and training clinical and research trainees.



Pier Paolo Scaglioni, MD
DIVISION DIRECTOR

Research Focus Areas/Types:

LABORATORY RESEARCH: The Division has 7 independent laboratories pursuing the following research interests:

- Oncogene-dependent intracellular signaling
- Cancer metabolism
- Cancer immunotherapy
- Role of tissue factor in cancer biology
- Identification of novel therapeutic targets
- Biology of primary and metastatic brain tumors.

CLINICAL RESEARCH: The interests of the clinical faculty span from the design and execution of early phase to later phase clinical trials (phase I-III). The program has steadily increased the number and quality of clinical trials. We have a portfolio of 72 open trials for a wide array of cancer types. Our experimental therapeutic program is unique in the tristate

region providing access to novel therapies that are tested in man for the first time. Several of our faculty have developed investigator-initiated trials that have attracted the financial support of government, non-profit or industry sponsors.

Over the past year, 566 patients were enrolled in interventional trials offered by the Division, which is the highest enrollment of any division in the University of Cincinnati Cancer Institute. Examples of exciting research programs are: Dr. Gulati's investigator-initiated trial aimed at assessing immune check point blockade in association with EGFR inhibition and Dr. Riaz's trial assessing the effect of pan-FGFR inhibition, both in head and neck cancer.

Investigators/Trainees:

Three clinical investigators dedicated to phase I and phase Ib trials staff the experimental therapeutic program; eight additional clinical faculty members contribute to our clinical research mission through clinical trials or outcome research. The Division has 12 Hematology and Oncology fellows, several of which are engaged in original research.

Funding Types:

- National Institutes of Health
- UC College of Medicine and Department of Internal Medicine
- Department of Veterans Affairs
- Industry and public-private partnerships
- Department of Defense

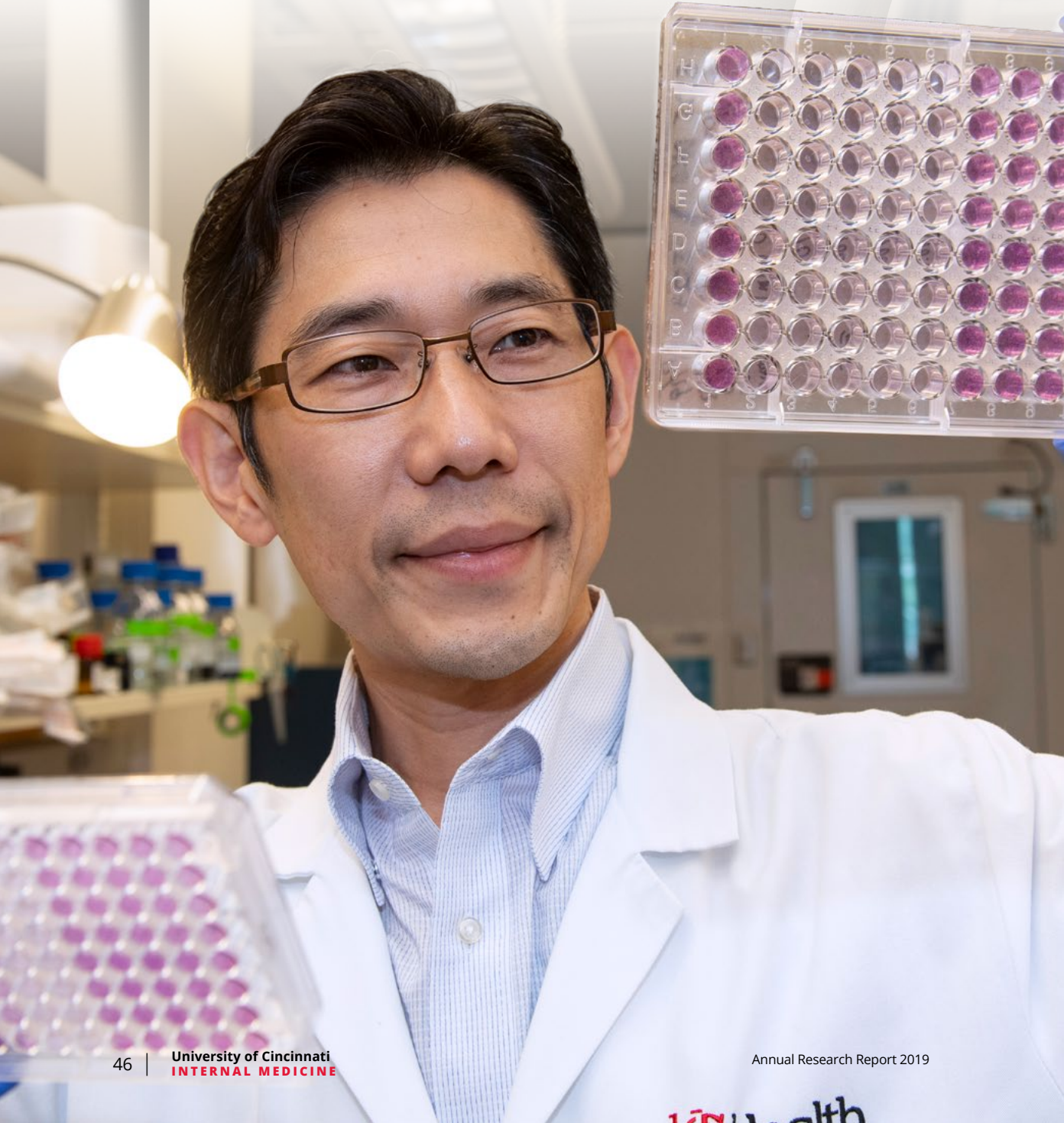
Mentoring:

Our researchers are mentoring 4 post-doctoral fellows in addition to 4 graduate and several undergraduate students. Educational activities include research seminars and Cancer Grand Rounds.

Collaborations:

We maintain close interactions with other clinical and basic science departments through the framework provided by the UC Cancer Institute and the Cincinnati Cancer Center within the UC Academic Health Center, Cincinnati Children's Hospital Medical Center and the Cincinnati VA Medical Center.

Atsuo T. Sasaki, PhD





Atsuo T. Sasaki, PhD, has research interests and collaborators that span the globe. An Associate Professor in Hematology/Oncology at UC, he is also a Project Professor at the Institute of Advanced Biosciences at Keio University, and a Visiting Professor at Hiroshima University. Dr. Sasaki's main focus of research is the function of guanosine-5'-triphosphate (GTP) metabolism in human diseases, including brain tumors.

Sasaki and his team at UC are researching how cells identify and manage GTP levels. GTP is an energy source for cells, and tumor cells need an adequate supply of GTP in order to maintain their fast growth. In their work, Sasaki's team successfully discovered the first GTP-sensing lipid kinase, PI5P4K β , a major development in understanding the role of GTP in brain tumors. This work was published in *Molecular Cell* in 2016.

Sasaki and his team had another breakthrough resulting in a 2019 publication in *Nature Cell Biology*. Researchers have long known that enlarged nucleoli increase ribosome production, which can lead to cancerous growth. Sasaki's team discovered that malignant brain tumors can hijack and reprogram GTP metabolism for nucleolar transcription, allowing them to maintain highly anabolic growth rates. Sasaki's discovery reveals an important link between GTP biosynthesis, nucleolar enlargement, and malignant growth in brain tumors and fills a 120 year knowledge gap. According to Sasaki, "The nucleolus is the 'eye'

of the cancer storm that ravages patients' bodies. Being able to control the eye would be a true game-changer in cancer treatment." This publication has received national attention and has been featured in articles, highlights, and television and radio shows.

Sasaki has had great success in GTP research. Since 2012, he has received over \$3 million in competitive grants for his GTP sensor project. He has over 50 peer-reviewed publications which have been cited over 10,900 times as of February 2020, with an h-index of 40.

However, Sasaki does not spend all of his time in the lab. He is also the founder of three scientific societies, including UC-Tomorrow and United Japanese Researchers Around the World (UJA). Sasaki founded UJA while he was a post-doctoral scholar at Harvard. Sasaki describes UJA as a non-profit "designed to foster new generations of Japanese scientists who can work with their peers from around the globe to advance science." UJA also organizes career development meetings for young students and established researchers, performs global surveys of Japanese researchers abroad, and publishes articles and books about career development and effective ways to research abroad. UJA is recognized by the Japanese government and is a great resource for networking.

When he is not in the lab or working with UJA, Sasaki can be found spending time with his wife and two children, doing hot yoga, or walking his dog, Cow-Cow. ●

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DISCOVER & INNOVATE

Hematology Oncology

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Division of

Immunology, Allergy and Rheumatology

Our Division undertakes a wide range of research that is grounded in immunology and inflammation. Highlights of this year's research include: publication of a novel genetic cause of a mouse model of primary biliary cholangitis (PBC), a paper on prevention of food allergy and suppression of established food allergy by neutralization of TSLP, IL-25 and IL-33, a publication using a novel way to suppress anaphylaxis by using an Anti-Fc receptor monoclonal antibody, a paper showing that house dust-mite allergy is independent of IgE and Fc- γ R1 α , a paper on targeted inhibition of Axl receptor tyrosine kinase in nephritis, a paper on the genetic basis of house dust-mite allergy, and a paper on targeting innate immunity to reverse type 1 diabetes.



William M. Ridgway, MD
DIVISION DIRECTOR

Research Focus Areas/Types:

The research in the division spans the spectrum of basic immunological research. Research projects include:

- Investigations to the pathogenesis of food allergy/hypersensitivity
- Anaphylaxis, new therapies for asthma and allergic diseases
- Mechanisms of occupational lung disease
- Pathogenesis of primary biliary cirrhosis and type 1 diabetes (organ specific autoimmunity)
- Pathogenesis of cutaneous systemic lupus erythematosus (SLE)
- Novel therapies for autoimmune disease

Investigators/Trainees:

We have five MD and three PhD researchers and three labs. We hired a new PhD investigator in Immunology, Dr. Wenhui Shao, who specializes in lupus mouse models and immune cell signaling. The Evelyn Hess Chair for Lupus Research is now officially established and we will start the search for the first occupant of the Hess chair. Overall, the division published over 50 articles this year.

Funding Types:

- National Institutes of Health
- Department of Veterans Affairs
- UC College of Medicine and Department of Internal Medicine
- Industry, public-private partnerships and philanthropy

Mentoring:

We have a T32 in Allergy/Immunology, one participant in the CSTP program, a participant in the young faculty mentored journal club, and two separate ACME accredited fellowship programs whose goal is to produce academic Allergists and Rheumatologists.

Collaborations:

In the coming years, a major effort will be the development of the UC Lupus Center. There is now a critical mass of SLE researchers on campus, including basic and clinical research programs. This year we will organize seminars to encourage cross-disciplinary research in SLE that involves both basic investigators and clinicians.

Suzanne Morris, PhD

Research Associate Professor of Medicine Suzanne Morris isn't only interested in better understanding how the immune system works; she wants to utilize the knowledge to better treat the growing number of patients with severe food allergies and immune system disorders.

"We're developing and using in-vivo models to understand how the immune system works; how the activation state of antigen presenting cells influences the development of immune responses and the potential application of these models in autoimmune disease and allergy," Morris says.

