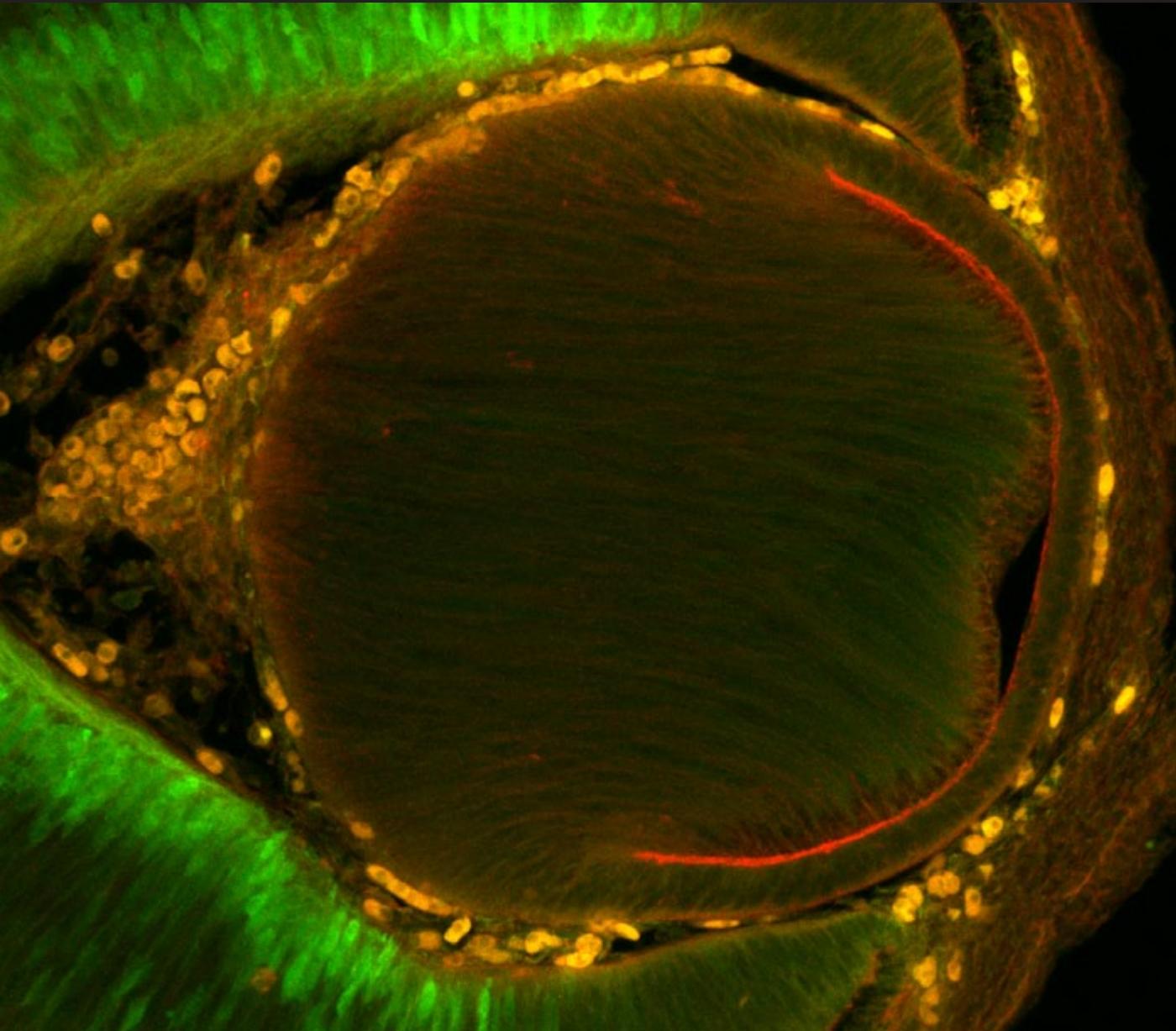


ANNUAL RESEARCH REPORT

ACADEMIC YEAR 2017-2018



TOTAL GRANTS

135 21 percent are held by primary investigators with R01 awards

TOTAL FUNDING

\$86.8 million

OVER \$10.3 million
in NEW AWARDS IN FY2018

CLINICAL TRIAL REVENUE (FY2018)

\$4.8 million

INCREASE IN TOTAL FUNDING (from FY2017 to FY2018)

7.3%

SUCCESS RECEIVING FUNDING (FY2018)

25%

INTRAMURAL FUNDING (FY2018)

\$216,000

ON THE COVER:

"Atypical Opsins in the Early Eye"

Developing mouse eye at embryonic day 13 demonstrating the atypical photoreceptor, Opn3 (aka encephalopsin), in green in the immature retina. As the retinal cells divide, they migrate up and down between the vitreal (inner) and ventricular (outer) surfaces. Phalloidin, in red, highlights actin, particularly in the developing lens and in extraocular muscles. Autofluorescent nucleated red blood cells accent the image in yellow.

This image was taken using a Zeiss LSM 700 Confocal Microscope with a Plan-Apo 20x/0.8 M27 objective.

CREDIT:

Brian Upton, BS, Molecular and Developmental Biology Graduate Program, UC/Cincinnati Children's Research Foundation

Building and Fostering Research

Department of Internal Medicine

ANNUAL RESEARCH REPORT

ACADEMIC YEAR
2017-2018

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

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Building and Fostering Research

Just as the University of Cincinnati is defining a new action paradigm in its strategic direction, Next Lives Here, the Department of Internal Medicine is entering a new era of innovation and impact. Since 2011, our strategic plan in the Department of Internal Medicine (DOIM) has prioritized our research mission. Our department is the second largest in the College of Medicine, and it consists of nine divisions and greater than 280 faculty as clinicians, scientists and investigators. We are the largest unit of full-time geographic faculty in the college and responsible for over 25% of the college's funded research awards and 38% of the college's clinical trial income.

Supporting and Fostering Research through Funded Initiatives and Formal Programs

Associate Chair for Research Manoocher Soleimani, MD, and Associate Chair for Translational Research Carl Fichtenbaum, MD, and other faculty and staff on the Research Governance Committee and Academic Research Service staff deserve a great deal of credit for coordinating and preparing our Annual Research Report, monthly Research Conferences, annual Research Symposium and intramural Research Awards. These departmental research programs and initiatives foster collaboration and innovation among trainees, faculty and others.

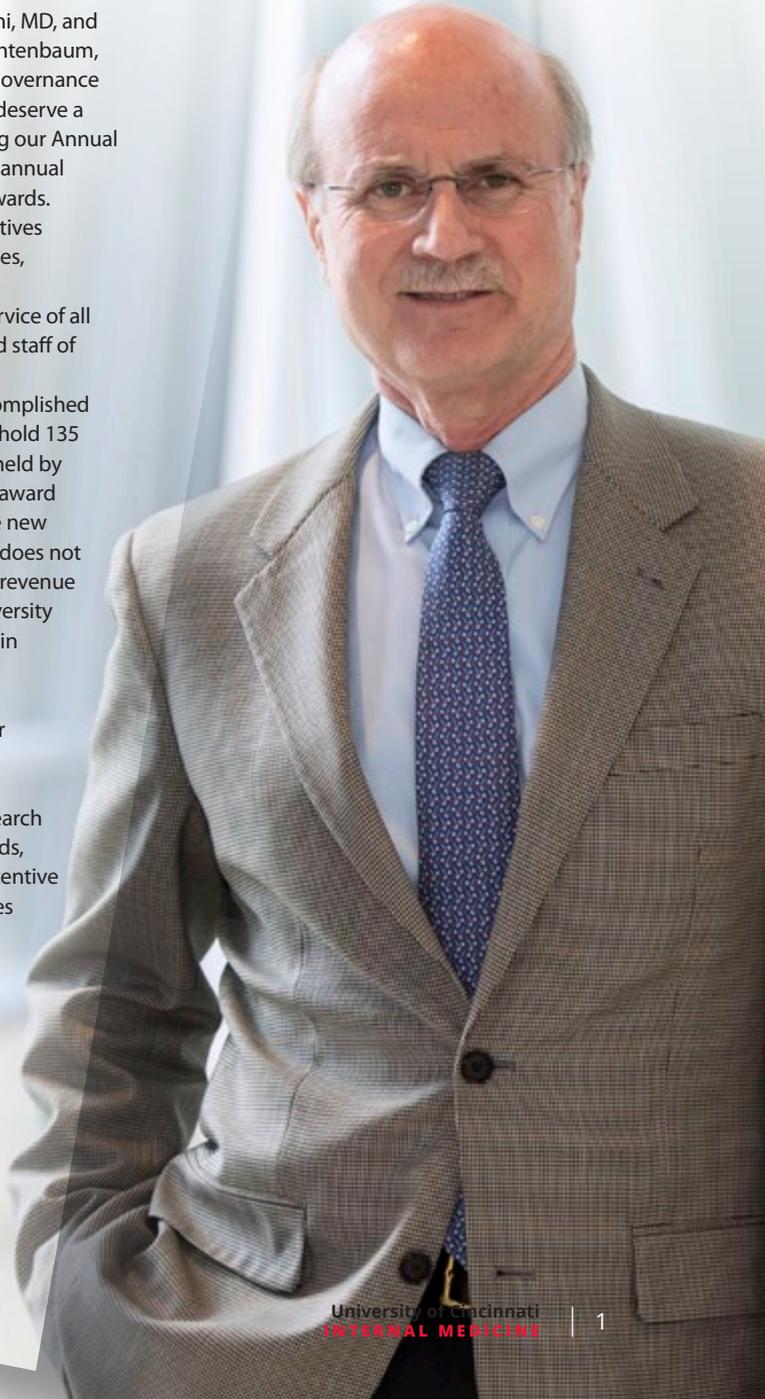
We appreciate the commitment, work and service of all the faculty, investigators, researchers, trainees and staff of the nine divisions of the DOIM.

Over the past year, a great deal has been accomplished in our research mission. Specifically, we currently hold 135 total grants in the department 21% of which are held by primary investigators with R0-1 awards. The total award amount is \$86,869,756 with \$10.3 million of these new grants awarded in FY18. This total award amount does not include approximately \$4.8 million in clinical trial revenue DOIM investigators have brought in through University of Cincinnati Physicians, nor the nearly \$4 million in research funding held by our investigators at the VAMC this past year.

Most importantly, we continue to support our investigators with intramural funding such as the IM-STAR (Internal Medicine Scholars Training for Academic Research) pathways, distinguished research achievement awards, junior and senior pilot awards, challenge awards, bridge funding, submission incentive awards and others. These very successful initiatives have been critical for maintaining legitimate research activity, providing seed money for garnering external awards, preliminary data, presentations and publications. This investment of \$2.7 million has seen a return of \$22 million in external awards.

Sincerely,

Gregory Rouan, MD
Gordon and Helen Hughes Taylor Professor
of Medicine
Chair, Department of Internal Medicine



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

A: 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.

CARL FICHTENBAUM, MD

Associate Chair for Translational Research



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 page 4*) 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. ●

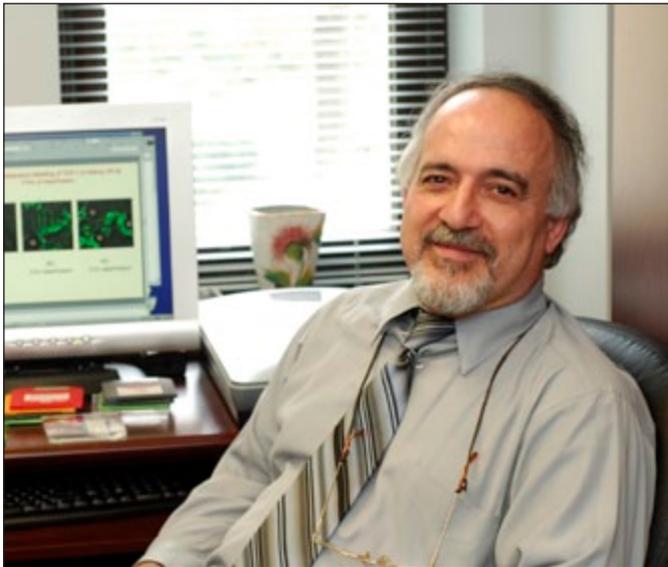
Q: How has the environment for research expanded for faculty and trainees over the past five years?

A: The promotion of research in academic institutions is a challenging task, which requires the allocation of multiple resources, coordinated plans and dedicated individuals. One resource, which has been critical

to the success of the research mission at the University of Cincinnati Department of Internal Medicine, is the establishment of intramural awards for faculty over the past five years.

MANOOCHER SOLEIMANI, MD

Associate Chair for Research



Every year the Research Office of the Department has provided research funding for senior and junior faculty as well as for fellows transitioning into faculty on a continuous basis. The Research Office provides two awards for junior faculty, two awards for senior faculty and one or two (Rhen Family) awards for fellows or newly recruited faculty on an annual basis.

Over the last 3 years, the Research Office has established a new annual award (Collaborative Award) with the intention of promoting multidisciplinary research among faculty. Starting this year, the Research Office has embarked on a new initiative with the intention of supporting novel or hot topic research ideas by faculty. Not to forget, the Department has been providing funding on an annual basis for a senior investigator (Distinguished Award) who has shown continued success in securing extramural funding.

Coupled with a diligent review process for evaluating the applications by faculty, these intramural awards have played a critical role in the advancement of the research mission of the department. ●

One resource, which has been critical to the success of the research mission at the University of Cincinnati Department of Internal Medicine, is the establishment of intramural awards for faculty over the past five years.

Research Initiative Supporting Excellence-UC (RISE-UC)

The Department of Internal Medicine (DOIM) created the Research Initiative Supporting Excellence-UC (RISE-UC) in 2012 to foster the development and success of our researchers. By listening to the faculty needs, we created a platform of people and programs to support researchers and trainees. Our aim is to assist them in reaching their research career goals. RISE-UC is a systematic and strategic approach to building a vision of the future of research in the DOIM. RISE-UC heralded the development of the Academic Research Service (ARS) to provide

support to all researchers in the DOIM in 2016.

The ARS is the one-stop shop for all things research. It provides support, planning and editing for grant applications and assists with funding searches and manuscript preparation. It collects and disseminates information that celebrates the successes of researchers and tracks the metrics of these endeavors. Grant training sessions, monthly research conferences and an annual departmental symposium round out the many resources and tools ARS uses to assist in making faculty

By listening to the faculty needs, we created a platform of people and programs to support researchers and trainees.

and trainees research ideas a reality.

Through the ARS and DOIM leadership, seed grants provide funding for innovative ideas with a 10:1 return on investment. RISE-UC also created the J-Club to nurture junior faculty and develop the next generation of DOIM researchers.

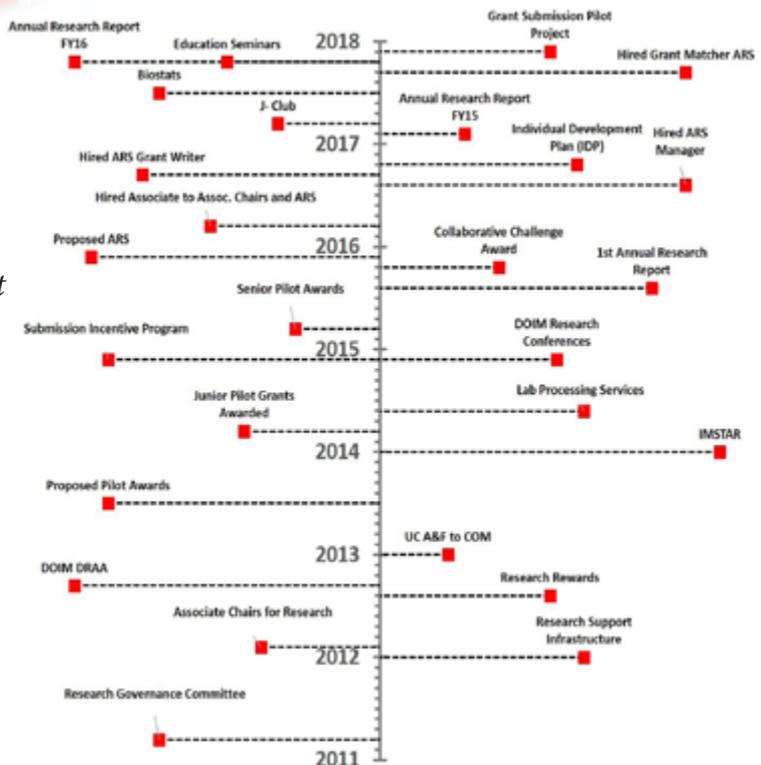
We are far from done! RISE-UC will continue to innovate and expand with the goal of enhancing the professional experiences of all researchers in the DOIM, as we strive to meet the needs of our community. ●



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

Carl Fichtenbaum, MD

We are far from done!





Impact

Year at a Glance

JULY 2017

Expanded biostatistician services support (Roman Jandarov, PhD) to include all department faculty and trainee researchers

AUG 2017

Nishant Gupta, MD; Trisha Wise-Draper, MD, PhD; Laura Conforti, PhD, Charuhas Thakar, MD and Sakthivel Sadayappan, PhD each highlighted as CoM **Gallery of Awardees** for receiving external grant awards of more than \$100,000 annually



Arnold Schwartz, PhD, honored with the 2017 **Medal of Merit** from the International Academy of Cardiovascular Sciences



Jane Yu, PhD, received a **three-year grant of \$1.15 million** in direct costs from the National Heart Lung Blood Institute for the research project "Targeting Prostaglandin Biosynthesis and Action in LAM."



SEPT 2017



Gregory Rouan, MD, installed as the 2017-2018 **president of the Academy of Medicine of Cincinnati**

OCT 2017

Emily Dobbs, MS, BA (grant matching, manuscript and document editing services) **hired as Research Associate with Academic Research Services** (ARS) to increase faculty and trainee support



NOV 2017

John Morris, MD, honored as **Clinical Trialist of the Year**



DOIM AY 2016-2017 Annual **Research Report** released

Vladimir Bogdanov, PhD, Jane Yu, PhD, and Kristin Hudock, MD each highlighted as CoM **Gallery of Awardees** for receiving external grants awards of more than \$100,000 annually



ARS staff initiated **Grant Training sessions** to assist faculty and trainees in mastering the steps to submitting well planned, timely and competitive funding proposals



DEC 2017

Initiation of CoM A&F and **DOIM pilot project to improve grant submission timeliness**

DEC 2017

Frank McCormack, MD, received a **four-year grant of \$1.275 million** in direct costs from the National Heart Lung, Blood Institute for the research project "Pulmonary Epithelial Dynamics and Innate Host Defense"



FEBRUARY 2018

Philip Owens, PhD and **Trisha Wise-Draper, MD, PhD**, were chosen as recipients of the College of Medicine 2018 **Research Rising Star Award**



George Deepe, MD, received a **five-year grant of \$1.25 million** in direct costs from the National Institute of Allergy and Infectious Diseases for the research project "HIF Regulation of Histoplasma Pathogenesis."



MARCH 2018

Robert Cohen, MD, **Frank McCormack, MD** and **Carl Fichtenbaum, MD** were each highlighted as College of Medicine's **Gallery of Awardees** for receiving grants totaling more than \$100,000 annually



APRIL 2018

Frank McCormack, MD, awarded the **George Rieveschl Jr. Award for Distinguished Scientific Research** by the University of Cincinnati



APRIL 2018

Bruce Yacyshyn, MD; **Mary Beth Yacyshyn, PhD**, **Sakthivel Sadayappan, PhD**, **Jonathan Bernstein, MD**, **George Deepe, MD** and **Dylan Steen, MD** were each recognized in the CoM **Gallery of Awardees** for receiving grants totaling over \$100,000 annually



The **Seventh Annual DOIM Research Symposium and Trainee Poster Competition** was held in collaboration with University of Cincinnati Research and Innovation Week and Alumni weekend.