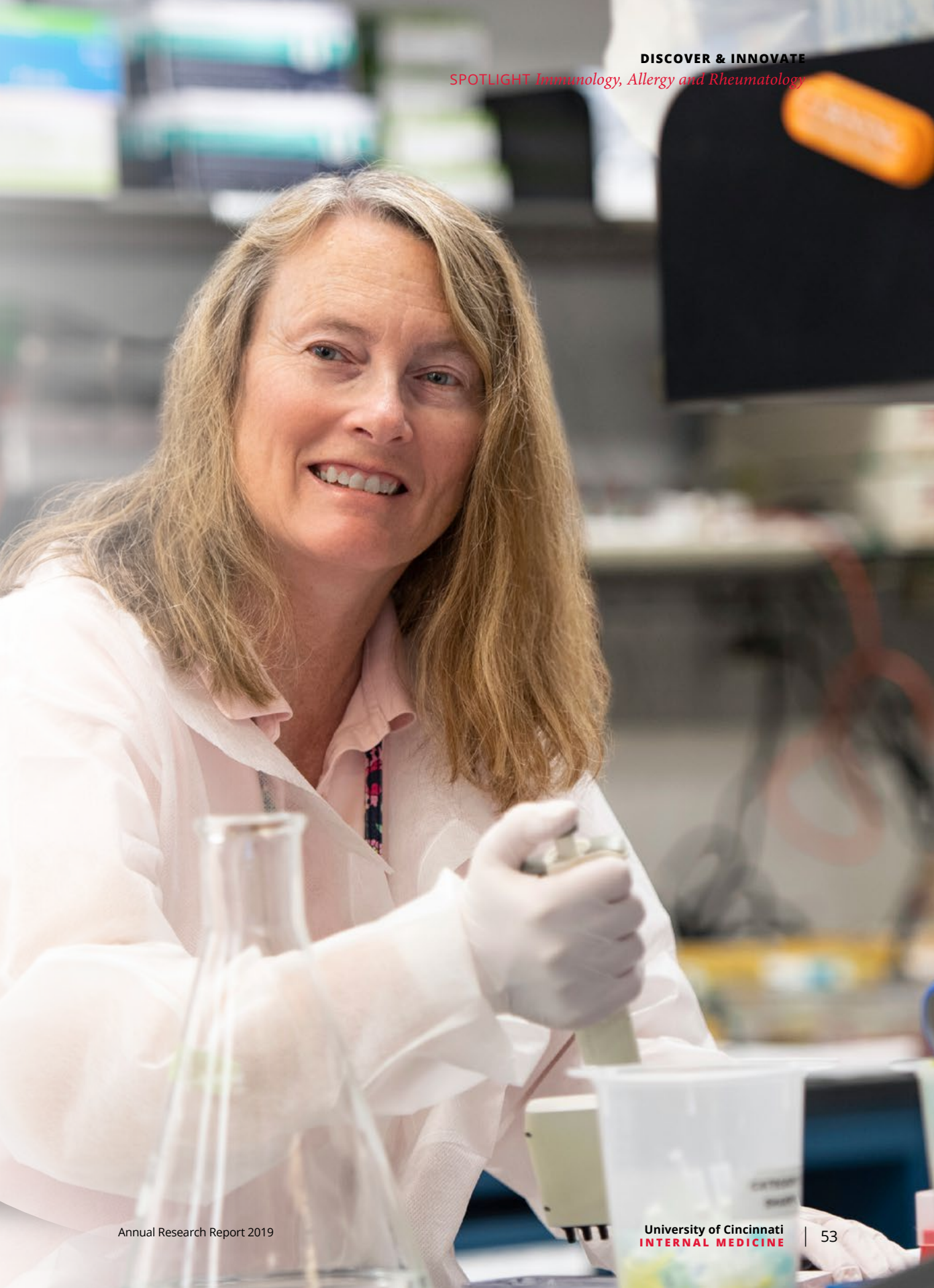
Her current research is in two areas: studies with mouse models in food allergy (anaphylaxis), with the focus on developing new approaches to treat these disorders; and studies focused on autoimmune disorders of how IgG1 antibodies can suppress disease caused by more potent antibodies.

Morris has been interested in autoimmunity and lymphocyte tolerance since her early work and training at the University of North Carolina-Chapel Hill—research that led to her PhD thesis. After completing her undergraduate degree in biology, Morris's first job before going to graduate school was in a cutting-edge laboratory using monoclonal antibodies made for very early clinical trials on patients with colon cancer.

"The excitement of where laboratory research could lead was a driving force in deciding to get my PhD," Morris says.

Morris credits some of her success thus far to her relationship with her mentor and colleague in immunology, UC's Fred Finkleman. "I have established an excellent working relationship for over 30 years (24 of those years while at UC) that provides benefits to each of us that allows us to be productive both individually and as a team," says Morris, who believes the benefits of team research cannot be understated. "The team approach has allowed greater progress to be made," she says. "We have taken advantage of serendipitous discoveries, and we are moving our findings from bench to bedside."

Outside the lab, Morris is just as busy—the single mother adopted two daughters from Kazakhstan in 2005 and 2007, respectively. "Both of my daughters came home at 9 months of age and have enriched my life tremendously," she says. "My life is a juggle, and my household is two kids, two dogs, two cats and one bearded dragon. But when the time is available, I still enjoy watching a good game of Carolina basketball." ●



DISCOVER & INNOVATE*Immunology, Allergy and Rheumatology***PUBLICATIONS** July 1, 2018 thru June 30, 2019

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DISCOVER & INNOVATE

Immunology, Allergy and Rheumatology

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PATENTS

Optical Sensor US 2016 0041105 A1 Pending

Bernstein JA

Optical Sensor 14/920.942

Division of

Infectious Diseases

The Division of Infectious Diseases has a long-standing reputation as a research focused division where 72% of the division's faculty members have active roles in clinical, translational, and basic science research. In total, the division has 13 MD investigators and 3 PhD investigators with over \$20 million in research holdings.



George Smulian, MD
DIVISION DIRECTOR

Research Focus Areas/Types:

The focus of the division's basic science research remains fungal pathogens:

- *Histoplasma capsulatum*
- *Pneumocystis* spp.
- Host cellular response to *Clostridium difficile*

The clinical and translation research focus continues to be:

- HIV
- Diarrheal pathogens
- Respiratory pathogens

Investigators/Trainees:

The division has an international reputation as a mycology powerhouse based on the research programs of George Deepe in *Histoplasma capsulatum* and Melanie Cushion in *Pneumocystis* species. Kavitha Subramanian Vignesh, the division's newest basic science researcher, is expanding the division's *Histoplasma* research activities even further. Junior investigators such as Rajat Madan and Senu Apewokin are growing the basic and translational research programs of the division by examining the pivotal interface between host cellular, metabolism and *Clostridium difficile* in mouse models and in immunocompromised humans. Additionally, Moises Human and Carl Fichtenbaum have delved into a new area of exploration for the division by investigating the role of the host inflammatory response elicited by microbes in the pathogenesis of cardiovascular disease. The clinical research

program under Dr. Fichtenbaum continues to conduct studies on persons with HIV infection; prevention of HIV infection; Hepatitis C; influenza and appropriate antibiotic usage.

Funding types:

- National Institutes of Health
- Health Resources and Services Administration
- Department of Veterans Affairs
- UC College of Medicine and Department of Internal Medicine
- Industry, public-private partnerships and philanthropy

Mentoring:

The divisional research program is committed to providing a structured mentoring environment to allow junior faculty and fellows to develop as independent investigators while sustaining the programs of established investigators.

Collaborations:

The division maintains close collaboration with the VA National Infectious Disease Program office based here in Cincinnati and benefits from access to the UC based fungal research on *Aspergillus* and *Candida* and international programs in *Paracoccidioides* and *Cryptococcus*.

Pamposh
Kaul, MD



Pamposh Kaul is not only a dedicated doctor and researcher; she is also the mother of twins—just one reason she considers her work in preventing mother-to-baby HIV transmission the most significant of her career.

This ongoing project consists of monthly perinatal meetings that allow for a formalized process of care coordination to prevent vertical transmission of the HIV virus from mother to infant.

"This process includes communication and coordination of services among nurses, physicians, pharmacists, obstetricians, pediatricians and case managers within our region," says Kaul, "to achieve a goal of zero perinatal HIV infections transmitted from mother to baby."

On a broader scale, Kaul's research interests are focused on increasing the number of clinicians able to provide quality care for patients living with HIV through multiple grant-funded programs. The HIV Clinician Scholars Program is a yearlong mentorship program for a community provider. The HIPEP/ HIV Inter-Professional Education Program is a multi-disciplinary course that teaches students to provide integrated care for individuals with HIV. The Practice Transformation Project works with one primary care clinic over several years to expand their capacity to provide HIV care. And the MINHC project

seeks to integrate the National HIV Curriculum into the curricula of health professions schools in Ohio. The goal of this project is to enhance HIV education among health profession programs throughout the Midwest.

Kaul says her research interests were also influenced by working with UC's Dr. Peter Frame, who was a pioneer in HIV care, research and education in the region. "He introduced me to the educational grant and therefore quality improvement research," she says. "I will be eternally grateful for his guidance."

She's also thankful for her division directors, the insights of her colleagues, Dr. Peter Grubbs and Dr. Carl Fichtenbaum, and all of the staff that make the research and work possible.

"I am very blessed to work with the Infectious Diseases Center," says Kaul. "I owe a lot to the clinic staff, especially the nurses and educational research staff team who allow me to pursue these aspects of my work—and without whom I could not do any of the work. It takes an enormous amount of support."

And for Kaul, who is primarily a clinician, seeing the real impact research has on patient lives is the biggest reward of all.


"I am deeply appreciative of the patients who help me understand their points of view and have allowed me the privilege to care for them," she says. ●

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Division of

Nephrology, Kidney CARE Program

ENDOWED CHAIR: **James Heady Endowed Chair**

The division conducts basic and translational research alongside robust programs in clinical outcomes research and clinical trials within nephrology. First and foremost, we strive to impact the health of patients and our community through the delivery of excellent care. One of the ways we achieve this is by bringing the latest discoveries in the field of nephrology closer to the bedside. We are recognized regionally and nationally for leading and/or contributing to cutting-edge research, and advancing the knowledge about kidney diseases to patients, peers and trainees. This is achieved via a variety of mediums, including peer-reviewed publications, chapters and monographs, symposia, and focused learning sessions within the institution and the community. With our state-of-the-art laboratory facilities, we provide an academic home to our established research faculty and are committed to training graduate and post-doctoral students.



Charuhas Thakar, MD
DIVISION DIRECTOR

Research Focus Areas/Types:

BASIC AND TRANSLATIONAL

- Acute and chronic kidney injury
- Ion-channels and immune regulation
- Epithelial transport
- Vascular biology
- Phosphate metabolism, acid-base physiology

CLINICAL OUTCOMES

- Acute kidney injury, chronic kidney disease, dialysis, and transplantation

Investigators/Trainees:

The division is at the forefront of planning or participating in national and international clinical trials of new drug development, devices, and other technology. Promising Junior investigators are Silvi Shah, MD and Prakash Gudsoorkar, MD. More established investigators are Laura Conforti, PhD, Hassane Amlal, PhD, Rita Alloway, PharmD and Heather Duncan, PhD. In total we have 5 MD investigators and 4 PhD investigators and over 15 active clinical trials. Research publications by the Division of Nephrology investigators have appeared in the most prestigious medical journals over the last decade, including the *Annals of Internal Medicine*, *Journal of Clinical Investigation*, *PNAS*, *Science*, *Translational Medicine*, *Journal of American Society of Nephrology*, *Kidney International*, and *Critical Care Medicine and Stroke*.

Funding Types:

- National Institutes of Health (R01, U01, DOD)
- Department of Veterans Affairs

- Department of Defense and FDA
- UC College of Medicine and Department of Internal Medicine
- Industry, public-private partnerships and philanthropy

Mentoring:

Faculty provide mentoring to eight trainees and two post doctorate fellows. Realizing the importance of quality improvement research in the future of clinical medicine, the division continues to co-direct a program at the VA to develop and train a fellow in Quality and Safety.

Collaborations:

We continue to grow our outcomes research program, basic science program, and clinical translational research through strategic collaborations with the VA Medical Center, Cincinnati Children's Medical Center, UC College of Engineering, Department of Surgery, Department of Family and Community Medicine, Department of Biomedical Informatics and the Department of Emergency Medicine. All of the above collaborations have resulted in scientific productivity: either scholarly work and grant funding.

Ameet Chimote, PhD

Ameet Chimote's passion for meaningful research started while he was a doctor in his native India.

"I have seen up close how diseases, especially cancers, can affect individuals and families," Chimote says "I have always been motivated to do patient-centric translational research that has an impact on understanding a disease process and can lead to development of therapeutics to treat that disease."

For almost a decade, Chimote has worked to that end as a Research Scientist in Dr. Laura Conforti's laboratory in the Kidney CARE program, part of UC's Nephrology Division. Chimote is part of a team that studies the role of ion channels in T lymphocyte function, primarily in the context of autoimmune kidney disease and solid tumors. In autoimmune Systemic Lupus Erythematosus (SLE), the T lymphocytes are hyperactive, and in 60 percent of patients, this hyperactivity leads to kidney damage, known as lupus nephritis. Targeting a specific ion channel in SLE T cells could lead to a new therapy to prevent the kidney damage in lupus nephritis.

In addition, immune cells, especially T lymphocytes, are required to kill cancer cells and protect the body from tumor formation.

"Unfortunately, the immune system is dysfunctional in cancers and fails to contain tumor growth and metastasis," Chimote says. The tumor microenvironment contributes to this failure of the immune system to fight cancer cells. "Our laboratory studies how ion channels contribute to the ineffective T lymphocyte function in solid tumors. Specifically, my work focuses on the response and adaptation of ion channels in T lymphocytes to the tumor microenvironment. This work has the potential to lead to using drugs that target ion channels as possible cancer therapy agents."

Chimote says the supportive and collaborative nature of Dr. Conforti's lab have added to the sense of purpose and satisfaction he gets from his research work. Not only does he praise his mentor ("She has shaped me into the scientist that I am," he says), and the division's multidisciplinary team and cooperation with colleagues across UC's Academic Health Center, but he also enjoys connecting with the undergraduate and graduate students, postdoctoral fellows and research staff who work alongside him.

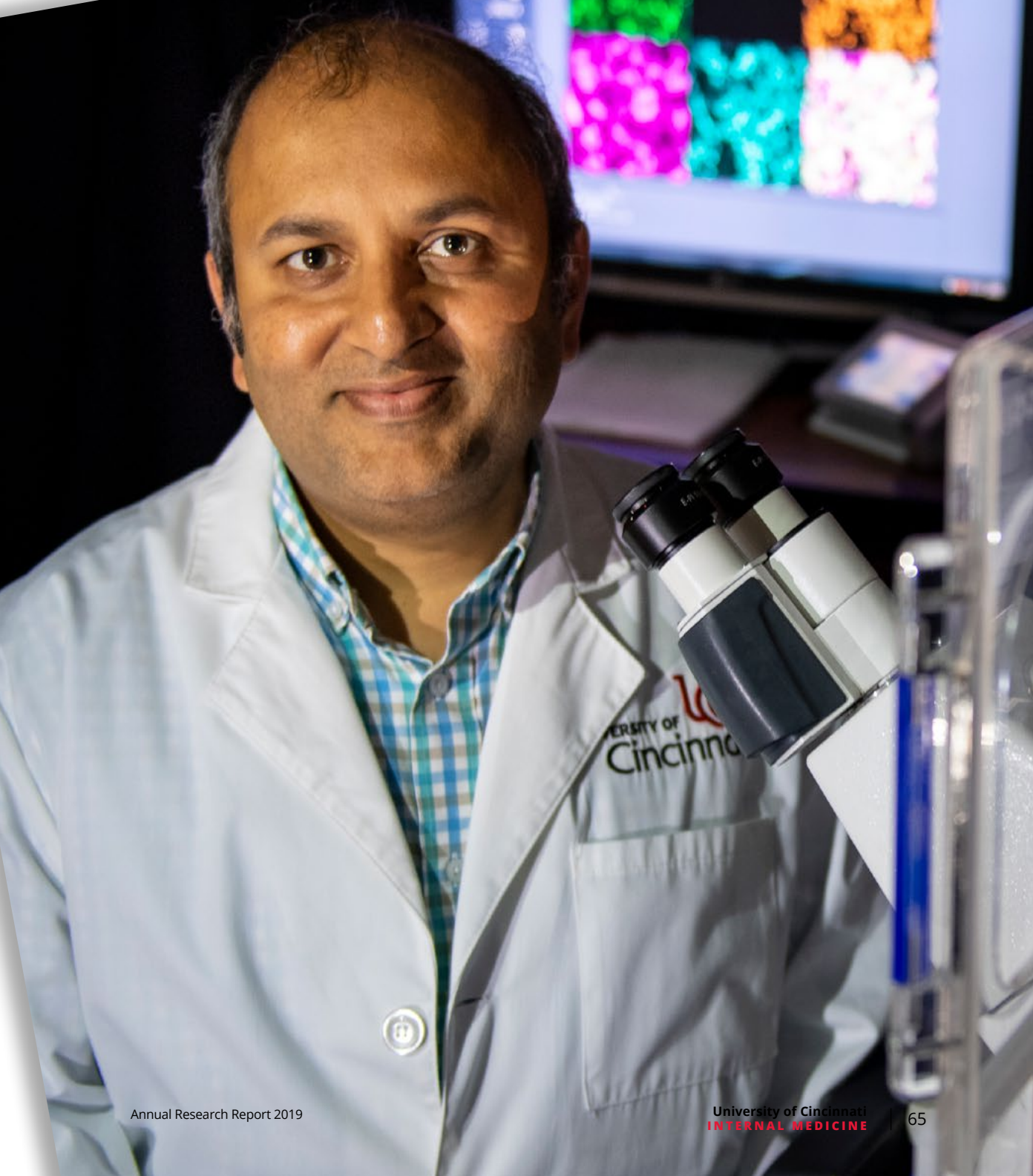
"I know it sounds cliché, but truthfully, our laboratory and our division are like a close-knit family," Chimote says. "I have the privilege to come to work every single day

"Research has taught me optimism. Even when experiments do not work, I do not lose hope."

with a diverse and fantastic group of individuals who have both celebrated success with me and supported me in times of personal and professional tribulations."

And each day, Chimote is driven not only by his desire to make a difference in the lives of real patients, but also by his unending quest for answers.

"What I love about research is that it challenges me, which gives me an opportunity to read in depth, come up with strategies to troubleshoot and often create out-of-the-box solutions to solve a problem," he says. "Research has taught me optimism. Even when experiments do not work, I do not lose hope. I love to master new techniques and adapt them to answer research questions." ●



DISCOVER & INNOVATE*Nephrology, Kidney CARE Program***PUBLICATIONS** July 1, 2018 thru June 30, 2019**IMPACT PUBLICATION**

- 1 **Shah S**, Leonard A, Meganathan K, Christianson A, **Thakar CV**. Gender and racial disparities in incident vascular access, and long term mortality in dialysis patients. *American Journal of Nephrology*. 2018 July 10; 48 (1):4-14.
- 2 Gupta A, Kuperman M, **Shah S**. Acute renal cortical necrosis as a re-emerging cause of acute kidney injury: A case report of crystal meth induced acute kidney injury. *Kidney International Reports*. 2018 July 7; 3(6): 1473-1476.
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- 4 **Shah S**, Topf J. Mentorship in the Digital Age: Nephrology Social Media Collective Internship. *Clinical Journal of American Society of Nephrology*. 2019 Jan 15.
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- 6 **Shah S**, Leonard A, Meganathan K, Christianson A, **Thakar CV**. Temporal trends in incident mortality in dialysis patients: focus on sex and racial disparities. *American Journal of Nephrology*. 2019 March 1;49:241-253.
- 7 **Shah S**, Gupta A. Hypertensive disorders of pregnancy. *Cardiology Clinic*. 2019 Aug; 37(3):345-354.
- 8 **Shah S. Thakar CV**. Diabetes/Kidney/Heart Disease (Editorial). *Cardiology Clinic*. 2019 Aug; 37(3).
- 9 **Shah S**, Christianson A, Verma P, Meganathan K, Leonard A, Schauer D, **Thakar CV**. Racial differences and factors associated with pregnancy in kidney transplant recipients *PLOS One*. 2019. Aug 9;14(8).

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- 12 **Shah S**, Leonard A, Harrison K, Meganathan K, Christianson A, **Thakar CV**. Outcomes and Racial and Sex Differences Associated with End-Stage Kidney Disease due to Acute Kidney Injury in the United States. 2019. (In review).
- 13 **Shah S**, Christianson A, **Thakar CV**, Kramer S, Leonard A. Contraceptive Use Among Women with End-Stage Kidney Disease on Dialysis in the U.S. (In review).
- 14 **Shah S**, Meganathan K, Harrison K, Christianson A, Leonard A, **Thakar CV**. Pregnancy-Related Acute Kidney: Racial Differences, Clinical Outcomes and Cardiovascular Events. 2019 (In Review).

- 15 **Shah S**. Hypertensive Disorders in Pregnancy. *Obstetric and Gynecologic Nephrology: Women's Health Issues in Patients with Kidney Disease*. Book Chapter (In press).
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- 17 Leino AD, Emoto C, Fukuda T, Privitera M, Vinks AA, **Alloway RR**. Evidence of a clinically significant drug-drug interaction between cannabidiol and tacrolimus. *Am J Transplant* 2019 Apr 23. doi: 10.1111/ajt.15398.
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- 22 Nicole A Pilch, Holly B Neadows, **Rita R Alloway**. *Monoclonal Antibodies in Solid Organ Transplantation. Pharmaceutical Biotechnology*, 5th edition, 2018.

IMPACT PUBLICATION

- 23 Keith Saum, **Begona Campos**, Diego Celdran-Bonafonte, Lalitha Nayak, Panjamaporn Sangwung, **Charuhas Thakar**, Prabir Roy-Chaudhury, A. Phillip Pwens. Uremic advanced glycation end products and protein-bound solutes induce endothelial dysfunction through suppression of Kruppel-like factor 2. *J Am Heart Assoc* 2018; 7:e007566.
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- 27 Kubiak RW, Zelnick LR, Hoffnagle AN, Alpers CE, Terry CM, Shiu YT, Cheung AK, deBoer IH, Robinson-Cohen C, Allon M, Dember LM, Feldman HI, Himmelfarb J, Huber TS, Roy-Chaudhury P, Vazquez MA, Kusek JW, Beck GJ, Imrey PB, Kestenbaum B. Hemodialysis fistula maturation study group (**Campos-Naciff B** part of HFM group). Mineral metabolism disturbances and arteriovenous fistula maturation. *Eur J Vasc Endovasc Surg* 2019 Apr 15. pii: S1078-5884(19)30053-X. doi: 1901016/j.ejva.2019.01.022 (Epub ahead of print).
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- 29 Dos Santos IF, Sheriff S, Amlal S, Ahmed RP, **Thakar CV, Amlal H**. Adenine acts in the kidney as a signaling factor and causes salt- and water-losing nephropathy: Early mechanism of adenine-induced renal injury. *Am J Physiol Renal Physiol*. 2019 316(4):F743-F757.
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- 31 Timmy Lee, MD, **Silvi Shah**; Anthony C. Leonard; P. Parikh, **C V. Thakar**. Acute Kidney Injury before Dialysis Initiation Predicts Adverse Outcomes in Hemodialysis Patients. (*Am J Nephrol*;47(6):427-434, 2018) (Impact Factor: 2.79)
- 32 **Shah, S MD**; Leonard, A. PhD; K Meganathan, MS; A Christianson, MS; **CV Thakar**. Pre-Dialysis Acute Care Hospitalizations and Clinical Outcomes in Dialysis Patients (PLOS One, Jan 2019) (Impact Factor: 2.76)
- 33 **Shah, S MD**; Leonard, A. PhD; K Meganathan, MS; A Christianson, MS; **C V Thakar**. Incident Mortality in Dialysis Patients : Focus on Sex and Racial Disparities (*Am J Nephrol*,2019;49(3):241-253) (Impact Factor: 3.16)