A **Medical Image Gallery and Competition** was added to the Annual Research Symposium events

MAY 2018

Robert Luke, MD, professor emeritus in the Department of Internal Medicine, honored as one of two recipients of the College of Medicine **Daniel Drake Medal**



JUNE 2018

Jason Blackard, PhD, named **Director of Medical Student Research Initiatives** in the College of Medicine •

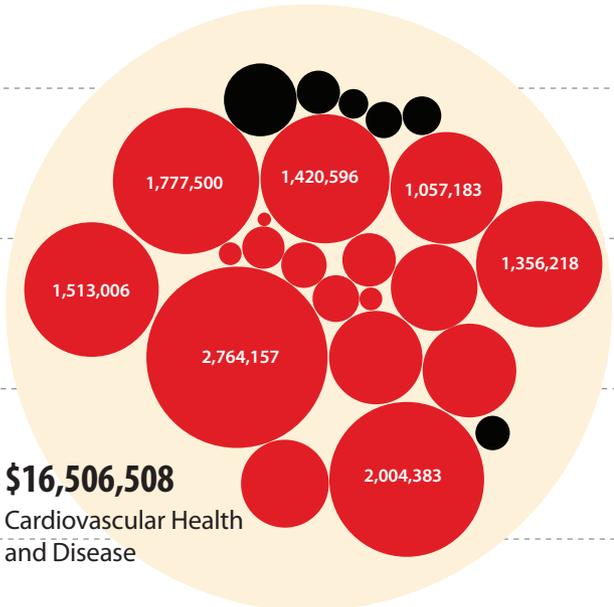
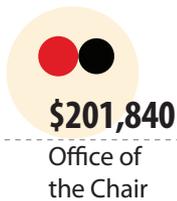
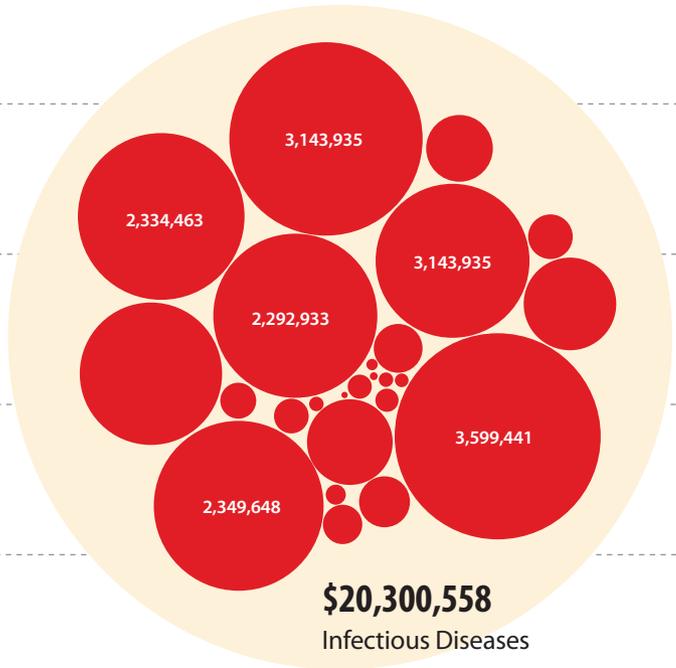
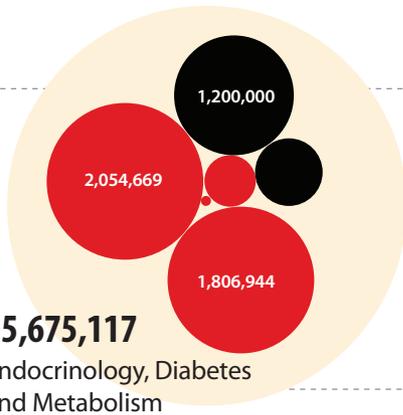


Research Funding FY18: **\$86,869,756**

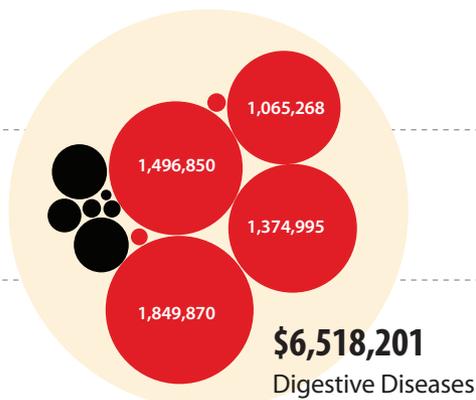
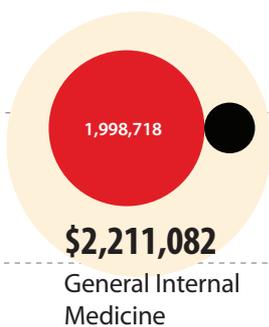
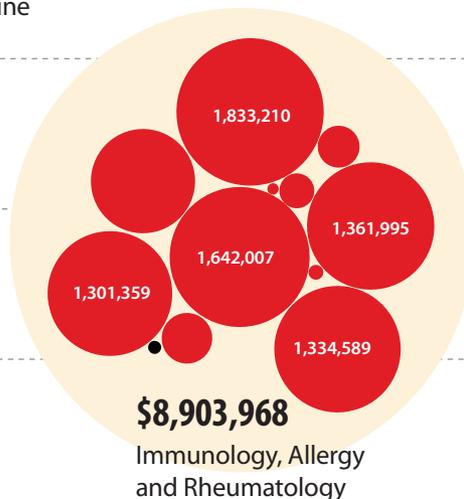
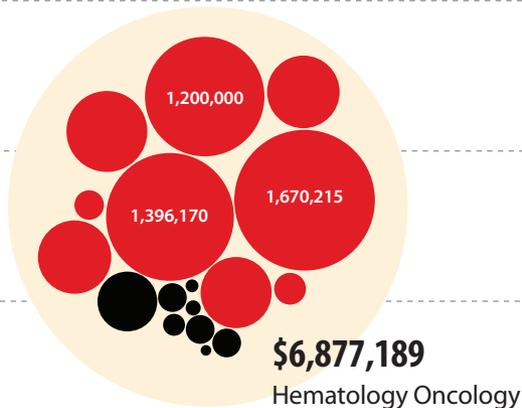
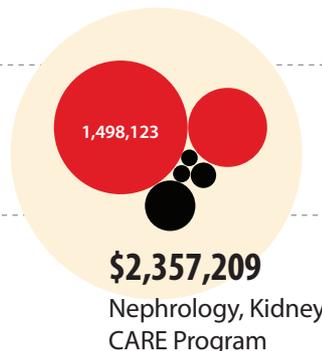
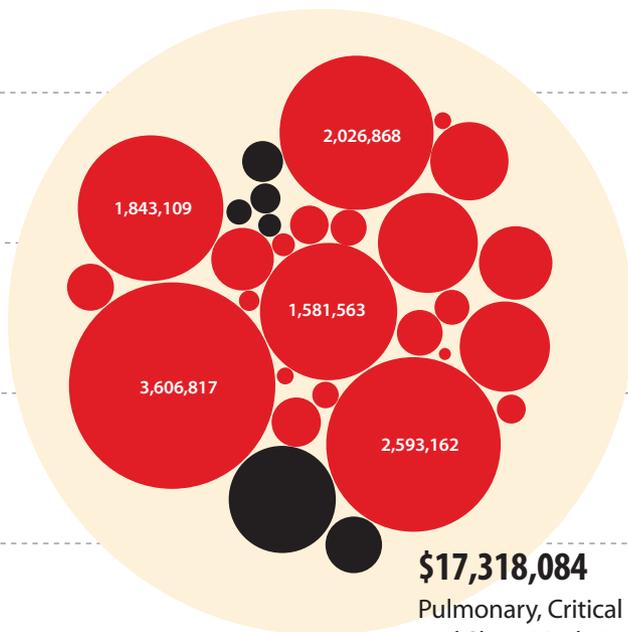
We currently hold 135 total grants in the department 21% of which are held by primary investigators with R0-1 awards. The total award amount is \$86,869,756. \$10.3 million of these were new grants awarded in FY18. •

KEY

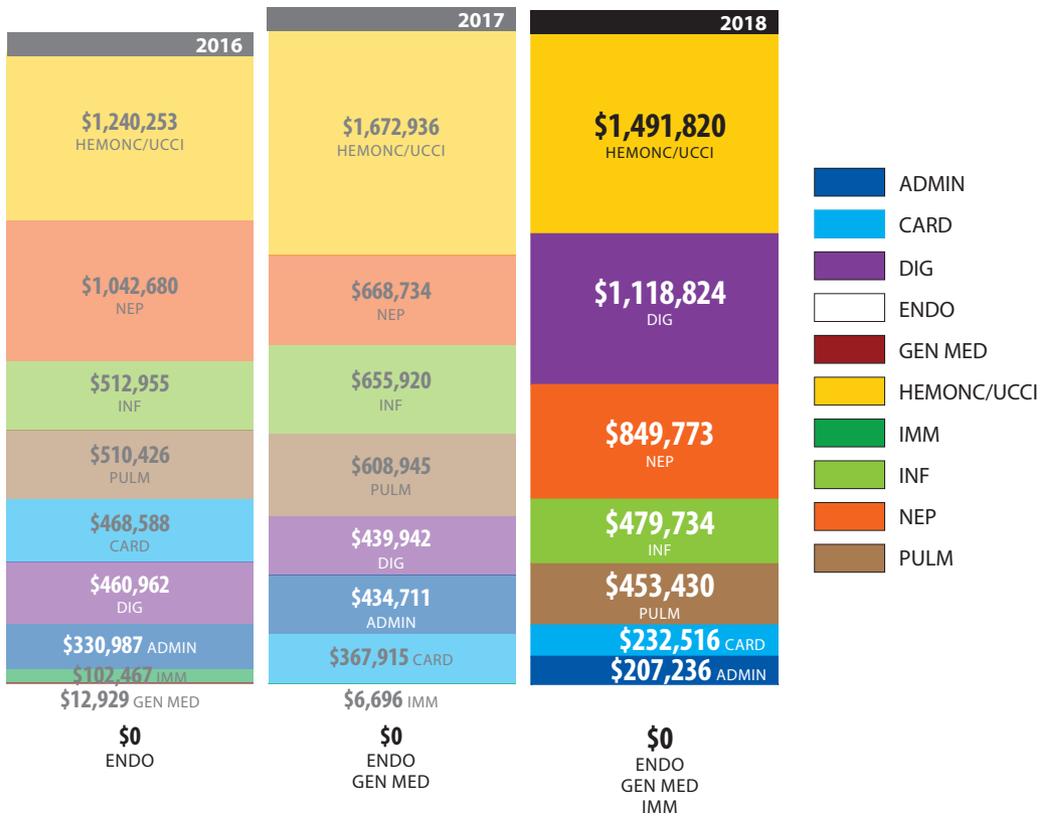
- Federal Funding
- Non-Federal Funding



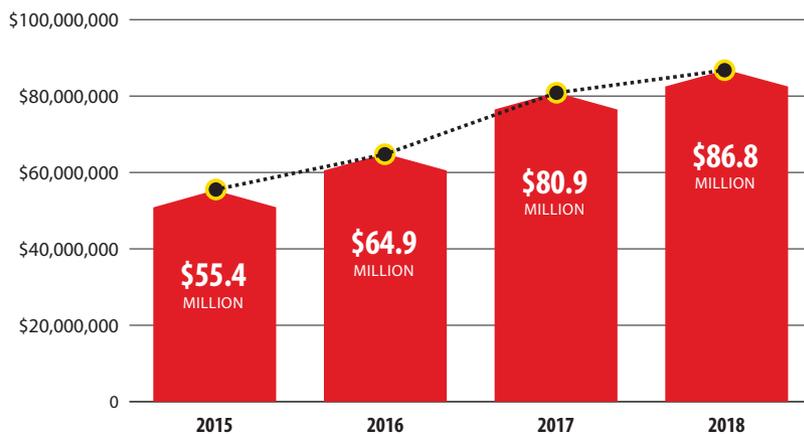
New Funding FY18..... \$10.3 million
Submissions FY18..... 135
New Awards FY18.....37



Clinical Trial Revenue FY18: \$4,833,333



Four Year Trend of Research Funding



2018 Daniel Drake Medal Recipient: Robert G. Luke, MD, MACP

The College of Medicine presented faculty member and longtime leader, Robert Luke, MD, UC emeritus professor of Internal Medicine and former chair of the Department of Internal Medicine, with the college's highest honor, the Daniel Drake Medal, on Saturday, May 19, 2018 during the college's annual Honors Day ceremonies.

The Drake Medal is given annually by the College of Medicine to living faculty or alumni for their outstanding and unique contributions to medical education, scholarship and research. The award was established in 1985 to honor the 200th birthday of Daniel Drake, MD, the founder of the Medical College of Ohio, the forerunner of the UC College of Medicine. Drake was one of the most influential physicians, educators and scientists of 19th century America.

Luke made great strides in the advancement of research and education in the UC Department of Internal Medicine. He served as chair from April 1988 until June 2004. During his tenure, he oversaw the creation of the nation's first teaching practice plan to allow reimbursement for educational activities by faculty. Luke also developed the first clinical reimbursement model for the department's clinicians and clinician-educators. He helped create the department's Educational Innovation Project, which develops new ways to improve residency education and patient care, and the Internal



*Achieving the standard of excellence
all of us strive to attain in our lives*

Medicine Scholarly Training for Academic Research (IM-STAR) program, which mentors junior faculty and prepares them for academic research careers. An expert in hypertension and kidney disease, Luke has published 280 scientific papers and served as editor of the *American Journal of Kidney Disease*. He held previous faculty positions at the University of Alabama Birmingham and University of Kentucky. At the national level, he served as

President of the American Society of Nephrology and Chair of the Board of the American College of Physicians. He received his medical degree from Glasgow University in Scotland and completed a research fellowship at Yale University.

Luke's name, biography and photos will be added to the Daniel Drake Medal exhibit in the Medical Sciences Building on UC's medical campus. •

IMPACT

Team Science

Team Science

The team of **Laura Conforti, PhD, Trisha Wise-Draper, MD, PhD,** and **Edith Janssen, PhD,** represents an outstanding example of transdisciplinary team science. In 2017, they were granted a Peer Review Cancer Research/Translational Team Science Award / Department of Defense (DOD) to study the role that ion channels, adenosine and CD244 play in mediating the resistance to anti-PD1 therapy in cancer. The DOD critique of their award included a comment, "Each investigator brings unique and overlapping skills to the project." Conforti, a professor in the Division of Nephrology, Kidney CARE Program, along with Wise-Draper, an assistant professor in the Division of Hematology Oncology, and Janssen, an associate professor in the Department of Pediatrics, offered a few insights about advancing cancer research with their transdisciplinary studies.

Left to right: Edith M. Janssen, PhD; Laura Conforti, PhD, and Trisha M. Wise-Draper, MD PhD



Each investigator brings her own expertise but all share a passion and devotion for new discovery. “We trust each other and we love what we do,” explains Conforti. “Despite the challenges of a life devoted to research, we look forward to coming into work each day and this enthusiasm is shared by our research teams who similarly are devoted to their work. Our staff is fully committed to research, as they believe in the importance of the studies we are conducting and their potentials to translate into benefits for the patients.

“We would not be able to conduct this type of research, which relies on patient samples coming from the clinic any day of the week and at any time, without our team of investigators that are willing to spend long hours in the lab and to sacrifice their weekends to perform the experiments,” says Conforti.

Janssen, also a researcher at Cincinnati Children’s, agreed mutual trust allows work to proceed. “If I request something of my colleagues and they tell me it will be done, it gets done,” says Janssen.

Wise-Draper, a graduate of the College of Medicine and a UC Health oncologist, says there is mutual respect among the trio with all being treated as equals. “Furthermore, it helps that I have a PhD and a MD,” explains Wise-Draper. “With my PhD training, I can frequently appreciate more the hypothesis-driven studies of my two colleagues. In addition, having been trained in bench research, I can more readily grasp the feasibility of a given proposal. Our combined training back-

grounds give us a sense of what it takes to complete projects; we have skills and experience needed to be successful particularly in a team setting.”

The origins of this amazing team of scientists started with Conforti, who has expertise in ion channel signaling in lymphocytes, reaching out to Janssen, an expert in tumor immunology and flow cytometry, and to Wise-Draper, whose translational and clinical expertise has served the team well. Wise-Draper had access to clinical samples and would be the lynchpin for the clinical relevance of the preclinical arms. Janssen had working preclinical animal models that could lead to the development of the humanized

The age and experience difference does not create conflict or tension. In fact, they were all emphatic that they do not derive their success from this notion of creative tension. If there is tension, they would redefine it as a sense of internal anxiety to complete their agreed upon interrelated tasks in a timely fashion for their team.

mouse equivalents. A couple of pilot projects were submitted to the DOIM and the University of Cincinnati Cancer Institute (UCCI), and were funded a few years ago. The success of these pilots gave them the confidence to plan a larger project culminating in the DOD grant. Janssen

pointed out that the “pilot project also provided reassurance that they could work well together as a team.”

Another advantageous feature of their team is having junior (Wise-Draper), middle (Janssen) and senior (Conforti) investigators working together. This has been instrumental in getting methods and techniques established in Wise-Draper’s lab. Conforti, as the senior investigator, is the leader of the group, a mentor for Wise-Draper and frequently marshals the final submission application, contacts with the granting agency and performs administrative tasks avoiding unnecessary duplication. Interestingly, the age and experience difference does not create conflict or tension. In fact, they were all emphatic that they do not derive their success from this notion of creative tension. If there is tension, they would redefine it as a sense of internal anxiety to complete their agreed upon interrelated tasks in a timely fashion for their team.

They do not claim that it is easy but they enjoy what they do, synergize together in ways that reflect the current necessity of 21st century science and look forward to many more successful years together, contributing to advances in science. ●

IMPACT

Women in Research

Women in Research

Melanie T. Cushion, PhD, is a tenured professor in the Division of Infectious Diseases; she has worked at UC in various capacities since 1981. Since August 2013, she has held the position of senior associate dean for research in the College of Medicine. At this time when there are still few women in positions of leadership in medical schools throughout the country and at the College of Medicine, Cushion has offered her thoughts about what it takes to be a successful researcher in today's competitive environment.

Cushion's career pathway from a budding scientist to senior researcher and administrator in the College of Medicine has had a major unifying theme: perseverance.



Cushion views research as an integral part of the tripartite mission of the College of Medicine.

“It sets us apart from all of the other medical complexes in the region and is a major strength of our institution,” says Cushion, who views herself as an advocate for all research endeavors including discovery, translational, clinical, outcomes and social sciences.

“Without a strong pipeline at every point, the mission will suffer. We must be smart about how we direct our limited resources and create transdisciplinary teams that link all 13 of our colleges together. The university has a wealth of talent among its faculty and I am focusing on aggregating individuals to build teams and programs that reside outside the box and silos. I firmly believe that a broad definition of diversity, including thought, culture as well as ethnic backgrounds, improves research approaches and strategies.”

Cushion is deeply involved as a researcher in preclinical drug development for anti-fungal agents. Her most recent research uses a quantitative systems pharmacology (QSP) approach, which incorporates computational models to predict interactions between a drug and its impact on the body’s biological systems and disease agents, to develop new treatments for *Pneumocystis pneumonia*, a lethal infection in immunosuppressed patients.

Cushion’s career pathway from a budding scientist to senior researcher and administrator in the College of Medicine has had a major unifying theme: perseverance.

As a young investigator during the 1980s, Cushion sought out established scientists for mentorship and guidance. She



was a postdoctoral fellow in the laboratory of Peter Walzer, MD, professor emeritus in the Division of Infectious Diseases. An excellent mentor, Walzer offered his support and Cushion was included on manuscripts and grants. During that era, Cushion found female role models in science a rarity. Reviewers of her research cited her need for independence in the field of discovery and she obliged by forging her own path into a different area of research. She initially taught as an instructor in the Department of Pathology and Laboratory Medicine for two years before joining the Department of Internal Medicine in 1985 and climbing the career ladder to become a tenured professor in 2001. Cushion was the first woman with a PhD to receive tenure in the Department of Internal Medicine.

Around that time, Cushion wanted to make a leadership contribution at the college. She was promoted to associate chair for research in the Department of Internal Medicine in 2006.

“I could affect the outcomes for more people,” says Cushion. “Restricting myself to my own research projects was limiting in a sense. I thought the college was not recognizing investigators for their achievements. I wanted to set up a system in which success was promoted and the beneficiaries of internal support, whether it be funding, recognition or other

mechanisms of support, would help those successful researchers to stay rather than leave.”

Cushion was selected for the Executive Leadership in Academic Medicine (ELAM) program in 2011. The program is an intensive one-year fellowship of leadership training offered at Drexel University. Specially developed for senior women faculty who demonstrate the greatest potential for assuming executive leadership positions at academic health centers within the next five years, the fellowship offers extensive coaching, networking and mentoring opportunities aimed at expanding the national pool of qualified women candidates.

The program’s ability to offer mentorship and support remains vital, says Cushion, as women in the field of scientific discovery often encounter challenges their male colleagues don’t experience, including:

- Lack of role models and support for women in a male-dominated environment
- The challenge of maintaining an adequate life-work balance
- Assertiveness not seen as a positive for women in leadership
- Extra difficulty of sustaining a research career as a PhD in a clinical department

Cushion says the “leaky pipeline thesis” or argument that women are more likely than men to leak from the science and engineering pipeline after college remains a concern.

“For women, it reaches a peak at the time of raising a family, particularly if you don’t have a supportive partner or a department that allows for flexibility,” says Cushion. ●



Biocytin Filled Pyramidal Neurons in Layer II/III Anterior Cingulate Cortex

Pyramidal neurons in layer II/III of anterior cingulate cortex (ACC) were found to become hyperexcitable after injury, suggesting higher order processing of pain within the limbic brain. Neurons were whole-cell patch clamped in brain slices and biocytin was injected through the patch pipette after recording biophysical properties of the membrane. Brain slices were then fixed in PFA (room temperature, 1 hour), incubated with streptavidin (1:300, Alexa Fluor 488) overnight, and imaged using a confocal microscope (Nikon Ti-E Inverted Microscope, A1 Confocal; Cincinnati Children's Confocal Core, 09/2017; Objective=20x; Single-line 488nm Argon).

CREDIT:

Sisi Chen, MD, MSc, Department of Anesthesiology, Steve Davidson lab

Discover and Innovate



Division of

Cardiovascular Health and Disease

The Division of Cardiovascular Health and Disease is actively engaged in a broad range of research activities, ranging from fundamental science to population health. Our aspiration is to positively affect the health of patients and reduce health disparities in our community. Drs. Richard Becker and Dylan Steen have partnered with the UC Center for Health Informatics to create “Asclepius” and a new web- and app-based Clinical Study Patient Recruitment Software (CSPRS) technology.



Richard C. Becker, MD, FAHA
DIVISION DIRECTOR

Research Focus Areas/Types:

Our scientists have realized major breakthroughs in predictive modeling, brain-heart signaling, myocardial structural protein genotype-phenotype associations and molecular regulators of blood pressure. Current projects include:

- Predictive modeling and advanced analytics in cardiovascular conditions
- Point-of-Purchase public health interventions
- Novel drug delivery and deployment systems
- Inotropic and lusitropic therapeutics
- Myosite and contractile protein signaling
- Microbiome and vascular disease

Investigators/Trainees:

Our researchers have been highly productive with each securing extramural funding. Two faculty received their first R01 and four received NIH R01 sub-awards. A new faculty member had five grants funded, including a highly competitive NCAI award. Collectively, the group has published over 50 papers in high-tiered medical journals, served on NIH, NSF, American Heart Association, Foundation and FDA study sections, special emphasis panels, scientific advisory panels, thesis committees and writing groups for national and international science organizations. Several faculty members are poised to license or commercialize their inventions or establish start-up companies.

Funding types:

- NIH
- American Heart Association
- UC Heart, Lung and Vascular Institute
- VA Medical Center
- UC College of Medicine and Department of Internal Medicine
- Industry
- Philanthropy

Mentoring:

Our researchers are currently mentoring five PhD candidates, six fellows, ten post-doctoral fellows and three internal medicine residents. Training the next generation of scientific researchers and physician-investigators is our passion and priority.

Collaborations:

The Division actively engages in research with other divisions and departments in the College of Medicine, as well as the College of Engineering, College of Pharmacy, College of Allied Health Sciences, College of Business, College of Design, Architecture, Art & Planning, Neuroscience Institute, Cancer Institute and Cincinnati Children's.

A Heart for Helping

Sakthivel Sadayappan, PhD, is committed to fighting a killer heart disease.

For Sakthivel Sadayappan, PhD, professor of cardiovascular health and disease, it was a long journey from a childhood studying by kerosene lamp in a southern Indian village to his current role as director of the Heart Branch of the UC Heart, Lung and Vascular Institute. But even as a child of cattle farmers, Sadayappan used his creativity to create games of the mud and sand that surrounded him in a place where rain poured down nine months out of the year.

"My imagination aroused my curiosity, but my worldview was

vastly limited," says Sadayappan, who also holds an MBA. "I certainly harbored no grandiose visions of what I could become."

Interested in science, Sadayappan went to college, eventually earning a PhD in Germany. Throughout, his interest in research deepened, particularly in hypertrophic cardiomyopathy, a genetic disease that causes heart enlargement and sudden death and can be identified by a genetic mutation. "Some patients develop the disease in their 20s, some later on," Sadayappan says. "If you have the mutation, then you will have

the disease down the road, but you don't know when. There is no real treatment."

Sadayappan came to UC to further his studies in 2016 because of the numerous clinical trials conducted around hypertrophic cardiomyopathy, he says, citing work by HLVI faculty members, David Feldman, MD, Jack Rubenstein, MD, and David Harris, MD, among others.

"I wanted to work side-by-side with clinicians," Sadayappan says. "A lot of clinicians at UC were enthusiastic about my studies and are helping me right now."

Sadayappan's long-term goal is simple: treat the patients. Currently, he is working with industry in the lab on potential precision medicine platforms, where one of the eight genetic mutations that cause the disease is matched with a specific therapeutic treatment module.

"Before my retirement, I want to have found the therapy to treat hypertrophic cardiomyopathy," Sadayappan says. ●



**Sakthivel
Sadayappan's
long-term
goal is simple:
treat the patients.**





Richard C. Becker, MD, MEd

Mabel Stonehill Endowed Professor of Medicine, Division Director
Division of Cardiovascular Health and Disease

Our group is interested in new paradigms of thrombosis and vascular repair, including injury underlying atherosclerosis and malignancy-associated vascular injury. The platform for probes, imaging and intervention is based on oligonucleotide chemistry.

Keywords:

- Oligonucleotides
- Antidotes
- Drug development
- Thrombosis
- Vascular repair

Key personnel: UC Heart, Lung and Vascular Institute Research Group
Collaborators: Dylan Steen, MD; Sakthi Sadayappan, PhD; Donald Lynch, MD
Mentees: Shiv Viswanathan, PhD; Anandi Krishnan (Stanford)

✓ Yes, I am interested in taking on student research assistants.

richard.becker@uc.edu; med.uc.edu



Deeptankar DeMazumder, MD, PhD

Assistant Professor of Medicine; Director of Precise Individualized Medicine (PriMe), the HLVI Artificial Intelligence Center of Excellence
Division of Cardiovascular Health and Disease

Our research is aimed at coming “full circle” from bench to bedside, by transforming clinical observations into testable research hypotheses, translating basic research findings into medical advances and testing novel treatment protocols in rigorous clinical trials. In 2017-18, we received 11 grants (AHA, NIH, Leducq, etc) for basic, translational and clinical projects, including spearheading AI-based personalized predictive analytics in the ICU.

Keywords:

- Sudden cardiac death
- Heart failure
- Electrophysiology
- Risk stratification
- Precision medicine
- Artificial intelligence
- Machine learning
- Personalized medicine

Key personnel: Ginger Conway, MSN, CNP; Kenneth G. Parks, BSc; Kenneth Eaton, PhD; Daniel Wendelken, BSCE

Collaborators: Steven R. Jones, MD (Johns Hopkins Medicine); Benjamin Vaughan, PhD (UC Mathematics); Ali A. Minai, PhD (UC Electrical Engineering)

Mentees: Tracie Lin, MD; Daiana Veira Cardozo, PhD; Rakhee Makhijia, MD; Neha Reddy Sanagala, BSEE; Jeffrey Crocker, BSc; Michael Hautman, BSCE

✓ Yes, I am interested in taking on student research assistants.

Mohamed A. Effat, MD

Professor of Clinical Medicine; Director, Interventional Cardiology Fellowship Program; Interventional Cardiology Section
Division of Cardiovascular Health and Disease



My research explores the application of new fluid dynamics-based measures for determination of severity of aortic valve stenosis, while linking these parameters to long-term survival status. We have recently concluded a large clinical outcome study funded by a VA Merit Review Grant.

✓ *Yes, I am interested in taking on student research assistants.*

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cardiovascular-directory/entire-directory/index/pubs/effatma](https://www.med.uc.edu/intmed/divisions/cardiovascular-health-disease/cardiovascular-directory/entire-directory/index/pubs/effatma)

Keywords:

- Fluid dynamics
- Blood flow
- Aortic valve stenosis
- Aortic valve disease

David Feldman, MD, PhD

Professor of Clinical Medicine; Director of Clinical Services and Director of Advanced Myocardial and Circulatory Services for UC Heart, Lung and Vascular Institute
Division of Cardiovascular Health and Disease



I am a heart failure clinician-scientist with a dedicated focus on translational research and improvements in clinical care through my research. I am interested in defining mechanisms of cardiac remodeling, G protein-couple receptor (GPCR) signaling, and the mechanisms involved in acute heart failure. My long-term goal is to improve heart failure management and reveal novel therapeutic options brought from the “bench” to the “bedside.”

✓ *Yes, I am interested in taking on student research assistants.*

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directory/entire-directory/Index/Pubs/feldmads/](https://med.uc.edu/intmed/divisions/cardiovascular-health-disease/cardiovascular-directory/entire-directory/Index/Pubs/feldmads/)

Keywords:

- Acute heart failure
- Cardiac remodeling mechanisms
- G protein-couple receptor signaling

Myron C. Gerson, MD

Emeritus Professor of Medicine
Division of Cardiovascular Health and Disease



Highlights include 1) Optimization of diagnostic criteria using a CZT nuclear cardiac camera. 2) Nuclear cardiology testing with an anti-gravity treadmill in patients who are unable to exercise adequately on a conventional treadmill. 3) Detection of coronary artery disease with cardiac positron emission tomography using the novel radiotracer F18 flurpiridaz.

Key personnel: Rachael Mardis; Elonia Scott, CNMT; Cynthia Flischel, CNMT

Collaborators: Fahad Waqar MD; Patrick Daly, MD; Robert O'Donnell, MD

Mentees: Sagar Sanghvi, MD

Keywords:

- Nuclear cardiology
- Myocardial perfusion imaging



David Michael Harris, MD

Associate Professor of Clinical Medicine
Division of Cardiovascular Health and Disease

I am currently investigating the utility of baseline strain for identification of ischemia. My other projects have included MRI for the investigation of pericardial inflammation in patients with HIV.

Key personnel: Kim Labowsky, Karen Moore, Beth Newton

Collaborators: Dr. Sadayappan

Mentees: Dr. Jetty, Dr. Sanghvi, Dr. Haddock, Dr. Wells

Keywords:

- **MRI**
- **Echocardiography**
- **Strain**
- **Hemodynamics**



Kevin J. Haworth, PhD

Assistant Professor
Division of Cardiovascular Health and Disease

Our laboratory is leading the development of cavitation imaging to provide guidance for ultrasound-mediated drug delivery and ultrasound mechanical ablation of tissue. We also continue our investigations into ultrasound-mediated oxygen scavenging for inhibition of reperfusion injury.

Key personnel: Haili Su, MD, PhD

Collaborators: Andrew Redington, MD; Christy Holland, PhD; John Lorenz, PhD

✓ *Yes, I am interested in taking on student research assistants.*

<http://med.uc.edu/intmed/labs/haworth-lab/home>

Keywords:

- **Ultrasound**
- **Physics**
- **Image-guided therapy**
- **Microdroplets**
- **Reperfusion injury**
- **Undergraduate education**

Christy K. Holland, PhD

Professor of Internal Medicine and Biomedical Engineering,
Scientific Director, Heart, Lung, and Vascular Institute
Division of Cardiovascular Health and Disease



I am actively looking for students and fellows to join the Image-guided Ultrasound Therapeutics Laboratories in the UC Cardiovascular Center. The goals of two recently funded NIH R01-funded projects are to develop echogenic agents with therapeutic loading to improve physiologic flow in the coronaries and peripheral circulation post stent deployment, and to develop a combined ablation and targeted thrombolytic histotripsy technique to lyse chronic thrombi in the deep veins. I enjoy working with industrial partners.

Key personnel: Himanshu Shekhar, Karla Mercado-Shekhar, Maxime Lafond, Nuria Gonzalez, Robert Kleven

Collaborators: Kevin J. Haworth, PhD; David D. McPherson, MD; Kenneth B. Bader, PhD

Mentees: Himanshu Shekhar, Karla Mercado-Shekhar, Maxime Lafond, Nuria Gonzalez, Robert Kleven

✓ Yes, I am interested in taking on student research assistants.

<https://www.med.uc.edu/ultrasound>

Keywords:

- Stroke
- Cardiovascular disease
- Ultrasound-enhanced thrombolysis
- Ultrasound-mediated drug delivery
- Histotripsy (ultrasound ablation)

Hina Jamali, MD

Assistant Professor of Clinical Medicine
Division of Cardiovascular Health and Disease



I completed my fellowship in cardiovascular diseases at the University of Cincinnati prior to joining the faculty. I specialize in diseases of the heart and blood vessels and manage complex cardiac conditions such as heart attacks and life-threatening, abnormal heartbeat rhythms. I recently completed the IMSTAR program, where I reported on cardiac imaging modalities available to diagnose cardiac autonomic dysfunction.

<https://med.uc.edu/intmed/education/residency/intmed-directory/Index/Pubs/jamaliha?>

Additional keywords: **Abnormal heartbeat rhythm; Autonomic innervation**

Keywords:

- Cardiac imaging
- Heart attack

Naseer Ahmed Khan, MD

Assistant Professor of Clinical Medicine
Division of Cardiovascular Health and Disease



We were able to publish three research papers based on our original clinical research. Two of the papers were published in the Journal of Nuclear Medicine as a quality improvement project involving the cutting edge CZT nuclear imaging camera acquired by the University of Cincinnati.

Key personnel: Zenith Jameia

Collaborators: Myron Gerson, MD; Dylan Steen, MD

✓ Yes, I am interested in taking on student research assistants.

Additional keywords: **Statin; Transient ischemic dilation**

Keywords:

- CZT
- Myocardial perfusion



Donald R. Lynch Jr., MD

Assistant Professor of Clinical Medicine
Division of Cardiovascular Health and Disease

We are interested in studying the thromboinflammatory response among patients with valvular heart disease and ways to modulate it.

Key personnel: Neil Batra in Core Platelet Lab

Collaborators: Sakthi Sadayappan, PhD; Sean Davidson, PhD; Phillip Owens III, PhD

Mentors: Richard Becker, MD; Susan Smyth, MD, PhD

Additional keywords: **Inflammation; Cardiovascular Disease**

Keywords

- Platelet function
- Thrombosis



Robert O'Donnell Jr., MD, MSc

Associate Professor of Clinical Medicine and Radiology
Division of Cardiovascular Health and Disease

My research interests revolve around cardiac imaging modalities. My active research evaluates the presence and severity of cardiac involvement in amyloidosis using gadolinium enhanced cardiac MRI, evaluates the ability of advanced cardiac imaging (PET, CMR) to predict obstructive multi-vessel coronary artery disease, or makes an assessment of the prognostic and diagnostic value of cardiac PET/CT. I am also Vice Chief of Clinical Services-Ambulatory Care; Associate Director, Advanced Imaging and Cardiovascular Diagnostics

✓ *Yes, I am interested in taking on student research assistants.*

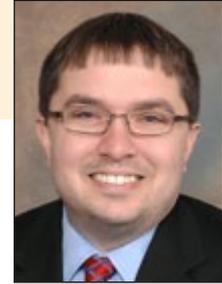
<https://med.uc.edu/radiology/department-directory/entire-directory/Index/Pubs/odonnert/>

Keywords:

- Cardiac imaging modalities
- Amyloidosis
- Cardiac MRI
- PET
- CMR
- CT
- Obstructive multi-vessel coronary artery disease

A. Phillip Owens III, PhD

Assistant Professor
Division of Cardiovascular Health and Disease



The focus of my laboratory is to examine the role of the gut microbiome and coagulation proteins in abdominal aortic aneurysm (AAA) and protease-activated receptor 2 (PAR2) in atherosclerosis. Biggest accomplishments in the past year: Our laboratory received an R01 to examine PAR2 in atherosclerosis and published a paper in ATVB demonstrating PAR2 deficiency attenuates diet-induced atherosclerosis. We are currently accepting undergraduates.

Key personnel: Shannon M. Jones and Stacey Bass, Lab Managers
Collaborators: Sean Davidson, PhD; David Hui, PhD; Michael Tranter, PhD; Jack Rubinstein, MD; Anders Wanhainen, MD, PhD; Dominique de Kleijn, PhD
Mentees: Kelsey Conrad, MS; Hannah Russell, BS; Megan Jay, BS; Bailey Stone

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/divisions/cardiovascular-health-disease/cardiovascular-directory/entire-directory/index/pubs/owens2at>

Keywords:

- Atherosclerosis
- Abdominal aortic aneurysms
- Coagulation proteins and proteases
- Thrombosis

Florence Rothenberg MS, MD, FACC

Associate Professor of Clinical Medicine
Division of Cardiovascular Health and Disease



This year I completed presidency for the American Federation of Medical Research, a national organization whose purpose is career development for medical investigators. I have been speaking nationally (Maine, California, Washington DC, Chicago, and Philadelphia) to spread awareness about our findings on Type 2 myocardial infarction in the critically ill, and completed work as local site investigator for the PRESERVE trial, published this year.

Collaborators: Michael Clay, MPH DC
Mentees: Nasrien Ibrahim, MD; Michael Jenkins, PhD; Anjul Davis, PhD

Keywords:

- Type2MI
- Obesity medicine
- Women in medicine

Jack Rubinstein, MD

Associate Professor of Medicine
Division of Cardiovascular Health and Disease



My laboratory focuses on translational science through our independent projects as well as through collaborations around campus.