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- 36 Ingrid Dos Santos, Sulaiman Sheriff, Sihame Amlala, Rafeeq Ahmed, **C V Thakar, H Amlal**. Adenine acts in the kidney as a signaling factor and causes salt- and water-losing nephropathy: Early mechanism of adenine-induced renal injury (*Am J Physiol Renal Physiol*. April 2019)
- 37 Devika Nair, MD; Kurtis A Pivert; Adrian Baudy, MD; **Charuhas V Thakar, MD**. Perceptions of nephrology among medical students and internal medicine residents: a national survey among institutions with nephrology exposure (*BMC Nephrology, BMC Nephrol*. 2019 Apr 29;20(1):146).
- 38 Cheung AY, Genereux BM, Dautremont B, **Govil A**, Holland EJ. Surgical management of severe ocular surface injury due to Roman candle explosion accidents. *Ocul Surf*. 2018 Jul;16(3):294-300.
- 39 Cheung AY, Sarnicola E, Eslani M, Kurji KH, Genereux BM, **Govil A**, Holland EJ. Infectious Keratitis After Ocular Surface Stem Cell Transplantation. *Cornea*. 2018 Jul 10.
- 40 Cheung AY, Sarnicola E, Kurji KH, **Govil A**, Wright E, Brailey P, Holland EJ, et al. Cincinnati Protocol for Preoperative Screening and Donor Selection for Ocular Surface Stem Cell Transplantation. *Cornea*. 2018 Sep;37(9):1192-1197.
- 41 Cheung AY, Sarnicola E, Eslani M, Kurji KH, Genereux BM, **Govil A**, Holland EJ. Infectious Keratitis After Ocular Surface Stem Cell Transplantation. *Cornea*. 2018 Nov;37(11):1395-1399.
- 42 Cheung AY, Patel S, Kurji KH, Sarnicola E, Eslani M, **Govil A**, Holland EJ. Ocular Surface Stem Cell Transplantation for Treatment of Keratitis-Ichthyosis-Deafness Syndrome. *Cornea*. 2019 Jan;38(1):123-126.
- 43 Dao A, Cuffy M, Kaiser TE, Loethen A, Cafardi J, Luckett K, Rike AH, Cardi M, **Alloway RR, Govil A**, Diwan T, Sherman KE, Shah SA, Woodle ES. Use of HCV Ab+ NAT- donors in HCV naive renal transplant recipients to expand the kidney donor pool. *Clin Transplant*. 2019 Jul;33(7):e13598. doi: 10.1111/ctr.13598. Epub 2019 Jun 5.



Division of

Pulmonary, Critical Care and Sleep Medicine

The Division of Pulmonary, Critical Care and Sleep Medicine conducts both basic and clinical research programs focused primarily on development of pathogenesis-driven molecular diagnostics and therapeutics for rare lung diseases.



Frank McCormack, MD
DIVISION DIRECTOR

Research Focus Areas/Types:

In our basic research, we focus on studies that have a human clinic trial on the horizon, at least conceptually. Current laboratory projects are focused on:

- Innate and adaptive immunology of
 - Smoking
 - Trauma
- The role of collectins and lung epithelial cells in innate immune defense against inhaled bacteria, mycobacteria, fungi and viruses, especially influenza
- Preclinical studies in mouse models of:
 - Pulmonary Langerhans cell histiocytosis
 - Lymphangioleiomyomatosis
 - Pulmonary alveolar microlithiasis
 - Pulmonary alveolar proteinosis
 - Thermal trauma
 - Influenza
- Neutrophil NETs in cystic fibrosis
- Alveologenesis

Current clinical research focuses on:

- Investigator-initiated, multicenter, NIH supported, national and international randomized trials for lymphangioleiomyomatosis
- Investigator initiated phase II NIH combination therapy trial for lymphangioleiomyomatosis
- Pharmaceutical trials in pulmonary arterial hypertension, COPD, asthma, interstitial lung disease and critical care medicine
- Therapeutic Development Network and pharmaceutical trials in cystic fibrosis
- Phase 1 NIH trials of phosphate restriction and therapeutic EGTA lavage for pulmonary alveolar microlithiasis
- Safety and yield of cutting edge interventional and advanced diagnostic pulmonary procedures
- Investigator initiated study of the molecular pathogenesis of portopulmonary hypertension
- NIH funded federal network and pharmaceutical trials in Critical Care Medicine
- Investigator initiated home spirometry trials

Resources:

Bronchoscopy Core, Translational Pulmonary Science Center Tissue Repository, four Pulmonary Function laboratories, three Sleep Laboratories.

Investigators/Trainees:

We currently have 13 faculty investigators of about 30 total faculty members, 14 pulmonary fellows that conduct mentored research with faculty members, including one KO8 fellow, one IMStar fellow and one Rare Lung Disease Fellow.

Funding Types for Investigator Initiated Research:

- National Institutes of Health and other federal agencies—VA, NCATS, FDA, DOD
- Heart and lung societies, ALA, AHA, ATS
- Patient Advocacy Foundations
- Pharmaceutical companies—Pfizer, United Therapeutics

Mentoring:

We committed to the training of the next generation of basic scientists and clinician-investigators. We have a special interest in training physician-scientists who are comfortable both at the bench and in the clinic, and fully equipped with the skills, resources and personnel required to bring their research discoveries to trials.

Collaborations:

We are part of the Translational Pulmonary Science Center, a collaborative project between pulmonary groups at UC and Cincinnati Children’s Hospital Medical Center, and the Rare Lung Diseases Consortium.

DISCOVER & INNOVATE

Pulmonary, Critical Care & Sleep Medicine SPOTLIGHT

Patricia
Joseph, MD



When Professor Patricia Joseph, MD, started working in cystic fibrosis in the 1980s, average patient life expectancy was mid-20s. Today, patients with the disease typically live close to 40 years—and Joseph has been at the forefront of the research that led to such crucial improvements.

“Clearly the clinical trials have had a significant impact on disease progression,” says Joseph, who specializes in Pulmonary Diseases, Lung Disease, Cystic Fibrosis, Critical Care Medicine, Pulmonary and Critical Care Medicine. Joseph and her fellow researchers have been working on a series of CF modulatory therapies and the latest version, a triple combination therapy, was just approved by the FDA for about 90 percent of patients with CF. “These therapies significantly improve outcomes for patients with CF, extend life expectancy and improve quality of life. It is a game changer.”

Joseph is also involved in quality improvement studies to improve the transplant referral process for patients with end-stage CF lung disease and address patient engagement in self-care.

“The information gained from this research is readily adaptable to other disease processes,” she says.

Having grown up at a time when girls who were interested in biology were only encouraged to become nurses, Joseph credits her father with her passion for research.

“He saw that I was a curious child, and he encouraged questioning and developing a systematic approach to obtain answers,” she says. “By the time I was in middle school, he had provided me with tools from microscopes and telescopes to a chemistry set and helped me with science projects. He was surprised when I became a doctor instead of a nurse and was clearly proud of everything that I did.”

While Joseph believes that the science and research fields have come along toward welcoming women over recent decades, she also knows there is still work to be done to improve access.

“For young women considering research: stick with it,” Joseph says. “You might have to work hard, and it is not always easy to find the time for research or to have a solid life-work balance, but it is

worth it. I have been fortunate to work with mentors and colleagues who respected and supported my work. When you have that kind of support, take advantage of it.”

She also advises young doctors and researchers not to be afraid to ask for help along the way—and to hang tough for what can sometimes be a rough, but rewarding, ride. “There are many people who will be glad to help, if they know what you want and need. That has certainly been my experience in Internal Medicine and the Pulmonary Division at UC.

“And don’t get discouraged. Grants and manuscripts will be rejected; learn from the experience. When the data supports the theory, it is so gratifying. When the data doesn’t support the theory, the opportunity to think through why the results differ is the most interesting and intellectually stimulating part of research.” ●

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Mentor and Support

Aradhna Seth, MD



Non-alcoholic fatty liver disease is a leading indication for liver transplantation in the United States. “It is a disease that not only affects adults, but unfortunately also affects our youth, which will subsequently impact our future,” says Aradhna Seth, MD and clinical instructor in the Digestive Diseases Division.

During her fellowship, Aradhna Seth worked on a joint venture with Cincinnati Children’s Medical Center Gastroenterology Department to determine whether severity of obesity is associated with liver disease severity in children with fatty liver disease.

“We found that children with more obesity indeed have more severe liver disease,” says Seth, who considers the work among the most significant of her career so far. “Our hope is that this will not only lead to future studies,

but more importantly, help physicians better risk stratify their patients. If these adolescents can receive more aggressive, earlier intervention, perhaps they avoid things such as liver cancer or liver transplantation as adults.”

Seth attributes her passion and success so far in part to supportive mentors. Dr. Marialena Mouzaki serves as her mentor at Children’s and has been her partner in the critical liver disease research.

“She was incredibly patient as we picked through data for over 700 patients—even when it had to be reanalyzed!” Seth says. “Dr. Mouzaki was supportive throughout the tedious process of trying to publish. I could not have done that project without her guidance and encouragement.”

At UC, Seth credits Dr. Kenneth Sherman, head of the GI Division, with helping her secure opportunities to publish in the field

and with providing professional guidance. “I have always loved reading and writing; therefore, the chance to blend that passion with medicine was an enjoyable experience,” Seth says. “Dr. Sherman’s wealth of knowledge has been an inspiration to me. It’s important to find a mentor who is also a friend and confidante for any project to be truly successful.”

In her downtime, Seth enjoys traveling and learning about other cultures. “When I’m not able to travel, my ideal day off includes bicycling in nature, cooking a nice meal with my husband and unwinding with a good book,” she says.

When the white coat is on, though, Seth’s focus is squarely on continuing to find breakthroughs that will make tangible differences to real people: “I hope to continue to try to make a positive impact on patients’ lives.” ●

Seth attributes her passion and success so far in part to supportive mentors.

8th Annual Research Symposium

The Department of Internal Medicine hosted its eighth annual research symposium Friday, April 5, 2019, in the CARE/Crawley Atrium. Trainees submitted 38 posters and each trainee had an identified mentor. The theme for the event was “Building and Fostering Research for Discovery, Innovation and Impact.”

“This year’s symposium attracted overwhelming support from faculty and staff,” explains

Gregory Rouan, MD, chair of the Department of Internal Medicine. “Forty-five faculty volunteered to judge trainee research posters while staff submitted seven posters in the basic and clinical research categories. Our keynote speaker offered a thought-provoking address that was well attended.”

Rouan also offered thanks to all symposium participants and attendees and to Carl

Fichtenbaum, MD, associate chair for translational research, and Sakthivel Sadayappan, PhD, associate chair for basic research, both in the Department of Internal Medicine, for their roles in organizing the event. The keynote speaker was Robert Siliciano, MD, PhD, professor of medicine at Johns Hopkins Medicine in Baltimore, Maryland. Siliciano’s address was titled “Curing HIV Infection: Going Beyond N=1.” ●



Keynote speaker Robert Siliciano, MD, PhD

IMAGE GALLERY AWARDEES

BASIC RESEARCH IMAGES:

First place (\$100)

Kristen Engevik, Department of Pharmacology and Systems Physiology
Mouse Gastric Glands

Second place (\$50)

Andrew Dunn, PhD, Division of Digestive Diseases
A Hole New World

CLINICAL RESEARCH IMAGES:

First place (\$100)

Humna Abid Memon, MD, Division of Pulmonary, Critical Care and Sleep Medicine
Piercing of the Aorta

Second place (\$50)

Ameet Chimote, PhD, Division of Nephrology, Kidney CARE Program
The Soldiers of the Immune System

IMAGES IN MEDICINE:

First place (\$100)

Ameet Chimote, PhD, Division of Nephrology, Kidney CARE Program
Reflections

Second place (\$50)

Eric P. Smith, MD, Academic Research Services
On top of old twister

People’s Choice:

Ameet Chimote, PhD, Division of Nephrology, Kidney CARE Program
Fiery Sunset ●



**TRAINEE BASIC RESEARCH
POSTER AWARDS:**

First place (tie) (\$500)

Hannah M Russell, Division of Cardiovascular Health and Disease
Mentor: A. Phillip Owens, III, PhD
Fibrinogen Depletion Attenuates Angiotensin II-induced Abdominal Aortic Aneurysm

First place (tie) (\$500)

Mohit Kumar, PhD, Department of Pharmacology and Systems Physiology
Mentor: Sakthivel Sadayappan, PhD
Cardiac myosin binding protein c phosphorylation regulates calcium homeostasis

Honorable Mention (\$150)

Yiyang Lu, Department of Pathobiology and Molecular Medicine
Mentor: Jane Yu, PhD
Rapamycin associated pro-survival pathways that contribute to treatment refractory in Tuberous sclerosis complex (TSC)

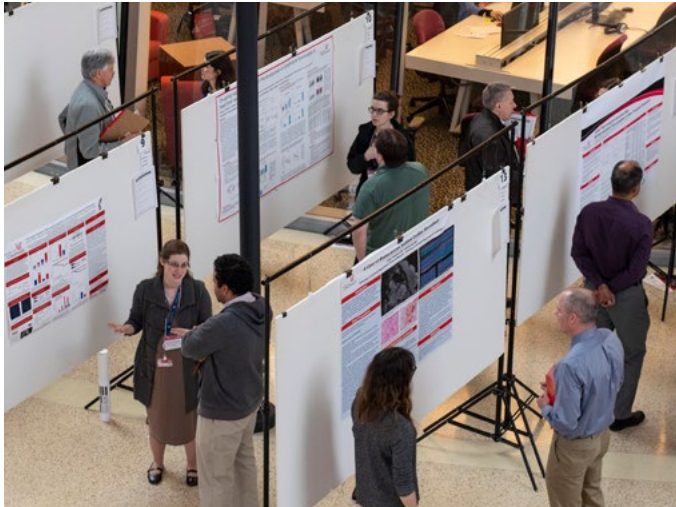
**TRAINEE CLINICAL RESEARCH
POSTER AWARDS:**

First place (\$500)

Masaaki Yamada, MD, Division of Nephrology, Kidney C.A.R.E. Program
Mentor: Charuhas V. Thakar, MD
Incidence and Consequence of Hyperkalemia in Solid Organ Transplant: An analysis of over 14,000 organ transplant recipients

Second place (\$250)

Nicole Wilson, PharmD, Division of Nephrology, Kidney C.A.R.E. Program
Mentor: Rita Alloway, PharmD
Early And Late Borderline Lesions Exhibit Differential Outcomes In Renal Transplant Recipients



Honorable Mention (\$150)

Malik Khurram Khan, MD, Division of Pulmonary, Critical Care and Sleep Medicine
Mentor: Muhammad Ahsan Zafar, MD, MS-CTR
Reducing Delirium in the Medical ICU - Implementation of a sleep hygiene bundle and standardizing sedation in the Medical ICU

**TRAINEE CLINICAL CASE REPORT
POSTER AWARDS:**

First place (\$500)

Yufei Dai, MD, Division of Endocrinology, Diabetes and Metabolism
Mentor: Robert Cohen, MD
Prolonged glycosuria after Canagliflozin discontinuation in a patient with euglycemic diabetic ketoacidosis

Second place (\$250)

Yazan Vwich, MD and Andrew Welch, DO, Division of Endocrinology, Diabetes and Metabolism
Mentor: Abid Yaqub, MD
Subclinical Cushing's Syndrome with Bilateral Adrenal Adenomas in MEN1

Honorable Mention (\$150)

Jillian Thompson, DO, Cardiovascular Health and Disease
Mentor: Tehmina Naz, MD
A Case of Isolated Cardiac Sarcoidosis

STAFF POSTER AWARDS:

First place (\$150)

Caterina Bartolacci, PhD, Division of Hematology Oncology
Mentor/PI: Pier Paolo Scaglioni, MD
FASN as a novel Therapeutic Target in Mutant KRAS Lung Cancer

Second place (\$100)

Begoña Campos-Naciff, PhD, Division of Nephrology, Kidney C.A.R.E. Program
Mentor/PI: Charuhas Thakar, MD
Kidney injury under oxidative stress release CD36 and CD47 microparticles

Honorable Mention (\$50)

Ameet Chimote, PhD, Division of Nephrology, Kidney C.A.R.E. Program
Mentor/PI: Laura Conforti, PhD
Failure to upregulate calmodulin underlies the suppressed KCa3.1 function and enhanced sensitivity to adenosine in CD8+ T cells of head and neck cancer patients •

Office of the Chair



Robert Baughman, MD

Professor
Office of the Chair

Our group has a registry to follow patients with advanced sarcoidosis. We are part of the Foundation for Sarcoidosis Research Clinical Studies Network, an eight center group focused on sarcoidosis.

Collaborators: Elyse Lower, MD

Keywords: Sarcoidosis; Pulmonary hypertension; Pulmonary fibrosis

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MENTOR & SUPPORT

Research Governance Committee (RGC)

Academic Research Services (ARS)

Retrovirology Reference Laboratory (RRL)

Research Governance Committee 2018-19

Bassam Abu Jawdeh, MD	Suzanne Morris, PhD
Rita Alloway, PharmD	Kelly Niederhausen
Hassane Amlal, PhD	Phillip Owens, PhD
Richard Becker, MD	Diego Perez-Tilve, PhD
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Mark Eckman, MD	Eric Smith, MD
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Teresa Larkin	Jason Winnick, PhD
Rajat Madan, MD, PhD	Trisha Wise-Draper, MD, PhD
Dennis McGraw, MD	Bruce Yacyshyn, MD

Academic Research Services

Yolanda Wess, MEd, RN, BSN
Eric Smith, MD
Emily Dobbs, MS, BA
Angela Duke, BS

Retrovirology Reference Laboratory

Joshua Agee
Molly Leibel
Anissa Moussa
Josette Robinson-Eaton

Reports

REPORTS

Active Awards June 2019

Active Awards June 2019 Department of Internal Medicine

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
ADMIN	Baughman	1012755 / 1011957-VUMC 42525 1R01HL117074-03	7/1/17 - 6/30/19	\$ 111,840	\$ 111,840
ADMIN	Baughman	1013987 / Validation of a Sarcoidosis Diagnostic Score (SDS)	7/1/18 - 6/30/20	\$ 80,000	\$ 40,000
CARD	DeMazumder	1013213 / Autonomic Remodeling and Modulation Therapy in Heart Failure and Sudden Death	2/1/17 - 1/31/20	\$ 747,000	\$ 248,997
CARD	DeMazumder	1014069 / Critical Health Assessment & Outcomes Study/Score during Sleep (CHAOS-sleep): a novel strategy for developing the personalized polysomnography-based mortality risk scoring system	4/2/18 - 6/30/19	\$ 240,533	\$ 240,533
CARD	DeMazumder	1014523 / 1014437 CHAOS for improved personalized prediction of impending adverse events before clinical presentation	8/1/18 - 7/31/19	\$ 135,561	\$ 135,561
CARD	Haworth	1012816 / Ultrasound-mediated oxygen scavenging for inhibition of reperfusion injury	8/1/16 - 6/30/21	\$ 630,964	\$ 158,759
CARD	Holland	1011436/2R01NS047603-9- Ultrasound Assisted Thrombolysis	8/15/14 - 7/31/19	\$ 2,764,157	\$ 545,685
CARD	Holland	1014971 / 1014086 / Echogenic Targeted Liposomes: Transfectin/Drug Delivery	4/15/17 - 3/31/21	\$ 1,420,596	\$ 249,880
CARD	Holland	1013888 / Chronic Thrombus ablation with histotripsy and thrombolytics	12/15/17 - 11/30/22	\$ 1,057,183	\$ 203,341
CARD	Knochelman	1014699 / 1013810 / CCHMC 134433 / R01 5HL121230-04	12/1/16 - 11/30/19	\$ 148,007	\$ 74,100
CARD	Kumar	1013477 / Fellowship AHA	7/1/17 - 6/30/19	\$ 53,688	\$ 26,844
CARD	McNamara	1013507 / Cross-bridging the Gap: Using the N-terminus of Cardiac Myosin Binding Protein-C to Restore Cardiac Function	7/1/17 - 6/30/19	\$ 106,532	\$ 53,266
CARD	Owens	1014105 / R01 The role of prostease activated receptor 2 in atherosclerosis	4/1/18 - 3/31/23	\$ 2,004,383	\$ 399,792
CARD	Owens	1015248 / Determine the Mechanism by which Rivaroxaban Reduces	1/28/19 - 10/31/19	\$ 64,000	\$ 64,000
CARD	Rubinstein	1011578/R01ES024744 Puga	10/11/14 - 4/30/20	\$ 634,385	\$ 110,485
CARD	Rubinstein	1013966 / Endocrine Disruptors and Heart Health (Wang)	2/1/18 - 1/31/23	\$ 148,906	\$ 29,853

* NOA Project Period Award Amount

† NOA Current Budget Period

CONTINUED

ACTIVE AWARDS JUNE 2019 CONTINUED

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
CARD	Rubinstein	1014836 / 1013872/1013168 / TRPV2agonism for Improved Cardiac Function in Patients with Single Ventricle Physiology	1/1/17 - 6/30/19	\$ 125,400	\$ 77,000
CARD	Sadayappan	1012990 / Umass Sub R01 AR067279- Sketal myosin-binding protein C	8/15/16 - 6/30/19	\$ 49,368	\$ 16,557
CARD	Sadayappan	1013068 / Molecular mechanism of hypertrophic cardiomyopathy in populations of South Asians descendants	8/15/16 - 12/31/19	\$ 1,356,218	\$ 409,311
CARD	Sadayappan	1013101 / Cardiac Mosin Binding Protein-C: Structure and Function	12/1/16 - 3/31/20	\$ 1,513,006	\$ 413,612
CARD	Sadayappan	1014622 / Brown R56 Ocean Research	9/1/18 - 8/31/19	\$ 160,127	\$ 160,127
CARD	Sadayappan	1014763 /American Heart Association - Summer Undergraduate Research Fellowship (AHA-SURF)	1/1/19 - 12/31/21	\$ 60,000	\$ 20,000
CARD	Sadayappan	1015065 / Hypertrophic cardiomyopathy in populations of South Asian descendents	5/1/19 - 4/30/20	\$ 249,999	\$ 249,999
CARD	Sanagala	1014321 / CHAOUS- ICU	7/1/18 - 6/30/19	\$ 100,000	\$ 50,000
CARD	Tranter	1012547 / Investigation of Human Antigen R (HuR) as a Novel Mediator of Cardiac Hypertrophy	7/1/16 - 3/31/21	\$ 1,777,500	\$ 355,500
CARD	Tranter	1014461 / Lisa Green T32	7/2/18 - 7/1/19	\$ 33,208	\$ 33,208
CARD	Viswanathan	1013476 / Unfolded Protein Response and ER-Stress in Hypertrophic Cardiomyopathy	7/1/17 - 6/30/19	\$ 104,060	\$ 52,216
DIG	Blackard	1011103 / 1010456 - R01 GM105414	5/2/13 - 4/30/20	\$ 1,496,850	\$ 299,434
DIG	Blackard	1014625 / Memorandum of Understanding-Instituto Nacional de Saude of Mozambique	8/1/18 - 7/31/20	\$ 5,000	\$ 2,500
DIG	Blackard	1014863 /Omics analysis of HIV during synthetic opioid exposure	4/1/19 - 12/31/21	\$ 1,181,407	\$ 471,768
DIG	Sherman	1012223-Hepatitis E in HIV-Infected Patients	9/23/15 - 8/31/20	\$ 1,374,995	\$ 274,999
DIG	Sherman	1014224 / 1012602 / 1012513-FIU 800005519-01UG/DA040381	8/1/15 - 5/31/20	\$ 1,065,268	\$ 167,648
DIG	Sherman	1012450-HIV Antiretroviral Therapy and Hepatic Injury	2/15/16 - 1/31/21	\$ 1,849,870	\$ 500,045
DIG	Sherman	1012724/ The Prioritize study: PCORI	3/1/16 - 8/31/21	\$ 258,209	\$ 57,402