Key personnel: Sheryl Koch, PhD
Collaborators: Hong-Sheng Wang, PhD; Alvaro Puga, PhD; Sakthivel Sadayappan, PhD

✓ *Yes, I am interested in taking on student research assistants.*

Keywords:

- Cardiovascular disease
- TRP channels
- Heart failure
- Translational science



Sakthivel Sadayappan, PhD, MBA

Professor of Medicine
Division of Cardiovascular Health and Disease

Our current research studies focus on how environmental factors such as diet, stress and sedentary lifestyles impact the heart health of South Asian descendants carrying genetic defects in the MYBPC3 gene. Recently, we identified a new subset of a genetic defect in South Asians who live in the United States that is associated with heart disease. To advance the project, we continue to hire pre- and post-doctoral fellows and research assistants.

Keywords:

- Heart failure
- Cardiomyopathies
- Myocardial infarction
- Inflammation

Key personnel: Lisa A. Martin; Angela Taylor; James McNamara, PhD; Rohit Singh, PhD; Mohammed Arif, PhD; Jennifer Schwanekamp, PhD; Shiv Kumar Viswanathan, PhD; Tae Song, PhD

Collaborators: Litsa Kraniias, PhD; Jack Rubinstein, MD; Yi-Gang Wang, PhD; David Harris, MD; Jeff Molkenin, PhD; Burns Blaxall, PhD; Doug Millay, PhD

Mentees: Mohit Kumar, Remon Azer

✓ Yes, I am interested in taking on student research assistants.

www.sadayappanlab.org



Yunitaka Shizukuda, MD, PhD

Professor, Clinical Medicine
Division of Cardiovascular Health and Disease

I am currently heavily involved in development of comprehensive cardiac imaging service at the Cincinnati VA Medical Center to make the facility able to host advanced cardiac imaging research. In addition, I am working to develop research projects in the areas that need collaboration of Pulmonary and Sleep Medicine.

Keywords:

- Cardiovascular diseases
- Cardiac imaging
- Genetic cardiac diseases

Key personnel: Jean Elwing, MD, Pulmonary and Sleep Medicine

Collaborators: Douglas Rosing, MD, NHLBI-NIH

Dylan L. Steen MD, MS

Assistant Professor of Clinical Medicine, Director of Clinical Trials and Population Health Research, UC Heart, Lung, and Vascular Institute
Division of Cardiovascular Health and Disease



During the past 12 months, we have received grant funding from both Amgen and Kroger for multiyear projects. Each project involves multiple external collaborating academic institutions.

Key personnel: Robert “Nate” Helsley, PhD, Project Director for Retail-based Research

Collaborators: Sarah Couch, PhD; Mark Eckman, MD; Michael Magazine, PhD; Sakthivel Sadayappan, PhD; Brett Harnett

Mentees: Francesca Urbina, Stacey Gomes, Sarma Singam

✓ *Yes, I am interested in taking on student research assistants.*

<https://www.ncbi.nlm.nih.gov/sites/myncbi/1rAmJALaXBaQ0/bibliography/41440790/public/?sort=date&direction=descending>

Keywords:

- Retail
- Preventive cardiology
- Atherosclerosis
- Familial hypercholesterolemia
- Software development
- Risk models
- Medication adherence
- Ambulatory medicine

Michael Tranter, PhD

Assistant Professor
Division of Cardiovascular Health and Disease



My lab studies the molecular mechanisms of cardiometabolic disease. Specifically, ongoing projects in the lab are centered around post-transcriptional gene regulation by the RNA binding protein Human antigen R (HuR) in the setting of (1) pathological left ventricular hypertrophy and fibrosis in response to cardiac pressure overload and (2) the metabolism and thermogenesis of brown adipose tissue.

Key Personnel: Sarah R. Anthony, BS, Senior Research Assistant; Samuel Slone, BS, PhD Candidate, Systems Biology and Physiology; Lisa C. Green, BS, PhD Candidate, Pharmacology

Collaborators: A. Phillip Owens, PhD; John N. Lorenz, PhD; Josh B. Benoit, PhD

<https://med.uc.edu/pathobiology/faculty/Index/Pubs/trantemc>

Keywords:

- Cardiovascular disease
- Hypertrophy
- Fibrosis
- Brown adipose tissue
- Post-transcriptional gene regulation

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

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- 22 Zhong B, **Rubinstein J**, Ma S, Wang DH. Knockout of TRPV1 Exacerbates Left Ventricular Diastolic Dysfunction Induced by A High-fat Diet in Mice. *Cardiovasc Hematol Disord Drug Targets*. 2018 May 3. doi: 10.2174/1871529X18666180503124538. [Epub ahead of print] PubMed PMID: 29732984.
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Division of

Digestive Diseases

The Digestive Diseases Division has an active research agenda across the spectrum of gastrointestinal disorders. This includes basic, translational and 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.

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.

A Life's Work

Diane Daria, RN, BSN, has spent decades helping patients as a research nurse

Since joining the University of Cincinnati as a registered nurse in 1993, Diane Daria, RN, BSN, has enjoyed seeing the real-world outcomes of the research she has helped make possible. After working as a hospital nurse since the 1970s, she began assisting UC researcher Peter Frame, MD, who was focused on HIV at a time when few treatments existed for the virus. In the early 1990s, the majority of HIV patients died within six months to two years after diagnosis.

"Dr. Frame was a wonderful mentor," says Daria of Frame, a professor emeritus of infectious diseases who was the founder of the first Infectious Diseases Center in Cincinnati to treat AIDS patients. "He was excellent at working not only with his patients, but he was instrumental in bringing HIV research to UC and to the city. The patients themselves were intent on improving their lives, too. Now patients diagnosed with HIV are living normal lives. I feel privileged to have been part of that journey."

Today, Daria works with the Division of Digestive Diseases and Kenneth Sherman, MD, PhD, on projects that focus on liver

diseases—particularly Hepatitis C disease, which is now a curable virus after years of research; and a new emphasis on fatty liver disease, which is a growing problem in the United States and worldwide, and can cause scarring that could eventually lead to liver transplants. Currently, no pharmaceutical treatment exists on the market. Daria has seen the difference that research makes in

real patients' lives before, and as she reflects back on her career, she is hopeful once again.

"As a nurse, research gives me the opportunity to work one-on-one with patients over a long period of time. You learn so much from them," Daria says. "These are diseases that they're faced with for the rest of their lives, and through research, you can make a real difference." ●



“As a nurse, research gives me the opportunity to work one-on-one with patients over a long period of time. Through research, you can make a real difference.”

Diane Daria, RN, BSN





Khurram Bari, MD

Assistant Professor of Clinical Medicine
Division of Digestive Diseases

I studied the outcomes of Hepatitis C discordant liver transplants and published the results. I am working on an NIH proposal (R01) to further study the mechanism of HCV transmission through this approach. In addition, I am collaborating with Robert Baughman, MD, to create a database of patients with hepatic sarcoidosis for future prospective and retrospective studies in this patient population. Not currently seeking new collaborators or students.

Keywords:

- Liver transplant
- Immune suppression
- Viral Hepatitis C
- Sarcoidosis

Collaborators: Robert Baughman, MD; Tayyab Diwan, MD; Robert Cohen, MD; Shimul Shah, MD



Jason Blackard, PhD

Associate Professor
Division of Digestive Diseases

I direct a translational research laboratory which focuses on human and mechanistic studies to understand virus-virus and virus-host interactions. Current studies involve hepatitis B virus (HBV), hepatitis C virus (HCV), hepatitis E virus (HEV), pegiviruses (HPgV; GBV-C), Zika, and HIV and include international collaborations in South Africa, Botswana, India, Mozambique, Nigeria, and Ghana.

Keywords:

- Viral hepatitis
- HBV
- HCV
- HIV co-infection
- Global health

Key personnel: Ling Kong, MD, PhD–Research Associate

Collaborators: Ken Sherman, MD, PhD; M. Tarek Shata, MD, PhD

Mentees: junior faculty participating in the KL2 Scholars Program

✓ Yes, I am interested in taking on student research assistants.

<http://med.uc.edu/pathobiology/faculty/Index/Pubs/blackajt/>



Tiffany E. Kaiser, PharmD

Associate Research Professor
Division of Digestive Diseases

I'm currently working on transplant trials related to Technology Triggered Adherence Interventions, Use of Health Information Technology to Improve Outcomes in Liver Transplant Recipients, A Pilot Study to Evaluate the Efficacy and Safety of Budesonide as an Alternative to Prednisone for Liver Transplant Immune Suppression, A Randomized Controlled Clinical Trial of Thymoglobulin® and Extended Delay of Calcineurin Inhibitor Therapy.

Keywords:

- Transplantation
- Immunosuppression
- Hepatitis C

Collaborators: Rita Alloway, PharmD; Shimul Shah, MD; Khurram Bari, MD

✓ Yes, I am interested in taking on student research assistants.

Additional keywords: Adherence; Quality Improvement; Telehealth

Mohamed Tarek M. Shata, MD, PhD

Associate Professor
Division of Digestive Diseases



Our lab is interested in basic immunology: regulation of cellular, humoral and mucosal immune response. Immunology of infectious diseases: hepatitis, HIV, salmonella, schistosomiasis. Immune regulation in infectious diseases: lymphokines, chemokines. Immunoregulation in HIV and hepatitis C: The roles of chemokines and cytotoxic immune response in HIV and hepatitis C infections. Understanding the immunopathology of Hepatitis E.

Key personnel: Enass Abdel Hameed, MD, PhD

Collaborators: Kenneth E. Sherman, MD, PhD; Dr. Jason Blackard, PhD; Helal Hetta, PhD

Mentees: Enass Abdel Hameed, MD, PhD; Helal Hetta, PhD

✓ Yes, I am interested in taking on student research assistants.

https://www.researchgate.net/profile/Mohamed_Tarek_Shata

Keywords:

- Immune responses in viral hepatitis
- HIV
- Schistosoma infection
- Coinfection (HIV/HCV/HBV)

Kenneth E. Sherman, MD, PhD

Gould Professor of Medicine, Division Director
Division of Digestive Diseases



We work on modulation of hepatic fibrosis by CCR5 antagonism. We are also investigating the frequency of Hepatitis E in HIV infected populations. Other work includes evaluation of the effects of cocaine on hepatic fibrosis in those with or without HIV infection.

Key personnel: Susan Rouster

Collaborators: Jason Blackard, PhD; Tarek Shata, MD, PhD

Keywords:

- HCV
- HBV
- HEV
- HIV
- HDV
- fibrosis
- njury
- diagnostics



Bruce Yacyshyn, MD

Professor of Clinical Medicine
Division of Digestive Diseases

Our lab is involved in translational mucosal immunology studying the etiology and treatment of angioectasia, the immune system in recurrent *C. difficile* infection (CDI) and development of systemic biomarkers in IBD for personalization of disease therapy and risk using proteomics. We have also developed a very productive clinical trial group, with over 20 ongoing clinical trials in IBD, CDI and GI motility disorders.

Keywords:

- Inflammatory bowel disease (IBD)
- Angioectasia
- Irritable bowel syndrome (IBS)
- Clostridium difficile infection (CDI)
- Clinical trials

Key personnel: Jon Hudson Research Associate, Missy Randolph and Renee Henry, Clinical research coordinators

Collaborators: Mary Beth Yacyshyn, PhD; Ian Pacquette, MD; Chip Montrose, PhD; Eitaro Aihara, PhD; Chris Hong, PhD

Mentees: Rajat Madan, MD, PhD; Dr. Tricia Hengehold

✓ *Yes, I am interested in taking on student research assistants.*



Mary Beth Yacyshyn, PhD

Adjunct Associate Professor
Division of Digestive Diseases

The Mary Beth & Bruce Yacyshyn lab is involved in human translational research projects in the area of mucosal immunology. Current projects include, the role of non-immune inflammation and microbiota in angioectasia formation and possible therapy), the immune response in recurrent *C. difficile* infected patients and the development of biomarkers for inflammatory bowel disease, both for therapeutic failure and risk for disease development.

Keywords:

- Clostridium difficile
- Inflammatory bowel diseases
- Angioectasia

Key personnel: Jon Hudson

Collaborators: Bruce Yacyshyn, MD; Dan Hassett, PhD; Senu Apewokin, MD; Rajat Madan, MD, PhD; Mayur Sarangdhur, PhD; Bruce Aranow, PhD; Mindy Engevik, PhD

✓ *Yes, I am interested in taking on student research assistants.*

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Division of

Endocrinology, Diabetes and Metabolism

The Division of Endocrinology, Diabetes and Metabolism is committed to improving the health of our region with excellence in clinical care, translating insights from innovative research, education of patients, the community and health care providers and training the next generation of physician-scientists. Clinical trials in the Division focus on new treatments for diabetes and pituitary disorders. Our overall goal is to build a robust, multi-disciplinary program that supports both laboratory-based and patient-based research.



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 clinical research comparing effectiveness of various therapies for diabetes. 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

Investigators/Trainees:

We have two MD investigators engaged in clinical and translational research, three PhD investigators engaged in basic research, three basic research labs and three clinical trials. There is one endowed chair. Robert Cohen, MD, 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
- UC College of Medicine and Department of Internal Medicine
- Industry and public-private partnerships

Mentoring:

We host undergraduate, graduate and medical students for their research rotations in our research laboratories and offer summer volunteer internships for experience in laboratory-based research.

Collaborations:

Our faculty has many collaborative research efforts with other disciplines including adult and pediatric hematology, Pediatric Gastroenterology, Hepatology and Nutrition, Pediatric Human Genetics, and the Department of Pathology and Laboratory Medicine.

Fighting Diabetes Complications

Jason Winnick, PhD, is on the front lines of improving life for patients with Type 1 diabetes

After Jason Winnick, PhD, finished his four years of active duty as a mortarman with the United States Marines, he wasn't sure of his next move. Despite a father who was a college professor and a mother who was a teacher, Winnick was never interested in college. But armed with a GI Bill, he decided to give academics a try.

"I took intro to biology, and I was fascinated," says Winnick, an assistant professor in the Division of Endocrinology, Diabetes and Metabolism. "Exercise physiology

Jason Winnick, PhD

became my major. I could relate many of my experiences doing labor when I was in the Marine Corps to exercise physiology. That was when I got hooked on science.”

While earning his master’s degree at the University of South Carolina, Winnick was introduced to carbohydrate metabolism while conducting Gatorade exercise studies, and thought he had found his area of focus. When he transitioned to Ohio State University for his PhD, however, he started reading about Type 2 diabetes, which eventually led him to focus specifically on liver glucose metabolism. “The liver is a dynamic organ because it’s regulated by so many different hormones and substrates,” Winnick says. “That was when I realized I wanted to focus on it for my research career.”

Jason Winnick, PhD, was attracted to UC for its rich tradition of diabetes research. “Cincinnati seemed to offer the best combination of resources and collaborative potential,” says the New York native.

With his path chosen, Winnick was attracted to UC for its rich tradition of diabetes research. “Cincinnati seemed to offer the best combination of resources and collaborative potential,” says the New York native.

Today, Winnick’s research focuses on how alterations in liver glycogen stores influences diabetic patients’ ability to

respond to the low blood sugar that results when too much insulin is self-administered to combat high blood sugar. The responses to low blood sugar are diminished in people with Type 1 diabetes.

“By learning more about patients’ responses, we can potentially reduce complications associated with diabetes,” Winnick says. ●





Robert Cohen, MD

Professor of Medicine
Division of Endocrinology, Diabetes and Metabolism

A new project relates to my Senior Faculty Pilot Project Award: “A Paradigm Shift: HbS1c and HbA1c to Measure RBC Turnover in Sickle Cell.” I have a collaborative project with Drs. Diwan, Schauer and Bari on bariatric surgery in the setting of liver transplantation due to non-alcoholic fatty liver disease. Finally, I am working with Drs. Higgins and Nathan, Harvard Medical School, to obtain funding to improve HbA1c interpretation.

Keywords:

- **HbA1c**
- **Diabetes**
- **Biotinylated red blood cells**
- **Blood glucose**
- **Hemoglobin A1c**

Key personnel: Shahriar Arbabi, MD

Collaborators: Robert S. Franco, MD; Eric P. Smith, MD; Daniel P. Schauer, MD; Khurram Bari, MD

<https://med.uc.edu/intmed/divisions/endocrinology-diabetes-metabolism/endocrnology-diabetes-metabolism/endocrinology-directory/faculty-directory/Index/Pubs/cohenrm/>



Mercedes Falciglia, MD

Professor of Clinical Medicine
Division of Endocrinology, Diabetes and Metabolism

Recently I presented outcomes at the American Diabetes Association demonstrating reduced hospital readmission rates and sustained reductions in HbA1c after participation in our UCMC clinical program , “Sweet Transitions”. I am always interested in working with others who share similar interest in health -services research

Keywords:

- **Hyperglycemia**
- **Diabetes**
- **Hospital**

✓ *Yes, I am interested in taking on student research assistants.*

Additional keywords: **Transitions, Readmissions, Health-services**



Shailendra B. Patel, BM, ChB, DPhil

Professor of Medicine and Division Director, Albert W. Vontz Jr. Chair in Diabetes
Division of Endocrinology, Diabetes and Metabolism

New projects on Alzheimer’s mouse models in addition to cholesterol trafficking projects

Key personnel: Nageshwar BabuRao, PhD (post-doc), Research Associates–Min Jiang, Casey Crane, Vickie Horton

Collaborators: Rolf Stotmann, PhD; David Hui, PhD

Mentees: Yufei Dai, MD (Endocrinology Fellow), Zach Briggs (Medical Student)

Keywords:

- **Atherosclerosis**
- **Embryonic development**
- **Cholesterol**
- **Genetic disorders**

✓ *Yes, I am interested in taking on student research assistants.*

Diego Perez-Tilve, PhD

Research Associate Professor

Division of Endocrinology, Diabetes and Metabolism



Ongoing projects in the lab include the contribution of neural mechanisms involved in the control of energy balance to the benefits of time-restricted feeding on metabolic control. We are also investigating the mechanisms whereby vagal efferent signals contribute to the increase in fat following high fat diet feeding.

Key personnel: Lab Manager: Emily Yates; Research Assistants: Jenna Holland, Joyce Sorrell, Kathleen Smith, Marita Rivir.

Collaborators: Eric Wohleb, PhD; James Herman, PhD; Jason Winnick, PhD; Joan Sanchez-Gurmaches, PhD; Takahisha Nakamura, PhD

✓ *Yes, I am interested in taking on student research assistants.*

<http://med.uc.edu/intmed/divisions/endocrinology-diabetes-metabolism/research>

Keywords:

- Energy balance
- Food intake
- Obesity
- Diabetes

Jason J. Winnick, PhD

Assistant Professor

Division of Endocrinology, Diabetes and Metabolism



Our currently funded studies are those examining the relationship between liver glycogen content and hormonal responses to insulin-induced hypoglycemia in healthy controls and patients with type 1 diabetes. We are also interested in the physiology of sleep and the study of interventions (e.g., exercise, bariatric surgery) that improve whole-body glucose metabolism.

Key personnel: Sheri Schmutte (study nurse)

Collaborators: Diego Perez-Tilve, PhD; Jason Heikenfeld, PhD

Mentees: Michael Yao, MD

✓ *Yes, I am interested in taking on student research assistants.*

Keywords:

- Hepatic glucose metabolism
- Hypoglycemia
- Diabetes
- Glucagon
- Exercise
- Bariatric surgery

DISCOVER & INNOVATE*Endocrinology, Diabetes and Metabolism***PUBLICATIONS** July 1, 2017 thru June 30, 2018

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Division of

General Internal Medicine

The focal point for research within the Division is our Center for Clinical Effectiveness. The Center provides a place for investigators from multiple divisions, departments, and professions to share ideas. Many projects have arisen through such interprofessional collaborations. A major goal has been the development of decision support tools.