* NOA Project Period Award Amount

† NOA Current Budget Period

CONTINUED

REPORTS

Active Awards June 2019

ACTIVE AWARDS JUNE 2019 *CONTINUED*

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
DIG	Sherman	1014330 / Subaward-R01 Maryland	2/1/18 - 5/31/22	\$ 101,987	\$ 23,932
DIG	Sherman	1014780 / A randomized, placebo-controlled pilot study of sulfasalazine for the treatment of Primary Sclerosing Cholangitis (SHIP)	10/1/18 - 9/30/19	\$ 17,500	\$ 17,500
DIG	Sherman	1014941 /ACTG Protocol Chair Salary Support - Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	12/1/18 - 11/30/19	\$ 19,999	\$ 19,999
DIG	Yachyshyn	1015070 / Pepto-bismol effects on enterotoxin intoxication in human colonoid model	5/1/19 - 7/31/19	\$ 19,868	\$ 19,868
DIG	Yacyshyn	1014353 /Study of a Prospective Adult Research Cohort with Inflammatory Bowel Disease (SPARC IBD)	7/13/18 - 7/12/20	\$ 256,060	\$ 126,755
DIG	Yacyshyn, Bruce	1013697 / 1013479 / Gene discoveries in subjects with crohn's disease of african descent	9/1/16 - 7/31/21	\$ 30,000	\$ 4,089
DIG	Yacyshyn, Bruce	1013317 / Comparative effectiveness of specific carbohydrate and mediterranean diets to induce remission in patients with crohns disease	3/20/17 - 7/31/19	\$ 25,800	\$ 8,600
ENDO	Cohen	1014391 / 1013659 (Yr 6)/1012844 (Yr 5)/1012028 (Yr 4)/1011388 (Yr 3)/1010749 (Yr 2) / 1010368 (Yr 1) - GRADE	1/1/12 - 7/31/20	\$ 2,054,669	\$ 456,273
ENDO	Cohen	1012554 / GRADE EDS	9/1/15 - 3/31/20	\$ 44,297	\$ 8,859
ENDO	Patel	1014536 / Role of Cholesterol Biosynthesis in Development	9/1/18 - 8/31/20	\$ 127,626	\$ 67,722
ENDO	Patel	1014536 / The Role of Abcg4 in Alzheimer's Disease	4/1/19 - 3/31/21	\$ 320,877	\$ 160,377
ENDO	Perez-Tilve	1013151-Novo Nordisk	1/1/19 - 12/31/20	\$ 1,226,596	\$ 1,226,596
ENDO	Perez-Tilve	1013205 and 1014532/ CohBar agreement 2018	1/1/19 - 12/31/20	\$ 395,554	\$ 395,554
ENDO	Winnick	1013196 / Effect of liver glycogen content on hypoglycemic counterregulation	9/1/16 - 5/31/21	\$ 1,806,944	\$ 338,135
GENMED	Martin	1013209 / Determining the optimal treatment strategy for patients who have chronic migraine with medication overuse	5/1/16 - 4/30/21	\$ 212,364	\$ 41,721
GENMED	Martin	1014451 / 1R03 HD094236-01-A1	8/7/18 - 7/31/20	\$ 22,954	\$ 11,477

* NOA Project Period Award Amount
 † NOA Current Budget Period

CONTINUED

ACTIVE AWARDS JUNE 2019 CONTINUED

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
HEMONC	Bogdanov	1012102-1011805 - 1 R01 CA190717-01Alternatively Spliced Tissue Factor and Pathobiology of Pancreatic Cancer	4/9/15 - 3/31/20	\$ 1,396,170	\$ 268,008
HEMONC	Bogdanov	1013415 / Disrupting tissue factor beta1 integrin axis in pancreatic cancer	7/1/17 - 6/30/19	\$ 300,000	\$ 150,000
HEMONC	Dong	1014339 / R21 Preclinical safety and efficacy assessment of a novel PCNA inhibitor for prostate cancer therapy	8/1/18 - 7/31/20	\$ 403,554	\$ 201,777
HEMONC	Dong	1006682 - NSF sub	09/1/08 - 8/31/19	\$ 1,200,000	\$ 61,767
HEMONC	Morris	1011153 / SWOG Purchase Service Agreement	6/9/14 - 6/30/20	\$ 415,654	\$ 122,821
HEMONC	Palascak	1015060 / 1014197 / 1013325 / 1012909 / 1012312/1011659 / 1010330/ 1011222/ 1011659-HFM/CDC	6/1/19 - 5/31/20	\$ 15,000	\$ 15,000
HEMONC	Palascak	1015026 / 1014171 / 1012610 / 1011826 / 1009394 / 1011157 / 1010442-HFM	6/1/19 - 5/31/20	\$ 147,150	\$ 147,150
HEMONC	Palascak	1015265 / 1014326 / 1013386 / 1012611 / 1011915 / 1011317- Cascade Home Svc	6/1/19 - 5/31/20	\$ 40,000	\$ 40,000
HEMONC	Palascak	1014588 /1013387 / 1012612 / 1011917 / HFM Cascade Pilot Prog	9/30/18 - 9/29/19	\$ 70,000	\$ 70,000
HEMONC	Palascak	1014951 /Hepatitis C Virus (HCV) Outcomes After Treatment with DAA in Patients with Bleeding Disorders (ATHN 5: HCV Outcomes Study)	2/1/19 - 9/30/20	\$ 51,040	\$ 11,000
HEMONC	Qi	1015024 / Preclinical studies of BXQ-350 therapy for DIPG	3/1/19 - 3/31/20	\$ 28,580	\$ 28,580
HEMONC	Sasaki	1011482-1 R01NS089815-01	9/30/14 - 8/31/19	\$ 1,670,215	\$ 337,450
HEMONC	Sasaki	1012868 / Synthetic Lethal Combination of KRP203/ Fingolimod with PI3K signaling for glioblastoma multiforme death by catastrophic vacuolization	9/1/16 - 8/31/19	\$ 448,208	\$ 197,104
HEMONC	Sasaki	1014351 / Targeting the metabolic vulnerability of GTP-metabolism in IDH mutated glioma	7/1/18 - 6/30/19	\$ 30,000	\$ 30,000
HEMONC	Sasaki	1011406 / Sasaki B* Cured	8/1/18 - 8/1/19	\$ 50,000	\$ 50,000

* NOA Project Period Award Amount

† NOA Current Budget Period

CONTINUED

REPORTS

Active Awards June 2019

ACTIVE AWARDS JUNE 2019 *CONTINUED*

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
HEMONC	Scaglioni	1014231 / Phase 2 trial of the fatty acid synthase (FASN) inhibitor TVB-2640 for advanced KRAS mutant non-small cell lung cancer (NSCLC)	3/1/18 - 2/28/21	\$ 72,138	\$ 24,046
HEMONC	Wise-Draper	1013730 / R21 DE027227	9/1/17 - 8/31/19	\$ 44,884	\$ 14,400
HEMONC	Wise-Draper	1013562 / CA160714P1: Ionic Mechanisms of Resistance to Immunotherapy in Head and Neck Cancer	7/1/17 - 6/30/20	\$ 533,631	\$ 173,922
HEMONC	Wise-Draper	1014740 / RSG-18-148-01 CCC-Oral Rinse Methylation for follow-up	1/1/19 - 12/31/22	\$ 539,148	\$ 134,787
IMM	Bernstein, D	1014538 / 1012869 / 1012019/1005596/ 1010751/1011196-R01 OH 008795-04-06	9/1/06 - 8/31/19	\$ 1,642,007	\$ 15,725
IMM	Bernstein, D	1014151 / 1013569 / 1012740 / 1011860 / 1009656 / 1010499/ 1011351-T32 AI060515-09-11	9/1/04 -8/31/19	\$ 1,361,995	\$ 297,200
IMM	Bernstein, J	1014416 / Gen Innovation and Goods sub	8/1/18 - 7/31/19	\$ 190,568	\$ 190,568
IMM	Bernstein, J	1014733 / Investigation of Pathomechanisms of Chronic Cough using in Vitro Approach	1/2/19 - 1/1/21	\$ 270,400	\$ 135,200
IMM	Finkelman	1011228 - 1 R01 AI113162-01	7/15/14 - 6/30/19	\$ 1,334,589	\$ 332,784
IMM	Finkelman	1012921 / Administrative Supplement to 5R01AI113162	8/22/16 - 6/30/19	\$ 100,000	\$ 100,000
IMM	Finkelman	1013239 / Wimpy antibody isotypes protect against antibody-mediated disease	1/25/17 - 12/31/21	\$ 1,833,210	\$ 365,342
IMM	Finkelman	1013811/ R01 supplement	7/1/17 - 6/30/19	\$ 151,080	\$ 151,080
IMM	Finkelman	1014203 / suB r01 Regulation of gene expression in the anaphylactic pathway	5/15/18 - 4/30/23	\$ 254,905	\$ 58,758
IMM	Finkelman	1014505 / Sub R01 Food Allergy and Goblet Cell Antigen Passages	5/10/18 - 4/30/20	\$ 19,860	\$ 12,095
IMM	Ridgway	1015106 / 1014172 / 1013504 / 1012808 / Mechanistic and Therapeutic Role of the CD137-CD137L	7/21/16 - 5/31/21	\$ 1,301,359	\$ 223,550
IMM	Shao	1014923 / Axl receptor tyrosine kinase, a potential therapeutic target in glomerulonephritis	4/1/19 - 3/31/22	\$ 709,889	\$ 240,565
INF	Cushion	1012928 / SUNY 73370 Sub R01	8/1/16 - 11/30/20	\$ 99,815	\$ 53,887

* NOA Project Period Award Amount

† NOA Current Budget Period

CONTINUED

ACTIVE AWARDS JUNE 2019 CONTINUED

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
INF	Cushion	1013660 / HHSN272201700034 / T1	7/14/17 - 7/13/24	\$ 3,500	\$ 3,500
INF	Cushion	1012927 / SUNY 73370 Sub R01 Pharmacy Sec	12/1/15 - 11/30/19	\$ 125,069	\$ 41,941
INF	Cushion	1014780 / 1 R01 HL146266-01 the role of sex in the life cycle and transmission of pneumo-cystis	2/1/19 - 1/31/23	\$ 1,932,006	\$ 489,101
INF	Deepe	1012686-Dendritic cell KLF2/ Notch Axis and Th2 Responses to Eukaryotic Pathogens	6/10/16 - 5/31/21	\$ 2,292,933	\$ 394,129
INF	Deepe	1013979 / HIF Regulation of Histoplasma Pathogenesis	2/15/18 - 1/31/23	\$ 2,002,500	\$ 400,208
INF	Deepe	1014290 & 1014322 / AI106269-06 GM-CSF-Induced Metal Sequestration and Histoplasma	7/1/18 - 6/30/23	\$ 2,668,531	\$ 540,530
INF	Fichtenbaum	1012968 / A Randomized Double-Blind, Phase 3 Study Comparing the Efficacy and Safety of High-Titer versus	6/20/16 - 6/30/19	\$ 195,200	\$ 106,600
INF	Fichtenbaum	1011786-MGH 225707 1U01HL023336-02 REPRIEVE A5332 and A5333	8/8/14 - 4/30/2021	\$ 627,150	\$ 150,000
INF	Fichtenbaum	1014653 ACTG Protocol Funds for all "A" protocols	1/1/14-11/30/20	\$ 1,721,971	\$ 350,522
INF	Fichtenbaum	1014680- BWH sub AI68636 Protocol and Core Funds ACTG	12/1/14 - 11/30/20	\$ 2,349,648	\$ 724,584
INF	Fichtenbaum	1014652-REPRIEVE Co-Chair	12/1/18 - 11/30/19	\$ 16,040	\$ 16,040
INF	Fichtenbaum	1015197 /1014152 / 1012586 / Randomized trial to prevent vascular events in HIV (REPRIEVE)	5/1/16 - 4/30/20	\$ 50,444	\$ 12,372
INF	Fichtenbaum	1013130 / Effect of pitavastatin on kidney function in HIV-infected person REPRIEVE kidney study	7/1/16 - 6/30/19	\$ 35,425	\$ 35,425
INF	Fichtenbaum	1013453 / HPTN 083 is a Phase 2b/3 Safety and Efficacy Study of Injectable Cabotegravir Compared to Daily Oral Tenofovir Disoproxil Fumarate/ Emtricitabine (TDF/FTC), for Pre-Exposure Prophylaxis	1/1/17 - 11/30/22	\$ 3,599,441	\$ 587,796
INF	Fichtenbaum	1014414 / 1013895 / HIV Cure	8/05/17 - 7/31/19	\$ 248,191	\$ 77,276
INF	Fichtenbaum	1014681 / Case Western Sub HPTN PF	12/1/18 - 11/30/19	\$ 298,887	\$ 298,887
INF	Fichtenbaum	1014654/ Exec committee_ UM1AI068636- ACTG Executive committee	2/1/18 - 11/30/19	\$ 12,030	\$ 12,030
INF	Kaul	1014292 / 1013632 / 1012677 / 1012148-MAETC 2018-2019	7/1/18 - 6/30/19	\$ 197,724	\$ 197,724