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. Current projects include:

- Evaluation of the impact of an Atrial Fibrillation Decision Support Tool, available to clinicians throughout UC Health as a tool embedded in our Epic electronic health record
- A randomized trial evaluating the impact of shared decision-making tools for patients with cystic fibrosis compared with usual care
- The impact of bariatric surgery on the incidence of a variety of cancers and issues surrounding bariatric surgery in obese patients being considered for solid organ transplantation
- Cost-effectiveness of using hepatitis C-infected kidneys for transplantation into hepatitis C-infected recipients

Investigators/Trainees:

We have five MD investigators engaged in clinical and translational research; two endowed chairs, the Posey Chair and the Vilter Chair. Faculty in our Division have made major contributions to research in the decision sciences, cancer epidemiology related to obesity, headache, and innovations in medical education.

Funding types:

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

Mentoring:

Our researchers are currently mentoring one PhD candidate, five junior faculty researchers, and 15 internal medicine residents.

Collaborations:

Our projects have involved collaborations across a diverse group, including Digestive Diseases, Transplant Surgery, Cardiology, Neurology, Nephrology, Pulmonary, Center for Health Informatics, the Center for Continuing Professional Development, the Department of English, the College of Design, Architecture, Art and Planning, UC Health Information Technology, and the UC Health Primary Care Network, Massachusetts General Hospital, the University of California San Francisco, the Cleveland Clinic, and McMaster University in Hamilton, Ontario.

Moving Migraine Research Ahead

Studies by Vincent Martin, MD, provide potential promise of relief for patients

The familiar ache above isn't, well, completely in your head, says Vincent Martin, MD, professor in the Division of General Internal Medicine and director of the UC Headache and Facial Pain Center.

Martin, who has spent his career at UC, first as a medical student and clinician, decided to delve into headache research in the mid-1990s. He has since become dedicated to exploring the various causes of headaches and migraines—afflictions he also suffered from himself—and has discovered that many of its triggers stem from factors outside of the head.

Indeed, part of the reason Martin's research has garnered so much media attention is the prevalence of his focus: 12 percent of the U.S. population suffers from migraines, according to the Migraine Research Foundation. This migraine-suffering population is 18 percent female, and some of Martin's most prominent research focuses on the effects of estrogen and progesterone on migraines in

Dedicated to exploring the various causes of headaches and migraines, Martin has discovered that many triggers stem from factors outside of the head.

women of all ages.

"One of the key findings from these studies has been the varying effects of estrogen," Martin says. "The prevailing belief used to be that estrogen was always bad for people, but the reality is that it depends on the situation. For instance, low estrogen levels encountered during menopause can be provocative for migraine in one person, but preventive in another."

Other studies look at the connection between migraines and disorders such as irritable bowel syndrome, anxiety, depression and fibromyalgia, which are more common in migraine patients than the general population. Throughout, Martin remains focused on the most important aspect of medicine: the patient.

Recently, Martin has been examining the effects weather and barometric pressure might have on migraine. "I think it's possible that we could predict migraine in some people with fairly high accuracy using weather data and provide preventative therapies to help them during those times as opposed to daily medication," Martin says. "It could change the way we think about migraines." ●



“One of the key findings from these studies has been the varying effects of estrogen. For instance, low estrogen levels encountered during menopause can be provocative for migraine in one person, but preventive in another.”

Vincent Martin, MD





Tiffany Diers, MD

Associate Professor, Internal Medicine-Pediatrics
Division of General Internal Medicine

UC Health group visits are expanding with implementation grants from Centering Healthcare Institute and we are evaluating their impact with support from Anthem Foundation. I am interested in studying outcomes of our Centering Care and Recovery group visit, focused on moms and babies with perinatal opioid addiction in partnership with Addiction Sciences. I also collaborate with AHC faculty in interprofessional curricular development and evaluation.

Keywords:

- **Implementation research**
- **Quality improvement**
- **Health equity**
- **Sickle cell**
- **Chronic pain**
- **Centering**
- **Group visits**
- **Perinatal opioid addiction**

Collaborators: Elizabeth Kelly, MD; Pamposh Kaul, MD; Ruth Anne Van Loon, PhD; Chris White, JD, MD, MHA; Christine Wilder, MD

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/directory/entire-directory/Index/Pubs/dierstl/>



Mark H. Eckman, MD

Professor of Clinical Medicine, Division Director, Posey Chair
Division of General Internal Medicine

My interests include the development of patient-specific decision support tools, clinical informatics, cost-effectiveness analysis, and the continued study and development of new decision analytic methods. An example of work pulling together threads of decision sciences, clinical informatics and outcomes research has been our work on the Atrial Fibrillation Decision Support Tool (AFSDT), now available in EPIC in the UC Health System.

Keywords:

- **Decision sciences**
- **Patient-centered outcomes research**
- **Clinical informatics**
- **Implementation science**
- **Atrial fibrillation**

Key personnel: Ruth Wise, Carol Knochelman

Collaborators: Dan Schauer, MD; Alex Costea, MD

Mentees: Adam Rose, MD; Ashley Jenkins, MD; Silvi Shah, MD

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/divisions/general-internal-medicine/general-directory/entire-directory/index/pubs/eckmanmh>

Ashley Jenkins, MD

Clinical Instructor
Division of General Internal Medicine



Funded by a CCTST Partnership Development Grant, I am leading a mixed methods community-based participatory research study evaluating the needs of individuals with spina bifida to successfully transition to adult care. I am co-leading an interdisciplinary team conducting a participatory qualitative needs assessment to determine facilitators and barriers of communication on the inpatient medicine wards. Our overall objective is to improve patient care by having more effective geographic inpatient medicine ward design and communication infrastructure.

Collaborators: Kathy Auger, MD; Mark Eckman, MD; Brian Herbst, MD; Patricia Joseph, MD; Adam Rose, MD; Lisa Vaughn, PhD; Danielle Weber, MD; Jason Woodward, MD

<https://researchdirectory.uc.edu/p/jenkinal>

Keywords:

- Participatory research
- Community engagement
- Mixed methods
- Qualitative research
- Health systems navigation
- Transitions of care
- Quality improvement

Vincent T. Martin, MD

Professor of Medicine
Division of General Internal Medicine



We are currently trying to develop mathematical models of weather variables to predict the onset of headache in persons with migraine. We plan on continuing our weather modeling in the upcoming year and applying it to other disease states such as stroke. Our group won the Wolfe award for the top research submission in the headache field. We would be willing to have collaborators or students to help us work on our projects.

Collaborators: Jonathan Bernstein, MD; Richard Lipton, MD; Rob Nicholson, PhD

✓ Yes, I am interested in taking on student research assistants.

Keywords:

- Migraine
- Ehlers Danlos syndrome
- Weather
- Ovarian hormones
- Migraine co-morbidities



Adam Rose, MD

Assistant Professor
Division of General Internal Medicine

I recently organized a group of inpatient health care collaborators who are interested in leading quality improvement projects at UC Medical Center. Members of this group want to take advantage of the opportunity for interdisciplinary team-based improvement interventions created by a planned switch to a geographic unit-based care team model, planned for early 2019. Our current focus is on adopting a framework for prioritizing and implementing QI activities in the inpatient setting.

Keywords:

- **Quality improvement**

Collaborators: Mark Eckman, MD; Brad Mathis, MD; Eric Warm, MD; Amy Costanzo, PhD; Jamie Tu, Beth Stacey, Ashley Jenkins, MD; Danielle Clark, MD; Truc Nguyen, MD, PhD; Jack Kues, PhD

<https://med.uc.edu/intmed/directory/entire-directory/Index/Pubs/rosea3/>



Daniel P. Schauer, MD, MSc

Associate Professor of Clinical Medicine
Division of General Medicine

I am the Principal Investigator on an R01 that was funded by the NCI that examines the relationship between obesity, cancer and intentional weight loss. As associate program director for resident research, I oversee all of the resident research in the Department of Internal Medicine.

Keywords:

- **Obesity**
- **Bariatric surgery**
- **Cancer**
- **Decision analysis**
- **Outcomes research**

Collaborators: Mark Eckman, MD; Eric Warm, MD; Tayab Diwan, MD
Mentees: Muhammad Zafar, MD, MS; Ashley Jenkins, MD; Elizabeth Hellman

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/divisions/general-internal-medicine/general-directory/entire-directory/index/pubs/schuedp>

Eric J. Warm, MD

Richard W. and Sue P. Vilter Chair, Professor of Medicine
Division of General Internal Medicine



Our group has been focused on developing a validity map for work-based assessment of residents. We have created and participated in multiple quantitative and qualitative studies within the medical center, nationally, and internationally to further our understanding of how to best collect and distribute information to foster resident progression towards competence.

Key personnel: Jillian Nolte, Liz Bauke, Amanda Kramer

Collaborators: Benjamin Kinnear, MD; Dana Sall, MD; Matt Kelleher, MD; Daniel Schauer, MD, MSc; Jennifer O'Toole, MD

Mentees: Elyse Harris, Greg Wigger, Elliot Welford, Robert (Bo) Franklin, Nikki Boschuetz, Brian May

Keywords:

- **Medical education**
- **Assessment**
- **Resident training**

✓ *Yes, I am interested in taking on student research assistants.*

<http://med.uc.edu/intmed/education/residency/internal-medicine/director-welcome>

Danielle Weber, MD

Assistant Professor of Medicine, Instructor of Pediatrics
Division of General Internal Medicine, Hospital Medicine



I am interested in improving the quality of clinical documentation via implementation of a curriculum and an assessment system for trainees and examining the effectiveness of these interventions through educational research. I am currently working on improving H&Ps and progress notes. In the future, I plan to work on improving discharge summaries and will be looking to collaborate with a larger group of stakeholders for this research.

Key personnel: Roman Jandarov (statistician)

Collaborators: Jen O'Toole, MD; Ben Kinnear, MD; Matt Kelleher, MD; Dana Sall, MD; Justin Held, MD; Eric Warm, MD

Keywords:

- **Clinical documentation**
- **Assessment**
- **Curriculum development**
- **Educational research**

DISCOVER & INNOVATE*General Internal Medicine***PUBLICATIONS** July 1, 2017 thru June 30, 2018

-
- 1 McGrady ME, **Eckman MH**, O'Brien MM, Pai ALH. Cost-Effectiveness Analysis of an Adherence-Promotion Intervention for Children With Leukemia: A Markov Model-Based Simulation. *J Pediatr Psychol*. 2018 May 15. doi: 10.1093/jpepsy/psy022.

 - 2 Chidambaran V, Subramanyam R, Ding L, Sadhasivam S, Geisler K, Stubbeman B, Sturm P, Jain V, **Eckman MH**. Cost-effectiveness of intravenous acetaminophen and ketorolac in adolescents undergoing idiopathic scoliosis surgery. *Paediatr Anaesth*. 2018 Mar;28(3):237-248. doi: 10.1111/pan.13329. Epub 2018 Jan 29.

 - 3 **Eckman MH**, Costea A, Attari M, Munjal J, Wise RE, Knochelmann C, Flaherty ML, Baker P, Ireton R, Harnett BM, Leonard AC, Steen D, Rose A, Kues J. Atrial fibrillation decision support tool: Population perspective. *Am Heart J*. 2017 Dec;194:49-60. doi: 10.1016/j.ahj.2017.08.016. Epub 2017 Aug 23.

 - 4 **Eckman MH**, Costea A, Attari M, Munjal J, Wise RE, Knochelmann C, Flaherty ML, Baker P, Ireton R, Harnett BM, Leonard AD, Steen D, Rose A, Kues J. Atrial fibrillation decision support tool: Population perspective. *Am Heart J*. 2017 Dec;194:49-60. doi: 10.1016/j.ahj.2017.08.016. Epub 2017 Aug 23. PMID: 29223435.

 - 5 **Schauer DP**, Feigelson HS, Koebnick C, Caan B, Weimann S, Leonard AC, Powers JD, Yenumula PR, Arterburn DE. Association Between Weight Loss and the Risk of Cancer after Bariatric Surgery. *Obesity (Silver Spring)*. 2017 Nov;25 Suppl 2:S52-S57. doi: 10.1002/oby.22002.

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 - 7 Kim Y, Jung AD, Dhar VK, Tadros JS, **Schauer DP**, Smith EP, Hanseman DJ, Cuffy MC, Alloway RR, Shields AR, Shah SA, Woodle ES, Diwan TS. Laparoscopic sleeve gastrectomy improves renal transplant candidacy and posttransplant outcomes in morbidly obese patients. *Am J Transplant*. 2018 Feb;18(2):410-416. doi: 10.1111/ajt.14463. Epub 2017 Sep 12.

 - 8 Warm E, Arora VM, Chaudhry S, Halvorsen A, **Schauer D**, Thomas K, McDonald FS. Networking Matters: A Social Network Analysis of the Association of Program Directors of Internal Medicine. *Teach Learn Med*. 2018 Mar 22:1-8. doi: 10.1080/10401334.2018.1441715. [Epub ahead of print]

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 - 10 **Warm E**, Kelleher M, Kinnear B, Sall D. Feedback on Feedback as a Faculty Development Tool. *J Grad Med Educ*. 2018 Jun;10(3):354-355. doi: 10.4300/JGME-D-17-00876.1. No abstract available.

 - 11 Kinnear B, **Warm EJ**, Hauer KE. Twelve tips to maximize the value of a clinical competency committee in post-graduate medical education. *Med Teach*. 2018 Jun 26:1-6. doi: 10.1080/0142159X.2018.1474191. [Epub ahead of print]

 - 12 **Warm E**, Arora VM, Chaudhry S, Halvorsen A, Schauer D, Thomas K, McDonald FS. Networking Matters: A Social Network Analysis of the Association of Program Directors of Internal Medicine. *Teach Learn Med*. 2018 Mar 22:1-8. doi: 10.1080/10401334.2018.1441715. [Epub ahead of print]

 - 13 Desai SV, Asch DA, Bellini LM, Chaiyachati KH, Liu M, Sternberg AL, Tonascia J, Yeager AM, Asch JM, Katz JT, Basner M, Bates DW, Bilimoria KY, Dinges DF, Even-Shoshan O, Shade DM, Silber JH, Small DS, Volpp KG, Shea JA; **iCOMPARE Research Group**. Education Outcomes in a Duty-Hour Flexibility Trial in Internal Medicine. *N Engl J Med*. 2018 Apr 19;378(16):1494-1508. doi: 10.1056/NEJMoa1800965. Epub 2018 Mar 20. ACM.0000000000001457.

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Division of

Hematology Oncology

The scientists and clinical investigators within the Division strive to gain a better understanding of cancer's molecular basis with the overall goal of developing improved cancer treatments. Over the past year, 214 patients were enrolled in trials offered by the Division, which is the highest enrollment of any division in the University of Cincinnati Cancer Institute. Examples of our successful research programs include discovery of the SapC-DOPS compound by Dr. Xiaoyang Qi, a phase I trial by Dr. Morris of the humanized version (BXQ-350) of that compound, as well as the determination that cancer immunotherapy dramatically improves the effects of radiotherapy in head and neck cancer by Dr. Wise-Draper.



Pier Paolo Scaglioni, MD
DIVISION DIRECTOR

Research Focus Areas/Types:

BASIC RESEARCH:

The Division has eight independent laboratory programs. Examples include:

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

CLINICAL RESEARCH:

We have a portfolio of 52 open phase I-III trials for a wide array of cancer types. Our experimental therapeutic program is one of a kind in the region providing patients access to emerging promising therapies tested in man for the first time.

Investigators/Trainees:

Three clinical investigators dedicated to execution of 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 13 Hematology and Oncology fellows, several of which are engaged in original research in the Experimental Therapeutic program or in the divisional labs.

Funding types:

- National Institutes of Health
- UC College of Medicine and Department of Internal Medicine
- VA Medical Center
- Industry and public-private partnerships
- Department of Defense

Mentoring:

Our researchers are currently mentoring six post-doctoral fellows in addition to several graduate and 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.

Fighting Cancer, Clinically

Why don't clinical treatments work the same for all patients, asks Sarah Palackdharry, MS

The current daily work of Sarah Palackdharry, MS, a senior research assistant in the Division of Hematology Oncology, focuses on head and neck cancer in humans.

Her work in a laboratory in the Vontz Center for Molecular Studies on UC's medical campus is translational and designed to explore why and how certain patients with head and neck cancer do respond to treatment and others don't. Palackdharry works closely with Trisha Wise-

Draper, MD, PhD, a medical oncologist and Vinita Takiar, MD, PhD, a radiation oncologist. Wise-Draper and Takiar both see patients at UC Health Barrett Cancer Center.

"We have many ongoing projects looking at everything from cancer metabolism to the immune response to cancer," says Palackdharry. "One of our projects revolves around the human oncogene DEK. It is involved in numerous biological process

impacting DNA replication and repair.

"High DEK expression in the tumor correlates with aggressive disease and poor patient survival," says Palackdharry. "Interestingly, when DEK plasma levels are high, it correlates with the exact opposite. We believe DEK is able to manipulate the anti-tumor immune response and are trying to figure out how it is happening."

Palackdharry also uses correlative science for principal investigator trials to identify biomarkers to predict patient response to treatments. She serves as the correlative science specialist on the IIT Committee set up by the UC Cancer Institute to make sure clinical trial protocols incorporate laboratory science that will strengthen the overall impact.

Three years after joining the department, Palackdharry says she is loving her work and has found a mentor in Wise-Draper, an assistant professor in the Division of Hematology Oncology.

"In my time here, I've found that my heart really lies in working with clinical trials. Dr. Wise-Draper pushes me to become the best person I can be, to exceed in what interests me and to pursue what I really enjoy," Palackdharry says. "Our main goal is to eventually identify treatments for head and neck cancer that will be more personalized and effective for patients." •

"High [human oncogene] DEK expression in the tumor correlates with aggressive disease and poor patient survival. Interestingly, when DEK plasma levels are high, it correlates with the exact opposite. We believe DEK is able to manipulate the anti-tumor immune response and are trying to figure out how."

Sarah Palackdharry, MS



“Our main goal is to eventually identify treatments for head and neck cancer that will be more personalized and effective for patients.”

Sarah Palackdharry, MS





Vladimir Bogdanov, PhD

Associate Professor of Internal Medicine
Division of Hematology Oncology

Research in our laboratory spans basic and translational cancer research, vascular biology, and post-transcriptional regulation of gene expression. Currently, the first area of focus comprises biological functions of Tissue Factor splice variants, as well as the roles they play in the progression of solid malignancies and in cancer-associated thrombotic disorders. The second area of focus comprises mechanistic contributions of erythrocytes to the development and propagation of systemic pro-inflammatory states in such settings as diet-induced obesity.

Keywords:

- **Coagulation system and cancer**
- **Thrombotic disorders**

Key personnel: Clayton S. Lewis, PhD, post-doctoral fellow

Collaborators: Nigel Mackman, PhD; Henri Versteeg, PhD; Neal Weintraub, MD

Mentees: Clayton S. Lewis, PhD

✓ *Yes, I am interested in taking on student research assistants.*



Mahmoud Charif, MD

Associate Professor of Clinical Medicine
Division of Hematology Oncology

I am collaborating with the breast cancer multidisciplinary team (Drs. Lower, Zhang, Khan, and Wong) on the study ‘MED1 Estrogen Receptor Coactivator and Breast Cancer.’ I am a member of the American Society of Clinical Oncology (ASCO) and the principal investigator on five clinical trials. I had an abstract presented at the College of American Pathologists Annual Meeting.

Keywords:

- **Breast cancer**
- **Hormone resistance**
- **Her-2**

Collaborators: Elyse Lower, MD; Xiaoting Zhang, PhD; Shagufta Khan, MD; Dr. Wong

Mentees: Dr. Connolly, Dr. Elyse Harris, Dr. Phan

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/directory/entire-directory/Index/Pubs/charif/>

Rekha Chaudhary, MD

Adjunct Associate Professor of Medicine;
Director of Hematology Oncology Fellowship
Division of Hematology Oncology



I have been practicing neuro-oncology since 2010. I am a PI on multiple industry and cooperative group sponsored clinical trials. I am also Chairperson of the UC Brain Tumor Marketing Committee and Co-Chairperson of the UC Brain Tumor Clinical Trials Committee. Since I also have an interest in integrative oncology, I am writing and have received funding for a prospective trial looking at the feasibility of ketogenic diet in glioblastoma multiforme.

Collaborators: Robert Krikorian, PhD (Psychiatry); Amanda Stein, PhD (Psychiatry); Tammy Ward, RD (UC Cancer Institute)

✓ Yes, I am interested in taking on student research assistants.

<http://med.uc.edu/intmed/divisions/hematology-oncology/hematology-oncology-directory/faculty-directory/Index/Pubs/tripatrr/>

Keywords:

- **Neuroncology**
- **Ketogenic diet**
- **Integrative oncology**

Tahir Latif, MBBS, MBA, FACP

Professor of Clinical Medicine
Division of Hematology Oncology



I joined UC in 2010 after 6 years in private practice. Since then I have served as the institutional PI of several clinical trials in the area of malignant hematology. I also play a major role in patient enrollment in the area of solid tumor oncology for lung, head and neck and GI cancer patients. My personal focus over the last couple of years has been on the prevention and treatment of CNS involvement by diffuse large B cell lymphoma. I am also Director, Infusion Services, UC Medical Center.

Collaborators: James Driscoll, MD, PhD; Imran Arif, MD; Mohammad Azam, PhD (Cincinnati Children's Hospital Medical Center Experimental Hematology); Steve Woodle, MD (UC Transplant Surgery)

✓ Yes, I am interested in taking on student research assistants.

<http://med.uc.edu/intmed/divisions/hematology-oncology/hematology-oncology-directory/faculty-directory/Index/Pubs/latiftr/>

Keywords:

- **Solid tumor oncology**
- **Central nervous system**
- **Diffuse large b cell lymphoma**



Carol Mercer, PhD

Research Assistant Professor
Division of Hematology Oncology

This year, we published two papers on autophagy, mTOR inhibitors and phenformin in HCC. We are currently working on a project that extends this work, looking at the mechanism and therapeutic importance of phospholipid metabolism at mitochondria-associated membranes (MAMs). In a new project funded by RIDE Cincinnati, we are studying selective autophagy and the role of CALCOCO1 in breast cancer.

Keywords:

- **Autophagy**
- **Mitophagy**
- **mTOR**
- **Metabolism**
- **Phospholipids**

Collaborators: Xiaoting Zhang, PhD (Cancer Biology), Kenneth Setchell, PhD (Director of the Division of Mass Spectrometry, CCHMC); Joshua J Coon

✓ *Yes, I am interested in taking on student research assistants.*



John C. Morris, MD

Professor of Medicine
Division of Hematology Oncology

We have been studying interleukin-15 (IL-15) expressing tumors cells as an approach to antitumor vaccination. While active against pre-established mouse lung tumors, this approach is not curative. To enhance the effect of the vaccine we are examining the use of antibodies and decoy molecules that up-regulate NK cell function. I am also Director of Thoracic Oncology Programs and of Experimental Therapeutics and Co-Director, UC Lung Cancer Center.

Keywords:

- **Lung cancer**
- **Head and neck cancer**
- **Vaccines**
- **Interleukin-15**
- **NK Cells**
- **Immunotherapy**

Key personnel: Donatien Kamdem Toukam, PhD

Collaborators: Sandra L. Starnes, MD; Thomas A. Waldmann, MD (NCI, Bethesda, MD); Jason Steel, PhD (Queensland University, Australia); Lt. Brain J. Morrison, PhD (Naval Medical Research Center, Silver Spring, MD); Joo-Youp Lee, PhD

Mentees: Donatien Kamdem Toukam, PhD

✓ *Yes, I am interested in taking on student research assistants.*

<https://uchealth.com/physician/john-morris/?ref=635&site=2>

Olugbenga O. Olowokure, MD

Associate Professor of Clinical Medicine
Division of Hematology Oncology



I specialize in gastrointestinal cancers such as malignancies of the pancreas, colon, rectum, anus, esophagus, stomach, small intestine, GIST tumors, carcinoid tumors, liver, gallbladder, and bile ducts/ cholangiocarcinomas. As our most senior GI oncologist, I am the principal investigator or sub PI on all GI related malignancy protocols at the University of Cincinnati Cancer Institute. I am also Director, Inpatient Service, UC Medical Center.

Collaborators: Xiaoyang Qi, PhD

✓ Yes, I am interested in taking on student research assistants.

<http://med.uc.edu/intmed/divisions/hematology-oncology/hematology-oncology-directory/faculty-directory/Index/Pubs/olwokoo/>

Keywords:

- Gastrointestinal cancers
- Immunotherapy
- Cholangiocarcinoma
- Novel chemotherapy modalities
- Biliary cancers
- Hepatocellular carcinoma
- Pancreatic cancer

Xiaoyang Qi, PhD

Professor of Medicine
Division of Hematology Oncology



Our biggest accomplishment this year is completion of the phase 1a clinical trial for BXQ-350 (SapC-DOPS) by Bexion Pharmaceuticals. Media coverage included the *Cincinnati Enquirer*, “Patient No. 1 and the cancer trial here that just might change everything”, in August 2018. <https://www.cincinnati.com/story/news/2018/08/08/possible-answer-cancer-made-cincinnati/879696002/> and in *USA Today*, “The first human trials of this experimental, cancer-killing drug could change everything”, August 13, 2018. <https://www.usatoday.com/story/news/nation-now/2018/08/09/researchers-test-experimental-drug-could-answer-cancer/948394002/>

Key personnel: Subrahmanya Duttu Vallabhapurapu, PhD;
Harold W. Davis, PhD

Collaborators: Vladimir Bogdanov, PhD; David Plas, PhD; Ying Sun, PhD;
John Morris, MD; Olugbenga Olowokure, MD; Syed Ahmed, MD

Mentees: Kombo N’Guessan, BS; Ahmet Kaynak, BS, MS

Keywords:

- Anti-cancer drug development
- SapC-DOPS
- Molecular targeting
- Translational research
- Tumor modeling



Neetu Radhakrishnan, MD

Assistant Professor of Clinical Medicine
Division of Hematology Oncology

My main areas of interest are breast cancer, lymphomas, myeloproliferative disorders, aHUS, and TTP. I am also interested in assessing the response of multiple sclerosis patients to taxane and platinum containing chemotherapy. I am also interested in identifying, quantifying and characterizing the prevalence of breast and prostate cancer in the Asian, Southeast Asian and Middle Eastern populations as data on these ethnicities are rare in the US.

Keywords:

- Breast cancer
- Lymphomas
- Myeloproliferative disorders
- aHUS
- TTP
- Multiple Sclerosis

✓ Yes, I am interested in taking on student research assistants.

<http://med.uc.edu/intmed/divisions/hematology-oncology/hematology-oncology--directory/faculty-directory/Index/Pubs/radhaknu/>



Atsuo Sasaki, PhD

Associate Professor
Division of Hematology Oncology

We are very proud that Dr. Satoshi Kofuji and Dr. Hirofumi Yoshino get tenure-track assistant professor after training in our lab, and that Ms. Kara Wolfe and Dr. Sasaki both have received fellowship for research abroad.

Key personnel: Sho Tabata, PhD; Mika Sasaki, MS

Collaborators: Carol Mercer, PhD; Trisha Wise-Draper, MD, PhD; David Plas, PhD; Tom Cunningham, PhD; Maria Czyzyk-Krzeska, MD, PhD; Pankaj Desai, PhD

Mentees: Kara Wolfe, Hongyang Yu, Mitsuo Hinoi, Mio Harachi, Jared Iding

<http://www.thesasakilab.org/>

Keywords:

- Energetics
- Metabolism
- Signaling in cancers

Pier Paolo Scaglioni, MD

Professor and Division Director
Division of Hematology Oncology



We study the KRAS and MYC oncogenes using mouse models, cell lines, small molecule inhibitors, RNAi and CRISPR/CAS9 to identify novel targets for therapy in lung cancer and leukemia. We identified focal adhesion kinase, the XPO1 nuclear export receptor and fatty acid metabolism as novel therapeutic targets. We also identified the SUMO E3 ligase PIAS1 a critical regulator of MYC. These findings led to several clinical trials. We welcome new trainees.

Key personnel: Caterina Bartolacci, PhD (post-doc); Cristina Andreani, PhD (post-doc); Margherita Melegari, MD, PhD (Research Associate); Rebecca Holmes (Research Technician)

Collaborators: Jun-Lin Guan, PhD

Mentees: Caterina Bartolacci, PhD (post-doc), Cristina Andreani, PhD (post-doc)

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/divisions/hematology-oncology/about>

Keywords:

- Mutant KRAS
- MYC
- PML tumor suppressor
- Lung cancer
- Lipid metabolism in cancer
- Sumoylation
- Promyelocytic leukemia

Trisha Wise-Draper MD, PhD

Assistant Professor of Clinical Medicine
Medical Director UCCI Clinical Trials Office
Division of Hematology Oncology



I run a co-PI laboratory with Vinita Takiar, MD, PhD, exploring mechanisms of treatment resistance in head and neck cancer. We design and execute investigator initiated clinical trials with correlative analysis to better understand how drugs including immunotherapy impact the patient. This translational research allows for development of future trials using new combinations to overcome treatment resistance achieving better patient outcomes. A recent study, UCCI-HN-15-01, was highlighted at ASCO in 2018 underscoring the importance of these investigations.

Key personnel: Sarah Palackdharry, Rachel Vachon, Melissa Asman, Alison Kastl, Nicky Kurtzweil, Barbara Burke, Benjamin Quast

Collaborators: Vinita Takiar, MD, PhD; Laura Conforti, PhD; Edith Janssen, PhD; Scott Langevin, PhD; Senu Apewokin, MD; Jun Lin Guan, PhD; Lisa Privette, PhD; Kakajan Komurov, PhD

Mentees: Vidhya Karivedu, Jen Leddon, Eejung Kim, Matt Cortese, Logan Roof, Eric Vick, Elyse Harris, Lauren McKenzie

✓ *Yes, I am interested in taking on student research assistants.*

Keywords:

- Head and neck cancer
- Experimental therapeutics
- Immunotherapy
- Drug resistance
- DEK oncogene

- 1 A single high-fat meal provokes pathological erythrocyte remodeling and increases myeloperoxidase levels: implications for acute coronary syndrome. Benson TW, Weintraub NL, Kim HW, Seigler N, Kumar S, Pye J, Horimatsu T, Pellenberg R, Stepp DW, Lucas R, **Bogdanov VY**, Litwin SE, Brittain JE, Harris RA. *Lab Invest*. 2018 Mar 23. doi: 10.1038/s41374-018-0038-3. [Epub ahead of print] PMID: 29572498
- 2 Deletion of the Duffy antigen receptor for chemokines (DARC) promotes insulin resistance and adipose tissue inflammation during high fat feeding. Benson TW, Weintraub DS, Crowe M, Yiew NKH, Popoola O, Pillai A, Joseph J, Archer K, Greenway C, Chatterjee TK, Mintz J, Stepp DW, Stansfield BK, Chen W, Brittain J, **Bogdanov VY**, Gao Y, Wilson JG, Tang Y, Kim HW, Weintraub NL. *Mol Cell Endocrinol*. 2018 Jan 16. pii: S0303-7207(18)30015-7. doi: 10.1016/j.mce.2018.01.006. [Epub ahead of print] PMID: 29341885
- 3 Tissue factor variants induce monocyte transformation and transdifferentiation into endothelial cell-like cells. Arderiu G, Espinosa S, Peña E, Crespo J, Aledo R, **Bogdanov VY**, Badimon L. *J Thromb Haemost*. 2017 Aug;15(8):1689-1703. doi: 10.1111/jth.13751. PMID: 28585414
- 4 Interplay between alternatively spliced Tissue Factor and full length Tissue Factor in modulating coagulant activity of endothelial cells. Ünlü B, **Bogdanov VY**, Versteeg HH. *Thromb Res*. 2017 Aug;156:1-7. doi: 10.1016/j.thromres.2017.05.028. PMID: 28570958
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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 FcεR1α, 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. Wenhai 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
- VA Medical Center
- UC College of Medicine and Department of Internal Medicine
- Industry and 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 ACGME 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.

Next Generation

David Bernstein, MD, advances asthma research while nurturing future investigators

David Bernstein, MD, has been conducting research at UC for more than three decades, but this hasn't slowed his interest in finding breakthroughs to tackle asthma and allergy.

An emeritus professor in the Division of Immunology, Allergy and Rheumatology, Bernstein spent the past five years working with an international team of clinicians and scientists to advance our knowledge of a rare occupational disease, diisocyanate-induced asthma (DA).

Their work, published in *The Journal of Allergy Clinical Immunology*, describes the presence of genetic variants

with gene regulatory effects that are associated with DA and demonstrates their potential functional relevance. It represents a key step in understanding the mechanism of this condition.

Annually about 280,000 workers in the United States are exposed to diisocyanates and up to five percent of these individuals can develop asthma or respiratory conditions as a result. Diisocyanates are used in the manufacture of polyurethane products used for car paints, boats, furniture, appliance and electronics. They are considered chemical sensitizers and over time exposure even at lower concentrations can trigger an

asthmatic response in individuals.

"To study a rare disease generally requires collaborative skills, extroverted personality, entrepreneurial spirit and an interest in developing new ideas," says Bernstein. "The key to successful team science is establishing trust within the collaborative group."

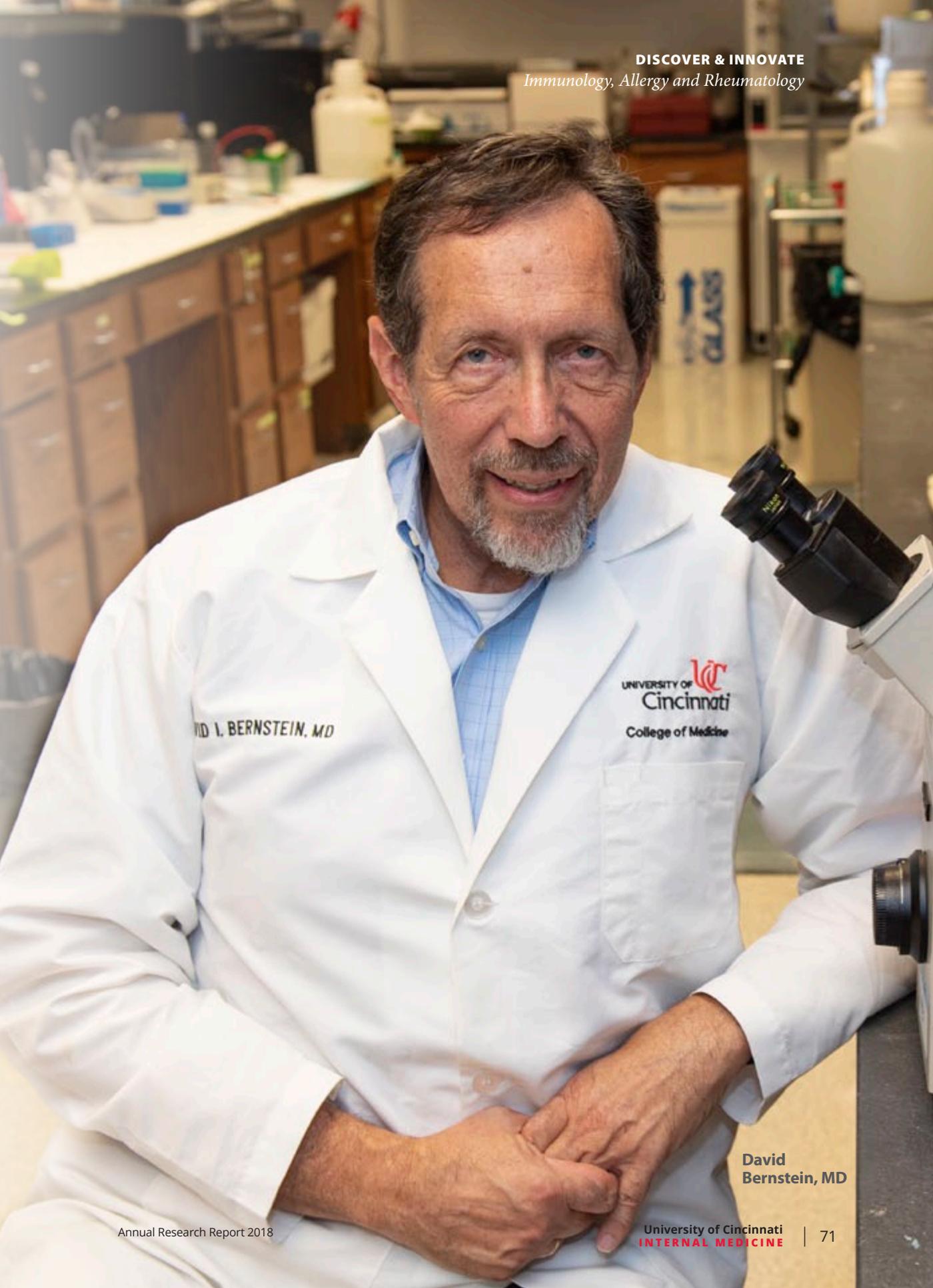
Bernstein, who has been on faculty at UC since 1982, received his medical degree in the College of Medicine and followed with residency at Cleveland Clinic and a fellowship at Northwestern University. He says a successful physician-scientist needs a few key elements—"fire in the belly"; great mentoring, strong institutional support, excellent collaborators, persistence and an effective mix of clinical work and scientific research.

Bernstein has served as the principal investigator of the Allergy and Immunology T32 training grant for research fellows in training at UC since 2004.

"An important goal throughout my career has been to understand and investigate the basic mechanisms of disease as a way of discovering new knowledge to improve patient outcomes," says Bernstein. "A legacy I have nurtured and hope endures in the College of Medicine is our ability to train the next generation of allergy researchers." ●



Bernstein says a successful physician-scientist needs a few key elements—"fire in the belly"; great mentoring, strong institutional support, excellent collaborators, persistence and an effective mix of clinical work and scientific research.



DAVID I. BERNSTEIN, MD

UNIVERSITY OF
Cincinnati
College of Medicine

**David
Bernstein, MD**



David I. Bernstein, MD

Emeritus Professor of Medicine
Division of Immunology, Allergy and Rheumatology

We published results of next generation sequencing study of workers with occupational asthma in the *Journal of Allergy and Clinical Immunology*. We received a departmental grant to study the regulatory function of occupational asthma associated variant alleles.

Keywords:

- Asthma
- Occupational asthma
- Allergen immunotherapy

Key personnel: Zana Lummus, PhD; Banu Kesavalu, MS
Collaborators: Kenneth Kaufman, PhD; Patrick Ryan, PhD
Mentees: Anh Dao, MD; Amy Eapen, MD

✓ Yes, I am interested in taking on student research assistants.