* NOA Project Period Award Amount

† NOA Current Budget Period

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REPORTS

Active Awards June 2019

ACTIVE AWARDS JUNE 2019 *CONTINUED*

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
INF	Kaul	1014479 /HIV Training for Professionals and Consumers-UC	7/1/18 - 6/30/20	\$ 553,153	\$ 274,194
INF	Madan	1011574-7 K08 AI108801	8/1/14 - 7/31/19	\$ 704,232	\$ 176,058
INF	Robertson	1014871 / 1014030 / 1013322 / 1012460 / 1011782 / 1011016-CHN Ryan White 5H76HA0011-20-00	4/1/14 - 3/31/21	\$ 3,143,935	\$ 685,326
INF	Smulian	1014043 / EVADE - A Phase 2 Proof-of-Concept Study to Evaluate the Efficacy and Safety of MED13902 in Mechanically Ventilated Patients for the Prevention of Nosocomial Pneumonia Caused by Pseudomonas aeruginos	3/36/18- 11/30/19	\$ 131,622	\$ 65,195
INF	Subramanian	1014965 / Metallothionein 3 shapes the polarization and metabolism of M2 macrophages	4/1/19 - 3/31/22	\$ 231,000	\$ 77,000
NEP	Abu Jawdeh	1013450 / Investigating Comoliment-Split Products as Potential Biomarkers for Antibody-Medicated Rejection in Renal Allografts	4/1/17 - 3/31/20	\$ 25,000	\$ 25,000
NEP	Abu Jawdeh	1014036 / UCSF Pearl II/ Feinstein- Pathway Exploration and Analysis in Renal Lupus	6/1/18 - 5/31/20	\$ 38,359	\$ 38,359
NEP	Amlal	1014632 / Mechanism(s) of adenine-induced fluid loss in the kidney	10/1/18 - 9/30/20	\$ 238,764	\$ 132,989
NEP	Amlal	1014834 / Cystinosis Research Foundation CRFF-2018	2/1/19 - 1/31/20	\$ 9,112	\$ 9,112
NEP	Conforti	1011985 /2 R01CA095286-10	7/1/15 - 6/30/20	\$ 1,498,123	\$ 288,944
NEP	Conforti	1013561 / CA160714P1: Ionic Mechanisms of Resistance to Immunotherapy in Head and Neck Cancer	7/1/17 - 6/30/20	\$ 533,619	\$ 176,172
NEP	Conforti	1013885 / Humanized mouse model of lupus nephritis	12/1/17 - 11/30/19	\$ 50,000	\$ 25,000
NEP	Shah	1014674 / DCI Reserve funds- Pregnancy outcomes in women with kidney treatment	11/1/18 - 10/31/19	\$ 25,000	\$ 25,000
NEP	Thakar	1014256 / Relypsa Inc Fellowship agreement	7/1/18 - 6/30/19	\$ 50,000	\$ 50,000
NEP	Thakar	1014366 / Grand Rounds	7/2/18 - 7/31/19	\$ 30,000	\$ 30,000

* NOA Project Period Award Amount
 † NOA Current Budget Period

CONTINUED

ACTIVE AWARDS JUNE 2019 CONTINUED

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
PULM	Borchers	1014743 / Natural Killer Cell Functions in Lymphangioleiomyomatosis	1/1/19 - 12/31/22	\$ 1,588,190	\$ 388,340
PULM	Cole	1014752 / Impact of Menstrual Cycle Related Variation in Lung Function on Disease Progression in LAM	9/1/18 - 8/31/21	\$ 10,000	\$ 3,333
PULM	Gardner	1014774 / 1013898 / Erythropoietin resistant anemia induced by thermal injury	1/1/18 - 12/31/21	\$ 958,000	\$ 239,500
PULM	Gupta	1014928 / 1012848 / 1012472-Improving Intensive Care Patient Safety Through EHR-based Algorithms	9/1/15 - 8/31/19	\$ 110,332	\$ 40,747
PULM	Gupta	1013553 / Resveratrol and sirolimus in LAM Trial (RESULT)	7/1/17 - 6/30/20	\$ 712,443	\$ 228,918
PULM	Gupta	1013919 / LAM Foundation-Home Spirometry to Evaluate Disease Progression and Treatment in Response	1/15/18 - 1/14/20	\$ 50,000	\$ 50,000
PULM	Gupta	1014981 / 1014837 / IL-31 Regulation of Immunopathology in Pulmonary Fibrosis	8/15/18 - 4/30/20	\$ 25,150	\$ 12,747
PULM	Gupta	1014930 / CCHMC R01 Cleveland	1/1/19 - 12/31/23	\$ 44,774	\$ 8,488
PULM	Hite	1015006 / 1014142 / 1012550 / 1011868/ 1011505/CCLCM-CWRU/U54HL123023-01 PETAL	6/17/14 - 4/30/21	\$ 181,231	\$ 53,569
PULM	Hudock	1013705 / The NET effect: Human CF epithelial responses to NETosis	9/1/17 - 8/31/22	\$ 846,560	\$ 169,312
PULM	Hudock	1014270 / CLOVERS: Crystalloid Liberal or Vasopressors Early Resuscitation in Sepsis	11/1/17 - 4/30/20	\$ 179,708	\$ 37,833
PULM	Indihar	1014900 / 1013873 / 1013361 / 1012969 / A CF C3N Care Model of the Future: Proposal for Piloting a Learning Health System	7/1/16 - 12/31/19	\$ 62,030	\$ 11,502
PULM	Indihar	1014762 /Improving research participation at UC Adult center	1/1/19 - 12/31/19	\$ 26,260	\$ 26,260
PULM	McCormack	1011731/1R01HL127455-01	4/1/15 - 3/31/20	\$ 2,593,162	\$ 394,535
PULM	McCormack	1014362 / 1013638 / 1012804 / 1011990 / 1011548/HL127672 RLDC Admin Unit	9/18/14 - 7/31/19	\$ 216,656	\$ 40,605
PULM	McCormack	1014361 / 1013639 / 1012805 / 1011989/1011549/HL12762 RLDC Project 1	9/18/14 - 7/31/19	\$ 476,052	\$ 88,339

* NOA Project Period Award Amount

† NOA Current Budget Period

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REPORTS

Active Awards June 2019

ACTIVE AWARDS JUNE 2019 CONTINUED

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
PULM	McCormack	1012851 / RLDC: Multicenter International durability and safety of sirolimus in LAM trial (MIDAS)	8/1/15 - 7/31/19	\$ 27,418	\$ 23,568
PULM	McCormack	1014329 / 01013475 /1013010 / Multicenter Interventional Lymphangiomyomatosis Early Disease Trial (MILED)-CCC	9/20/16 - 8/31/21	\$ 3,606,817	\$ 870,308
PULM	McCormack	1014497 / 1013112 / The molecular and genetic pathogenesis of LAM	9/21/16 - 8/31/19	\$ 331,800	\$ 110,600
PULM	McCormack	1015033 / 1014131 / 1013505 / CCHMC-WT1 regulation of pylmonary fibrosis	5/22/17 - 4/30/22	\$ 48,340	\$ 9,974
PULM	McCormack	1014886 / 1013850 / Therapeutic benefit of HSP90 inhibition in pulmonary fibrosis	9/30/17 - 8/31/20	\$ 132,715	\$ 43,149
PULM	McCormack	1013865 / Pulmonary Epithelial Dynamics and Innate Host Defense	12/7/17 - 11/30/21	\$ 2,026,868	\$ 482,196
PULM	McCormack	1014180 / Single Cell RNA Sequencing in LAM	6/1/18 - 5/31/20	\$ 80,000	\$ 40,000
PULM	McCormack	1015017 / Prevention of Preterm Birth Using the Collectin Surfactant Protein A (SP-A)	4/1/19 - 3/31/23	\$ 170,421	\$ 56,566
PULM	Indihar	Implementation of Outpatient Clinical Pharmacy Services: Award for a Pharmacist abd or/Pharmacy Technician	4/1/19 - 3/31/22	\$ 168,480	\$ 56,160
PULM	Yu	1013642 / Targeting prostaglandin biosynthesis and action in lymphangiomyomatosis	8/1/17 - 6/30/20	\$ 1,843,109	\$ 601,109
PULM	McCormack	1015192 / A population-based chort study to monitor safety and effectiveness of sirolimus in patients with sporadic lymphangiomyomatosis	5/1/19 - 4/30/21	\$ 250,000	\$ 158,443
PULM	Yu	1014554 / Single-cell- RNA sequencing for identifying differential responses to sirolimus therapy in LAM	9/1/18 - 8/31/19	\$ 10,000	\$ 10,000
PULM	Yu	1013918 / Million Dollar Bike Ride	1/1/18 - 6/30/19	\$ 50,060	\$ 50,060
PULM	Yu	1014662 / Quantification of plasma levels of sphingolipids and ceramides in patients with TSC	11/1/18 - 10/31/19	\$ 20,000	\$ 20,000

* NOA Project Period Award Amount

† NOA Current Budget Period

New Grants FY 2019 Department of Internal Medicine

DIVISION	PI	TITLE	AGENCY	PROJECT PERIOD	DIRECT COST
ADMIN	Baughman, Robert	Defining Minimal Clinical Important Differences in Treatment Trials of Pulmonary Sarcoidosis	Foundation for Sarcoidosis Research -	7/1/18 - 6/30/19	\$ 40,000.00
ADMIN	Soleimani, Manoocher	Wood Smoke and Chronic Mucous Hypersecretion	Lovelace Respiratory Research Institute	12/1/18 - 11/30/21	\$ 120,000.00
CARDIO	Sanagala, Neha	CHAOS-ICU	AHA 18AMTG34280046	7/1/18 - 6/30/20	\$ 100,000.00
CARDIO	DeMazumder, Deeptankar	CHAOS for improved personalized prediction of impending adverse events before clinical presentation	NCAI and Accelerator Award	8/1/18 - 7/31/19	\$ 155,000.00
CARDIO	Jahanpanah, Newsha	Modulating blood oxygen levels using acoustic droplet vaporization	ASA	9/1/18 - 8/31/19	\$ 500.00
CARDIO	Owens, Phil	Determine the Mechanism by which Rivaroxaban Reduces Atherosclerosis in LDLR/Mice	Bayer	01/28/19 - 10/31/19	\$ 40,000.00
CARDIO	Sadayappan, Sakthivel	Myoarcitectural Basis of Heart Failure	Brown Subaward - R56HL139680	12/1/18 - 11/30/19	\$ 100,000.00
CARDIO	Sadayappan, Sakthivel	AHA - Summer Undergraduate Research Fellowships (SURF)	AHA 19UFEL34380251	1/1/19 - 12/31/21	\$ 60,000.00
CARDIO	Sadayappan, Sakthivel	Hypertrophic cardiomyopathy in populations of South Asian descendants	MyoKardia	5/1/19 - 4/30/20	\$ 227,272.73
CARDIO	Tranter, Mike	T32 HL1252074	CCHMC - T32	7/2/18 - 7/31/19	\$ 33,208.00
DIG	Blackard, Jason	Omics analysis of HIV during synthetic opioid exposure	NIH R61-DA048439	3/1/19 - 12/32/21	\$ 1,147,241.00
DIG	Yacyshyn, Bruce	Study of Prospect	Crohn's & Colitis Foundation	7/13/18 - 7/12/20	\$ 221,143.00
DIG	Yacyshyn, Bruce	Pepto-Bismol effects on enterotoxin intoxication in human colonoid model	UCRI/P&G	5/1/19 - 7/31/19	\$ 15,225.00
DIG	Sherman, Ken	A randomized, placebo-controlled pilot study of sulfasalazine for the treatment of Primary Sclerosing Cholangitis	Brigham and Women's Hospital	1/1/19 - 12-31-19	\$ 10,500.00
ENDO	Patel, Shailendra	Role of Cholesterol Biosynthesis in Development	NIH - R03HD094882	9/1/18 - 8/31/20	\$ 197,037.00
ENDO	Patel, Shailendra	The Role of Abcg4 in Alzheimer's Disease	NIH - R03AG063322	4/1/19 - 1/31/21	\$ 200,000.00
HEM	Dong, Zhongyun	Preclinical safety and efficacy assessment of a novel PCNA inhibitor for prostate cancer therapy	NCI - R21CA223049	8/1/18 - 7/31/20	\$ 239,250.00
HEM	Sasaki, Atsuo	Targeting the metabolic vulnerability of GTP-metabolism in IDH mutated glioma	Ohio Cancer Research	7/1/18 - 6/30/19	\$ 27,272.73

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New Grants FY 2019

NEW GRANTS FY 2019 CONTINUED

DIVISION	PI	TITLE	AGENCY	PROJECT PERIOD	DIRECT COST
HEM	Sasaki, Atsuo	Synthetic Lethal Induction of Methuosis	B* Cured	11/19/18 - 11/19/19	\$ 50,000.00
HEM	Palasak, Joseph	ATHN2017-ATHN7	Genentech	10/1/18 - 3/31/24	\$ 9,500.00
HEM	Palasak, Joseph	ATHN2016-ATHNS-434-1	Georgia	2/1/18 - 9/30/20	\$ 20,350.00
HEM	Qi, Xiaoyang	2019 ISRA-Preclinical studies of BXQ-350	Bexion Pharmaceuticals	3/1/19-3/31/20	\$ 28,579.00
HEM	Wise-Draper, Trisha	Oral Rinse Methylation for follow up	ACS RSG-18-148-01	1/1/19 - 12/31/22	\$ 112,323.00
IMM	Bernstein, Johnathan	Investigation of Pathomechanisms of Chronic Cough Using In Vitro Approach	Merck	1/2/19 - 1/1/21	\$ 135,200.00
IMM	Shao, Wenhai	Axl receptor tyrosine kinase, a potential therapeutic target in glomerulonephritis	NIH-R01DK116789	4/1/19 - 3/31/20	\$ 450,000.00
INF	Apewokin, Senu	John Hopkins University -HOPE in action	John Hopkins University Bloomberg School	8/1/18 - 7/31/19	\$ 3,540.95
INF	Cushion, Melanie	1 R01 HL146266-01-The role of sex in the life cycle & transmission of Pneumocystis	NIH R01-HL146266	2/1/2019 - 1/31/2023	\$ 1,294,742.00
INF	Cushion, Melanie	NIAID Task Order 75N930	NIH	1/15/19 - 1/14/20	\$ 2,500.00
INF	Deepe, George	GM-CSF-Induced Metal Sequestration and Histoplasma	NIAID - 2R01AI106269	7/1/18 - 6/30/19	\$ 1,689,160.00
INF	Fichtenbaum, Carl	ACTG AEC	CWRU Sub 5u01AI131295	8/1/18 - 7/31/19	\$ 114,902.00
INF	Kaul, Pamposh	ODH/HRSA HIV Edu-HIV Training for Professional	ODH/HRSA	7/1/18 - 6/30/19	\$ 217,614.06
INF	Subramanian, Kavitha	AHA 19CDA34770022	AHA	4/1/19 - 3/31/22	\$ 210,000.00
NEP	Amlal, Hassane	Mechanism of adenine-induced fluid loss in the kidney	Dialysis Clinic, Inc	10/1/18 - 9/30/20	\$ 273,742.92
NEP	Amlal, Hassane	Cystinosis Research Foundation CRFF-2018	Cystinosis Research Foundation	2/1/19 - 1/31/20	\$ 9,112.00
NEP	Shah, Silvi	Pregancy Outcomes in Women with Kidney Transplant	Dialysis Clinic, Inc	11/1/18 - 10/31/19	\$ 25,000.00
NEP	Thakar, Charuhas	Relypsa Inc Rellowship Agreement	Relypsa	7/1/28 - 6/30/19	\$ 50,000.00
NEP	Thakar, Charuhas	Grand Rounds	Dialysis Clinic, Inc	7/2/18 - 7/31/19	\$ 30,000.00
PULM	Borchers, Michael	Natural Killer Cell Functions in LAM	NIH - R01HL141236	1/1/19 - 12/31/22	\$ 1,043,200.00
PULM	Cole, Adam	Impact of Menstrual Cycle Related Variation in Lung Function on Disease Progression in LAM	The LAM Foundation	9/1/18 - 8/31/21	\$ 10,000.00
PULM	Indihar, Veronica	TDN Principle Investigator Protected Effort	CFF	1/1/19 - 12/31/20	\$ 26,260.00

NEW GRANTS FY 2019 CONTINUED

DIVISION	PI	TITLE	AGENCY	PROJECT PERIOD	DIRECT COST
PULM	Gupta, Nishant	R01 HL143011 Validating Quantitative Magnetic Resonance	CCHMC - sub	1/1/19 - 12/31/20	\$ 5,292.00
PULM	McCormack, Francis	EH18-254 R01HD096209	North Star Univ Health System	4/11/19 - 3/31/20	\$ 35,292.00
PULM	Yu, Jane	Single-Cell-RNA Sequencing for Identifying Differential Responses to Sirolimus Therapy in LAM	The LAM Foundation	9/1/18 - 8/31/19	\$ 10,000.00
PULM	Yu, Jane	Quantification of plasma levels of sphingolipids and ceramides in patients with TSC	National Tuberous Sclerosis Association, Inc.	11/1/18 - 10/31/19	\$ 20,000.00
TOTAL					\$ 8,809,959.39

ARR ADMIN TEAM

Acknowledgements

Annual Research Report Committee 2018-19

Amanda Chalifoux
Emily Dobbs, MS, BA
Angela Duke, BS (*co-lead*)
Colleen Kelly
Kelly Niederhausen
Eric Smith, MD
Yolanda Wess, MEd, BSN, RN (*lead*)

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Connie Adkins
Rachel Baker
Kimberly Benna
Beverly Cunningham
Angela Duke
Lisa Latham
Shakeith Lawson
Gayle Pollack
Mike Ruebuch
Christina Salyers

IMAGE, FACING PAGE:

"A Hole New World"

Development of the Yamanaka Factors revolutionized biology by somatic cell reprogramming into pluripotent stem cells (iPSCs), allowing for biological and medical investigation previously unattainable. Pictured here is a human liver organoid (HLO) created from a single, differentiated iPSC showing the characteristic lumen (hollow center). These organoids are potent platforms for research in fundamental biology and personalized medicine. Nuclei are shown in blue, fluorescently tagged polymers in green, mitochondria in red, and the structural protein F-actin in orange. This image was acquired on a Nikon A1R GaSP Inverted Confocal Microscope. CCHMC Confocal Imaging Core.

2019 Image Gallery awardee, Basic Research Images

CREDIT: **Andrew Dunn, PhD**, Gastroenterology

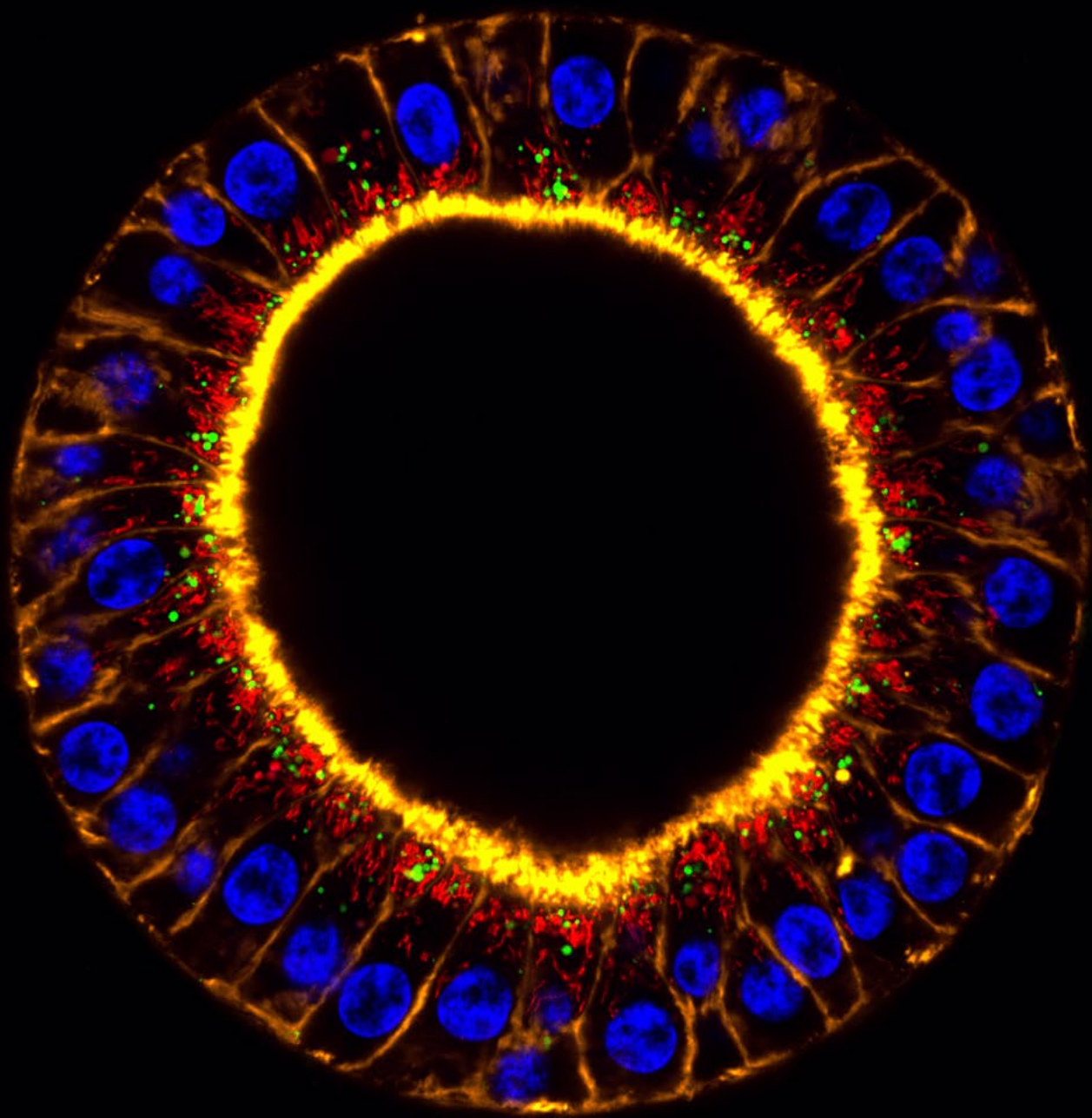
IMAGE, BACK COVER (LOWER PORTION, PARTIAL IMAGE):

"Piercing of the Aorta"

54 year old male with history of chronic thromboembolic pulmonary hypertension and recurrent deep venous thrombosis, who was on therapeutic anti-coagulation and status-post inferior vena cava filter insertion, presented with abdominal pain 4 years after insertion of filter. Computed tomography angiography of abdomen and pelvis done on admission, demonstrated left lateral leg of filter extending into the lumen of the infra-renal abdominal aorta.

2019 Image Gallery awardee, Clinical Research

CREDIT: **Humna Abid Memon, MD**, Division of Pulmonary, Critical Care and Sleep Medicine





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