Additional keywords: **Environmental; Genetic**



Jonathan Bernstein, MD

Professor of Clinical Medicine (Adjunct)
Division of Immunology, Allergy and Rheumatology

Research efforts focus on investigating hereditary and other forms of angioedema, chronic urticaria, rhinitis and asthma.

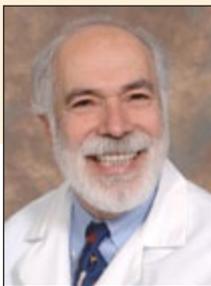
Key personnel: Debajyoti Ghosh, PhD; Umesh Singh, MD, PhD, MS

✓ Yes, I am interested in taking on student research assistants.

Keywords:

- Angioedema
- Asthma
- Urticarial

Additional keywords: **Hereditary; Environment**



Fred D. Finkelman, MD

Walter A. and George McDonald Foundation Chair
Professor of Internal Medicine (emeritus)
Division of Immunology, Allergy and Rheumatology

Projects: Protection against antibody-mediated disease by wimpy antibodies; Mechanisms of IgG-mediated anaphylaxis; Suppression of food allergy by rapid desensitization. Promotion of allergy by the unfolded protein response is the biggest accomplishment of the past.

Keywords:

- Anaphylaxis
- Food allergy
- Unfolded protein response
- Rapid desensitization
- Wimpy antibodies

Key personnel: Suzanne Morris, PhD; Marat Khodoun, DVM, PhD; Unni Samavedam, PhD; Christopher McKnight, MD
Collaborators: George Deepe, Marc Ehlers, Matthias Piepp, Wenhai Shao, Daniel Conrad, Hua Huang, Simon Hogan, Raif Geha, Jörg Köhl, Rudolf Manz, Christian Fernandez, Xiu-Min Li
Mentees: Unni Samavedam, PhD; Christopher McKnight, MD

Marat Khodoun, DVM, PhD

Research Assistant Professor
Division of Immunology, Allergy and Rheumatology



Recently, we received a DCI Paul Teschan Reserve Fund research grant in collaboration with Laura Conforti, PhD (Nephrology). I received a travel award for the 2018 World Immune Regulation Meeting in Switzerland. We published a manuscript in the *Journal of Allergy and Clinical Immunology*. I am very open to new collaborations.

Key personnel: Elizabeth Angerman

Collaborators: Laura Conforti, PhD; Fred Finkelman, MD; Stephen Waggoner, PhD

Mentees: Tina Voegel

Keywords:

- Food allergy
- Anaphylaxis
- Autoimmunity
- Lupus
- Humanized animal models

Christopher G. McKnight, MD

Instructor of Medicine
Division of Immunology, Allergy and Rheumatology



Leveraging the significance of IL-4Ra in allergic processes, I am investigating the mechanism of airway hyperresponsiveness in experimental asthma. I plan to broaden this work's findings to address the significance of goblet cell metaplasia in many forms of airway disease.

Collaborators: Fred Finkelman, MD; Tim Weaver, PhD

Keywords:

- Asthma
- Allergic airway disease
- Disease modeling
- Airway hyperresponsiveness

Suzanne C. Morris, PhD

Research Associate Professor of Medicine
Division of Immunology, Allergy and Rheumatology



Areas of interest: optimization of drug inhibition of IgE-mediated anaphylaxis; investigation of role the hinge region length of Ig as well as the isotype of the Ig plays in the ability of the Ig to limit or ameliorate host damaging responses; determination of whether established food allergy can be safely suppressed by rapid desensitization with anti-FcεR1a mAb and the evaluation of whether food allergens promote pro-Th2 cytokine production and food allergy by induction of the unfolded protein response.

Collaborators: Fred Finkelman, MD; Marat Khodoun, DVM, PhD; Unni Samavedam, PhD

Keywords:

- Anaphylaxis
- Ig
- Food allergy



William M. Ridgway, MD

Alice W. and Mark A. Brown Chair, Professor in Internal Medicine
Division Director
Division of Immunology, Allergy and Rheumatology

My research program addresses the molecular pathogenesis of autoimmunity and the immunogenetic mechanisms of autoimmune disease, with particular attention to primary biliary cirrhosis and Type 1 Diabetes. Recently the lab has developed novel immunotherapies for autoimmunity and published an approach whereby selective stimulation of TLR4 reversed new onset Type 1 Diabetes.

Keywords:

- **Primary biliary cirrhosis**
- **Type 1 diabetes**
- **Immunogenetic mechanism**
- **Autoimmunity**
- **Autoimmune disease**

Collaborators: Jonathan Katz, PhD; Fred Finkelman, MD; Claire Chougnet, PhD; Larry Dolan, MD; Andy Herr, PhD; Jorge Bezzera, MD; Michael Jordan, MD; Bruce Aronow, PhD

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/directory/entire-directory/Index/Pubs/ridgwawm/>



Wenhai Shao, PhD

Assistant Professor
Division of Immunology, Allergy and Rheumatology

TAM (Tyro-3, Axl, and Mer) receptor tyrosine kinases are mainly expressed on macrophages and DCs, facilitating their clearance of apoptotic cells and regulating immune responses, including immune tolerance. Over the past 10 years, I have worked on the TAM receptors using animal models of lupus, arthritis, and nephritis. We are now investigating the mechanisms by which Axl and Mer regulate renal inflammation in vivo and in vitro.

Keywords:

- **Autoimmune disorder**
- **Lupus**
- **Lupus nephritis**
- **Rheumatoid arthritis**

Key personnel: Yuxuan Zhen

Collaborators: Fred Finkelman, MD; Tracy G. McGaha, PhD; Divaker Choubey, PhD

✓ *Yes, I am interested in taking on student research assistants.*

<https://researchdirectory.uc.edu/p/shaowi>

PUBLICATIONS July 1, 2017 thru June 30, 2018

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DISCOVER & INNOVATE*Immunology, Allergy and Rheumatology***PUBLICATIONS** CONTINUED

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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 three PhD investigators with over \$20M 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 translation 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 Huaman 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
- Veterans Affairs--VA Medical Center
- UC College of Medicine and Department of Internal Medicine
- Industry and 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*.

Learning from the Best

Mentor support has helped jumpstart a research career for Moises Huaman, MD

For Moises Huaman, MD, assistant professor, interest in studying infectious diseases started after medical school in his native Peru.

"I liked that with most infections, if you get the right diagnosis and right treatment, these are curable illnesses in patients," says Huaman.

Today, Huaman focuses primarily on tuberculosis, a common infection worldwide that is still a leading cause of death in many resource-limited regions. In particular, Huaman is focused on reported associations between tuberculosis and cardiovascular events.

"We don't know yet the exact connection between these two conditions," Huaman says. "But we know that this is important to research because of the overlapping epidemics of tuberculosis and cardiovascular disease around the globe. Once we understand this relationship, we could propose interventions to decrease the burden of cardiovascular disease related to tuberculosis."

Huaman says the mentorship he has received at UC has been invaluable in his research so far. He has worked most closely with Carl Fichtenbaum, MD, associate chair for translational research in the Department of Internal Medicine and professor of infectious diseases.

Huaman is also working with George Deepe, MD, professor of infectious diseases, who offers expertise in immunology for Huaman's research; and David Hui, PhD, professor in the Department of Pathology and Lab Medicine, who is assisting Huaman in understanding the complexities of the atherosclerosis process.

"Dr. Fichtenbaum has been my primary mentor," Huaman says. "He's been a great role model as a physician investigator. All of my mentors are busy and accomplished people but take their time to listen and provide guidance and seem very committed to educating the next generation of investigators. And it's not only them; I've seen that attitude in many researchers here at UC. It's a very supportive environment." ●

"All of my mentors are busy and accomplished people but take their time to listen and provide guidance and seem very committed to educating the next generation of investigators."

Moises Huaman, MD

Moises Human, MD





Senu Apewokin, MD

Assistant Professor of Clinical Medicine
Division of Infectious Diseases

Patients undergoing immunosuppressive events have increased risk for developing infections. We study the influence of the microbiome on developing these infections using organoids

Collaborators: Alison Weiss, PhD; David Haslam, MD; Tesfaye Mersha, PhD; Trisha Wise-Draper, MD, PhD

Keywords:

- Microbiome
- Organoids
- Transplant infections
- Clostridium difficile

✓ Yes, I am interested in taking on student research assistants.



Melanie T. Cushion, PhD

Professor (tenured), Senior Associate Dean for Research, College of Medicine
Division of Infectious Diseases

We have shown that a new class of anti-fungals targeting B-glucan synthesis, the “fungerp” (Ibrexafungerp), are effective in depleting asci and preventing Pneumocystis pneumonia in the mouse model. We also discovered that Pneumocystis must undergo sexual replication to produce active infection. A new VA Merit grant and R01 were awarded to study this unique aspect of the life cycle. I was also named a UC TDRLP mentor for 2018-2019.

Keywords:

- Pneumocystis pneumonia
- AIDS-related OIs
- Fungal pathogen
- Immuno-compromised hosts

Key personnel: Alan Ashbaugh, Senior Research Associate; Nikeya Tisdale, PhD, post-doctoral fellow; Steve Sayson, MS, graduate student

Collaborators: Alexey Porollo, PhD, CCHMC; Eddie Merino, PhD, Dept. Chemistry, UC A&S; Philippe Hauser, PhD, Lausanne, Switzerland; Tom Patterson, MD, UT Health, San Antonio; Tongli Zhang, PhD, Dept. Pharmacology and Systems Physiology; Maurizio DelPoeta, MD, Stony Brook; Michael J. Linke, PhD, UC College of Medicine; Pankaj Desai, PhD, UC College of Pharmacy; Larry Sallens, PhD, Dept. Chemistry, UC A&S; Chad Rappelye, OSU; Olga Matos, MD, Portugal; Paula Gomes, Portugal; Ken Bartizal, PhD, Cidara Inc., Steve Barat, Scynexis, Inc.

Mentees: Nikeya Tisdale, PhD; Tiffany Grant, PhD; Jacinda Dariotis, PhD; Daria Narmoneva, PhD

✓ Yes, I am interested in taking on student research assistants.

<http://med.uc.edu/research>

George S. Deepe Jr., MD

Professor of Medicine
Division of Infectious Diseases



Our current work focuses on the host immune response to the pathogenic fungus, *Histoplasma capsulatum*. We are interested in the genes in innate immune cells that dictate the outcome of infection. We also are interested in immunometabolism of macrophages and dendritic cells and how this process shapes their response to the fungus.

Key personnel: William Buesing—lab manager; Postdocs—Diego Rossi, Hani Alrefai, Heather Evans, Chelsea Bueter; Grad Students; Shuo Huang, Xiangfie Xie.

Collaborators: Julio Landero, PhD; Artem Barski, PhD; Fred Finkelman, MD; Marat Khodoun, DVM, PhD; Alexey Porollo, PhD

Mentees: Shuo Huang, Xiangfie Xie, Rajat Madan, MD, PhD; Moises Huaman, MD

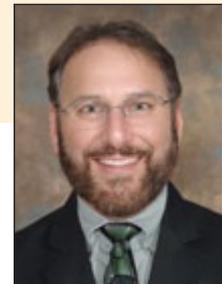
Keywords:

- Fungi
- Metabolism
- Innate immunity
- T cells
- Lung

✓ *Yes, I am interested in taking on student research assistants.*

Carl J. Fichtenbaum, MD

Professor of Clinical Medicine, Associate Chair for Translational Research
Division of Infectious Diseases



We continue to have a productive human clinical research program focusing on HIV treatment, cure and prevention. We conduct 30-40 clinical studies. I am always looking for students, residents and fellows interested in research. Two major accomplishments were enrolling our 100th participant in the REPRIEVE trial (Study to prevent cardiovascular disease in HIV) and meeting our goal of enrolling 65 participants in HPTN 083 (HIV prevention study).

Key personnel: Sharon Kohrs (Clinical Research Director), Josette Robinson-Eaton (Virology Lab Manager)

Collaborators: Jason Heikenfeld, PhD; Steve Grinspoon, MD (Harvard); Turner Overton, MD (UAB); Michael Lederman, MD (Case); Rafick Sekaly, PhD (Case); Benigno Rodriguez, MD (Case)

Mentees: Moises Huaman, MD (DOIM-ID), Joe Perazzo, PhD (College of Nursing)

Keywords:

- HIV/AIDS
- Clinical trials
- Cardiovascular disease
- HIV prevention
- HIV cure

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/divisions/infectious-diseases/infectious-diseases-directory/entire-directory/Index/Pubs/fichtecj/>



Lisa Haglund, MD

Associate Professor of Clinical Medicine
Division of Infectious Diseases

My clinical interests include the care of patients with Tuberculosis and non-tuberculous mycobacterial (NTM) infections and HIV-infected patients, as well as other infections. My research interests include M. tuberculosis, NTM, and Nocardia. I am one of the Vice-Chairs of the Institutional Review Board of the University of Cincinnati.

Keywords:

- HIV
- M. tuberculosis
- Non-tuberculous mycobacteria
- Nocardia

✓ Yes, I am interested in taking on student research assistants.

<https://med.uc.edu/intmed/divisions/infectious-diseases/infectious-diseases-dir>



Moises A. Human, MD, MSc

Assistant Professor of Clinical Medicine
Division of Infectious Diseases

I am a CCTST KL2 Research Scholar. Our current work examines subclinical atherosclerosis and immune activation in tuberculosis. We are involved in projects conducted locally and internationally.

Collaborators: Joe Qualls, PhD (CCHMC)

✓ Yes, I am interested in taking on student research assistants.

<https://med.uc.edu/intmed/divisions/infectious-diseases/infectious-diseases-directory/entire-directory>

Keywords:

- Tuberculosis
- Mycobacterial infections
- Immune activation
- HIV
- Cardiovascular disease

Pamposh Kaul, MD

Professor of Clinical Medicine
Division of Infectious Disease Center



The Midwest AIDS Training and Education Center (MATEC) at the University of Cincinnati was recently awarded a partnership contract with the Ohio Department of Health (ODH). Both the MATEC grant and the ODH partnership contract allow us to educate health care providers on HIV/AIDS and expand to community education for people living with HIV/AIDS. MATEC at the University of Cincinnati serves half of Ohio.

Key personnel: Mary Beth Donica; Ashley Clonchmore

✓ *Yes, I am interested in taking on student research assistants.*

<http://www.matec.info/>

Keywords:

- HIV
- MATEC
- AIDS Education and Training Center

Stephen Kralovic, MD, MPH

Professor of Clinical Medicine
Division of Infectious Diseases



I evaluate infection prevention and control programs in such contexts as the national sustained reduction in healthcare-associated methicillin-resistant *Staphylococcus aureus* (MRSA) infections 10+ years into the Prevention Initiative, *Clostridium difficile* (C diff) Prevention and Carbapenem-Resistant Enterobacteriaceae Initiatives, implementation of healthcare-associated *Legionella* Prevention, and VHA Antimicrobial Stewardship Programs.

✓ *Yes, I am interested in taking on student research assistants.*

<http://med.uc.edu/intmed/divisions/infectious-diseases/infectious-diseases-directory/faculty-directory/Index/Pubs/kralovsm/>

Keywords:

- *Clostridium difficile*
- *Staphylococcus aureus*
- MRSA
- Infection prevention
- VHA
- Veterans Health Administration



Keith Luckett, MD

Assistant Professor of Clinical Medicine
Division of Infectious Diseases

My research focuses on infections in solid organ transplant recipients, specifically cytomegalovirus and hepatitis C. My research is a collaboration with the Departments of Nephrology and Transplant Surgery, aided by Drs. Thakar, Woodle and Shah. I currently also serve as the Associate Program Director for Internal Medicine Residency as well as the Medical Director of Infectious Diseases in Solid Organ Transplant.

Keywords:

- **Cytomegalovirus**
- **Hepatitis C**
- **Solid organ transplant**
- **Transplant patients**

Collaborators: Charuhas Thakar, MD; Steve Woodle, MD; Shimul Shah, MD

✓ *Yes, I am interested in taking on student research assistants.*

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Rajat Madan, MD, PhD

Assistant Professor of Clinical Medicine
Division of Infectious Diseases

We have recently made two important discoveries related to C. difficile infections (CDI): (i) Macrophage migration inhibition factor (MIF) exaggerates colonic inflammation, neutrophil recruitment and CDI mortality (*Anaerobe*, Jun 2018), (ii) A common genetic mutation in humans and commensal gut bacteria regulate CDI-induced neutrophil responses (*Mucosal Immunology*, Jan 2018). I am looking for students to participate in these exciting projects.

Keywords:

- **C. difficile**
- **Neutrophils**
- **Microbiome**
- **Host genetics**
- **Leptin-leptin receptor**
- **MIF**

Key personnel: Shinsmon Jose (Post-doctoral fellow), Anindita Mukherjee (Research Assistant)

Collaborators: Charles Caldwell, PhD; Senad Divanovic, PhD; David Haslam, MD; Bruce Yacyshyn, MD; Mary Beth Yacyshyn, PhD

Mentees: Olivia Horrigan (Student, UC Medical Sciences Program)

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/directory/entire-directory/Index/Pubs/madanrt/>; <https://www.cincinnatichildrens.org/bio/m/rajat-madan>

Jaime Robertson, MD

Associate Professor of Clinical Medicine
Division of Infectious Diseases



I have been the site principal investigator for two AIDS Clinical Trials Group studies and I am currently on the protocol development team for A5298, a Randomized, Double-Blinded, Placebo-Controlled, Phase III Trial of the Quadrivalent Human Papillomavirus (HPV) Vaccine to Prevent Anal HPV in HIV-Infected Men.

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/directory/entire-directory/Index/Pubs/roberj5/>

Keywords:

- HIV
- HPV
- Antiretroviral therapy
- Anal dysplasia

George Smulian, MD

Division Director; Ward E. Bullock Professor of Medicine;
Chief, Infectious Disease
Division of Infectious Diseases



My clinical research program focuses on novel antibiotic use particularly with respect to management of Staphylococcal infections. We currently have two investigator-initiated clinical trials: one examining a novel agent for perioperative surgical prophylaxis for high risk surgical procedures such as joint replacement and cardiac surgery with sternotomy and a second addressing antibiotic needs in individuals with opioid use disorder.

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/divisions/infectious-diseases/infectious-diseases-directory/entire-directory/Index/Pubs/smuliaag/>

Keywords:

- Fungal pathogens
- Pneumocystis carinii
- Histoplasma capsulatum
- Staphylococcal infections
- Antibiotic use
- Opioid use disorder



Kavitha Subramanian Vignesh, PhD

Assistant Professor
Division of Infectious Disease

My laboratory investigates the role of metal binding proteins in inflammatory processes. We have embarked upon interesting roles for metallothioneins and zinc in controlling fundamental macrophage functions such as inflammasome activation and metabolism. Funding from the NIH as well as the department's Junior Pilot Award supports this work.

Keywords:

- Zinc
- Metallothioneins
- Macrophages

Key personnel: Debabrata Chowdhury, PhD

Collaborators: Julio A. Landero, PhD (UC Chemistry); George S. Deepe, MD (Internal Medicine); Alexey Porollo, PhD (CCHMC); Jason Gardner, PhD (Internal Medicine)

Mentees: Debabrata Chowdhury, PhD

✓ *Yes, I am interested in taking on student research assistants.*

PUBLICATIONS July 1, 2017 thru June 30, 2018

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DISCOVER & INNOVATE*Infectious Diseases***PUBLICATIONS** CONTINUED

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Division of

Nephrology, Kidney CARE Program

The Division of Nephrology, Kidney CARE (Clinical Advancement, Research and Education) Program is dedicated to the advancement of research in basic and applied translational research, clinical outcomes and implementation research, and clinical trials. Additionally, the focus on quality improvement and patient safety spans across all of our practice locations.



Charuhas Thakar, MD
DIVISION DIRECTOR

Research Focus Areas/Types:

Currently, basic and translational research projects include:

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

Our expanding clinical outcomes research program include:

- Acute kidney injury
- Chronic kidney disease
- Dialysis
- 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. There are over 15 active clinical trials in a variety of disease areas including polycystic kidney disease, diabetic kidney disease, anemia in kidney disease, and kidney transplantation. 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*, among others.

Funding types:

- National Institutes of Health
- United States Department of Veteran Affairs
- Department of Defense and FDA
- UC College of Medicine and Department of Internal Medicine
- Industry and public-private partnerships and philanthropy

Mentoring:

Realizing the importance of quality improvement research in the future of clinical medicine, the Division co-directs a program at the VA to develop and train a fellow in Quality and Safety. This is a year-long training which focuses on developing QI projects, and teaches residents and students about systematic methods of incorporating quality improvement methodology within the fabric of clinical practice.

Collaborations:

The Division has enhanced our program through collaborations with pharmacy and nursing services to conduct implementation research in the areas of medication adherence and patient compliance. Moving forward, we will continue to grow our outcomes research program, basic science program, and clinical translational research through strategic recruitment to develop research programs in the areas of AKI, CKD, and ESRD/Transplantation.

Changing the Game

Women's health and open access digital learning for physicians are passions of Silvi Shah, MD

Silvi Shah, MD, assistant professor in the Division of Nephrology Kidney CARE Program, is thrilled and motivated by the potential direct impact of her research.

"You ask a question and find an answer. That's what makes being a researcher very challenging and gratifying," Shah says. "You can make a difference in this world of evidence-based medicine."

In particular, Shah is concerned with women's health and disparities in patients with kidney disease. Women who are

on dialysis have a lower incidence of permanent vascular access than men do, and dialysis patients need vascular access to receive treatment. "We want them to have permanent access, which is called an arterial venous access," Shah says. "But first we need to find the real reason behind the persistent disparity in access between men and women with end stage renal disease."

Shah is also interested in pregnancy outcomes among women who have had kidney transplants. "We are looking at

pregnancy rates and predictors in this population of women," Shah says. "We can have a significant impact on women's health if we can identify the problems because we can then find ways to address them."

Shah says she has received ample support from her mentors, colleagues and is a member of J-Club, a Department of Internal Medicine program that fosters the development of junior faculty interested in a research career. She is also associate program director of the Nephrology Social Media Collective Internship, a global initiative that provides knowledge, and experience to individuals willing to become creators of free open access medical education.

"It's a digital mentorship and a worldwide collaboration," Shah says. "It's very innovative and important for this next generation of physicians." •



"You can make a difference in this world of evidence-based medicine."

Silvi Shah, MD

**“You ask a question
and find an answer.
That’s what makes
being a researcher
very challenging
and gratifying.”**

Silvi Shah, MD



DISCOVER & INNOVATE

Nephrology, Kidney CARE Program



Bassam G. Abu Jawdeh, MD, FASN

Associate Professor of Clinical Medicine
Division of Nephrology, Kidney CARE Program

I have been awarded a grant to study complement-split products as biomarkers in antibody-mediated rejection of kidney allografts—a project I am collaborating on with Cincinnati Children's. I am preparing to co-direct a clinic specialized in glomerular diseases in both native as well as allograft kidneys.

Keywords:

- **Contrast-induced nephropathy**
- **Glomerular diseases**
- **Kidney allograft**

✓ *Yes, I am interested in taking on student research assistants.*

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Rita R. Alloway, PharmD

Research Professor of Medicine
Division of Nephrology, Kidney CARE Program

Our transplant clinical research team develops novel immunosuppressive regimens to address unmet medical needs such as 1) Plasma cell targeted therapies; 2) Novel immunosuppressive regimens to minimize toxicity; 3) Personalized immunosuppressant dosing. 2017-18 highlights publication of the U01 results of tacrolimus generics and results of the BEST trial (simultaneous CNI/steroid withdrawal)

Keywords:

- **Transplant**
- **Immuno-suppression**
- **Pharmacokinetics**

Key personnel: Tonya Dorst, RN; Amanda Naciff-Stahl, BS; Alex Patterson, BS
Collaborators: Steve Woodle, MD; David Hildeman, PhD; Uwe Christians, MD, PhD; Sandeer Vinks, PharmD, PhD; Tiffany Kaiser, PharmD; Nicole Ejaz, PharmD; Adele Shields, PharmD; Simon Tremblay, PharmD, MSc
Mentees: Kaitlyn Zheng, PharmD; Nicole Wilson, PharmD

✓ *Yes, I am interested in taking on student research assistants.*

Hassane Amlal, PhD

Research Associate Professor
Division of Nephrology, Kidney CARE Program



Our research projects are: 1) Regulation of phosphate balance by estrogen and its analogues; 2) Role of ammoniogenesis in the early development of renal hypertrophy; and 3) Adenine is a new signaling molecule involved in the regulation of fluid balance by the kidney. We are revising a paper for publication; we submitted 1 R01 grant to NIH, a PTRF grant to DCI, and three abstracts to the annual Nephrology meeting. Collaborators and students are welcome.

Key personnel: Perwez Alam and Sihame Amlal

Collaborators: Drs. Thakar, McCormack, Kao, Norman, Ahmed

Mentees: Perwez Amlal, PhD (Post Doctoral fellow) and Sihame Amlal (UC Pre-Med student)

✓ *Yes, I am interested in taking on student research assistants.*

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Keywords:

- Phosphate metabolism
- Diabetic nephropathy
- Adenine-induced renal injury

Manish Anand, MD

Assistant Professor
Division of Nephrology, Kidney CARE Program



I am directing a glomerular disease clinic; data from the patients will be collected to define cases of recurrent or de novo GN. I am involved as a co-investigator in kidney transplant trials at UC Medical Center.

Collaborators: Bassam Abu Jawdeh, MD

✓ *Yes, I am interested in taking on student research assistants.*

Keywords:

- Complex living donor
- Glomerular diseases
- Kidney transplantation

Begoña Campos-Naciff, PhD

Research Scientist
Division of Nephrology, Kidney CARE Program



Research interests include: Microvesicles as markers of kidney injury and progression of chronic kidney disease; Role of the kidney in preeclampsia; Identification of mechanism of crosstalk between the kidney and other organs.

Collaborators: Charuhas Thakar, MD; Kyle Walsh, MD; Silvi Shah, MD; Tony Leonard, PhD

✓ *Yes, I am interested in taking on student research assistants.*

Keywords:

- Kidney injury
- Preeclampsia
- Microvesicles
- Biomarkers



Laura Conforti, PhD

Professor
Division of Nephrology, Kidney CARE Program

My laboratory studies 1) the role of the tumor microenvironment in the failure of immune surveillance in cancer, 2) the mechanisms of resistance to immunotherapy (pembrolizumab) in head and neck cancer patients and 3) nanoparticle-based immune therapies for the treatment of lupus nephritis utilizing humanized mouse models of the disease. This research is supported by a R01, a DoD and a Paul Teschan Research grant.

Keywords:

- Ion channels
- T lymphocyte function
- Ca2+ signaling
- Cancer
- Tumor micro-environment
- SLE

Key personnel: Ameet Chimote, PhD; Vaibhav Gawali, PhD; Martina Chirra
Collaborators: Trisha Wise-Draper, MD, PhD; Edith Janssen, PhD; Marat Khodoun, DVM, PhD; Shahsi Kant, MD; Heather Duncan, PhD; Scott Langevin, PhD
Mentees: Hannah Newton, Farhan Ilyas, Erick Matis

✓ *Yes, I am interested in taking on student research assistants.*

<http://med2.uc.edu/conforti/>



Heather J. Duncan, PhD

Field Service Professor
Division of Nephrology, Kidney CARE Program

We manage sponsored clinical trials as well as investigator-initiated basic research in patients with chronic kidney disease. We are always looking for new physician-investigators.

Keywords:

- Anemia
- Secondary hyper-parathyroidism
- Hyperphosphatemia
- Dialysis

Key personnel: Karen Case, CCRP
Collaborators: Shashi Kant, MD; Suresh Kamath, MD; Charuhas Thakar, MD; Bassam Abu Jawdeh, MD; Manish Anand, MD

<http://www.med.uc.edu/intmed/divisions/nephrology-and-hypertension/nephrology-directory/faculty-directory>

Amit Govil, MD, FAST

Professor of Clinical Medicine
Division of Nephrology, Kidney CARE Program



I have been a co-investigator in almost all kidney transplant related studies at UC. I have specific interest in antibody mediated injury in transplant recipients—treatment/outcomes, cardiovascular disease and outcomes in kidney/pancreas transplant and kidney donors; transplant failure and transition to dialysis. I am actively involved in immunosuppression and outcomes in ocular surface cell transplant. I am looking into the mechanics and impact of tele-nephrology in rural America and care delivery models of tele-medicine in the field of kidney transplant. I am Chief of Transplant Section; Medical Director of Kidney and Kidney-Pancreas Transplant Programs and Director of the Transplant Fellowship Program.

Collaborators: Charuhas Thakar, MD; Rita Alloway, PharmD; Steve Woodle, MD; Edward Holland, MD; Myron Gerson, MD

Mentees: Masaki Yamada, MD; Natalia Sakhovskaya, MD

✓ *Yes, I am interested in taking on student research assistants.*

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Keywords:

- **Antibody mediated rejection in transplant**
- **Kidney and pancreas transplant**
- **Telemedicine**
- **Telenephrology**
- **Transplant failure outcomes**
- **Living kidney donor outcomes**
- **Ocular surface (corneal) stem cell transplant**
- **Dual organ transplant outcomes**

Silvi Shah, MD, MS

Assistant Professor of Clinical Medicine
Division of Nephrology, Kidney CARE Program



I am a clinical investigator with expertise in clinical outcome research. My research interests focus on disparities in kidney disease, women's health in kidney disease including pregnancy and innovative education tools in nephrology.

Key personnel: Anthony C. Leonard, PhD

Collaborators: Tiffany Grant, PhD

Mentors: Charuhas Thakar, MD; Masaaki Yamada, MD

✓ *Yes, I am interested in taking on student research assistants.*

<https://researchdirectory.uc.edu/p/shah2sv>

Keywords:

- **Health disparities**
- **Women's health**
- **Kidney disease**
- **Innovative education tools**

DISCOVER & INNOVATE

Nephrology, Kidney CARE Program



Manoocher Soleimani, MD

James Heady Professor of Medicine
Associate Chair for Research, Department of Medicine
Division of Nephrology, Kidney CARE Program

We have continued with our research projects aimed at the identification and characterization of acid base and electrolyte transporters in the kidney. We have identified a novel target for diuretic therapy that may provide strong remedy for the treatment of systemic hypertension or fluid overloaded states (published in *Frontiers in Physiology*, July 2018). We have also identified new pathways that are critical to kidney cyst formation and expansion in tuberous sclerosis. We have published more than 16 manuscripts on the above topics over the past two years.

Key words:

- Kidney tubules
- Hypertension
- Acid base disorders
- Tuberous Sclerosis
- Kidney cysts

Key personnel: Sharon Barone Kamyar Zahedi Marybeth Brooks
Collaborators: Robert Rapoport, PhD; Jane Yu, PhD; Jack Rubinstein, MD; Gary Shull, PhD



Ajay Srivastava, MD

Associate Professor of Clinical Medicine
Director, Nephrology Fellowship Program
Division of Nephrology, Kidney CARE Program

Most recently, I published papers/chapters on Cardiorenal Syndrome, IV Fluid therapy in the critically ill and “kidney safe” options, fluid and electrolyte balance, and CKD. My research interests include dialysis vascular access/interventional nephrology, trainee education, cardiovascular disease in CKD, and critical care nephrology.

Keywords:

- Interventional nephrology
- Cardiovascular disease & CKD

<https://med.uc.edu/intmed/divisions/nephrology-and-hypertension/fellowship-programs/nephrology>

Additional keywords: **Critical care nephrology**



Charuhas V. Thakar, MD

Professor of Medicine; Division Director
Division of Nephrology, Kidney CARE Program

New projects: biological markers to phenotype acute kidney injury; clinical outcomes research using national EHR registries. Accomplishments: five peer-reviewed publications including *Annals of Internal Medicine*; invited on review panel of Million Veterans Program.

Keywords:

- Acute kidney injury
- Chronic kidney disease
- Quality improvement
- Patient safety

Key personnel: Begoña Campos-Naciff, PhD; Samantha Kramer, Kathleen Harrison, Karthik Meganathan, MS; Annette Christianson
Collaborators: Anthony Leonard, PhD
Mentees: Masaaki Yamada, MD; Nicole Boschuetz, MD

✓ Yes, I am interested in taking on student research assistants.

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PUBLICATIONS July 1, 2017 thru June 30, 2018

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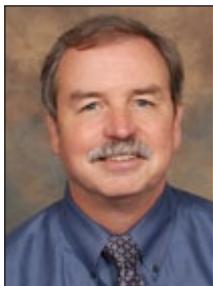
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Division of

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, all studies have a human clinic trial on the horizon, at least conceptually.

Current projects focus on:

- Innate and adaptive immunology of smoking
- Innate and adaptive immunology of 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
- Lymphangioloeymyomatosis
- Pulmonary alveolar microlithiasis
- Pulmonary alveolar proteinosis
- Hermansky Pudlak Syndrome
- Neutrophil NETs in Cystic Fibrosis
- Process and Quality Improvement in the MICU, consult, Cystic Fibrosis and ambulatory services.

Clinical research focus is on:

- Investigator initiated, multicenter, national and international randomized trials for lymphangioloeymyomatosis
- Investigator initiated phase II NIH combination therapy trial for lymphangioloeymyomatosis
- Pharmaceutical trials in pulmonary arterial hypertension, COPD, asthma and interstitial lung disease
- Therapeutic Development Network and pharmaceutical trials in cystic fibrosis
- Phase I NIH trials of phosphate restriction and therapeutic EGTA lavage for pulmonary alveolar microlithiasis
- Investigator initiated phase I-II trials of BRAF inhibitors for

pulmonary Langerhans cell histiocytosis

- mTOR inhibitor prophylaxis and therapy for influenza
- Safety and yield of cutting edge interventional and advanced diagnostic pulmonary procedures
- Investigator initiated and pharmaceutical trials in COPD
- NIH federal network and pharmaceutical trials in critical care medicine
- Investigator initiated home spirometry trials

Investigators/Trainees:

We currently have 12 faculty investigators, one K08 fellow, and two Rare Lung Disease Fellows.

Funding types:

- National Institutes of Health and other federal agencies—VA, NCATS, FDA, DOD
- Heart and lung societies, ALA, AHA, ATS
- Patient advocacy foundations

Mentoring:

We are 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 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.

Leaving Her Mark

Targeting research to patient impact brought Elizabeth Kopras, BA, to rare lung disease field

Elizabeth Kopras, BA, joined UC in 1992, and conducted bench research in molecular cardiology, digestive diseases and environmental health—work that could provide insight into diseases. But when her best friend died of a heart attack in 2013, Kopras decided that she wanted to focus on research that could be quickly translated to treatments, and help patients sooner.

“I was focused on the behaviors of single proteins or epigenetic alterations to DNA, but the research results wouldn’t impact health outcomes anytime soon. I really wanted to do something that would have a direct impact on people,” says Kopras, a senior research associate

who is also a PhD candidate in epidemiology.

Sandra Degen, PhD, then vice president of research at UC, told Kopras to connect with Frank McCormack, MD, professor of medicine and director of the Division of Pulmonary, Critical Care and Sleep Medicine. At the time, McCormack was working on creating therapies that targeted molecular defects in patients with rare lung diseases, increasing patient lifespans and improving outcomes. He is co-director of the Rare Lung Diseases Consortium and holds the only NIH funding to study Pulmonary Alveolar Microlithiasis, called PAM for short.

“The defects involved in very rare lung diseases, like PAM, are so

specific that we are learning a lot about how the lungs actually work,” Kopras says. “What we’re learning mechanistically might transfer to more common diseases, like chronic obstructive pulmonary disease or fibrosis. We are also the only scientific advocates for people who have this rare disease.”

Recently, McCormack received a NIH R01 grant to study influenza, which, along with pneumonia, remains one of the top 10 causes of death in the United States.

And Kopras—whose first research project at age 5 involved testing whether sidewalk ants preferred sugar or artificial sweetener—definitely feels that her and her colleagues’ current work is having the sort of impact on people’s lives that she hoped for.

“I work with amazing people here,” Kopras says. “Everyone wants to do great research. They want to do great science, and they want to help people.” ●



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**"I work with
amazing people
here. They want to
do great science,
and they want to
help people."**

Elizabeth Kopras, BA



Alejandro Adolfo Aragaki-Nakahodo, MD

Assistant Professor of Clinical Medicine,
Associate Program Director, Interventional Pulmonary Fellowship
Division of Pulmonary, Critical Care and Sleep Medicine

Key personnel: Danielle Caudell-Stamper, NP
Collaborators: Sadia Benzaquen, MD; Julian Guitron, MD
Mentees: Arjan Flora, MD

[http://med.uc.edu/intmed/divisions/pulmonary/directory/faculty-directory/Index/P Pubs/aragakao/](http://med.uc.edu/intmed/divisions/pulmonary/directory/faculty-directory/Index/P%20Pubs/aragakao/)

Keywords:

- **Interventional pulmonary**
- **Mentoring**



Sadia Benzaquen, MD, FACP, FACC

Associate Professor of Clinical Medicine
Director of Interventional Pulmonology Fellowship
Division of Pulmonary, Critical Care and Sleep Medicine

We are the sixth strongest program in the United States. We are currently involved in multiple clinical trials in interventional pulmonology. We are so busy with our trials that we are looking for a student research assistant who can help us to publish findings from all the trials we are currently providing. I am also the Director of Interventional Pulmonology.

Keywords:

- **Interventional pulmonology**

Key personnel: Alejandro Aragaki, MD; Chris Radchenko, MD; Danielle Caudell, NP; Dawn Harden, RN; Beth Hotel, IP scheduler
Collaborators: Thoracic surgery and ENT
Mentees: Zulma Swank, MD; Hagner Miles, MD

✓ *Yes, I am interested in taking on student research assistants.*

www.uhealth.com



Michael Borchers, PhD

Associate Professor
Division of Pulmonary, Critical Care and Sleep Medicine

We recently received grants from the LAM Foundation and the NHLBI to study NK cells in LAM. We have also developed the first mouse model of PLCH that will be used to study the underlying pathogenesis of the disease and test potential clinical treatments. We are currently looking for PhD students and post-docs.

Keywords:

- **COPD**
- **NK cells**
- **Lymphangioleiomyomatosis (LAM)**
- **PLCH**

Key personnel: Andrew Osterburg, PhD; Jennifer Flury, RVT, BS
Collaborators: Frank McCormack, MD; Ralph Panos, MD; Kathryn Wikenheiser-Brokamp, MD, PhD
Mentees: Huan Liu, MD

✓ *Yes, I am interested in taking on student research assistants.*

<https://www.med.uc.edu/intmed/divisions/pulmonary/directory/faculty-directory/Index/Pubs/borchemt/>

Jean M. Elwing, MD, FCCP

Professor of Clinical Medicine
Division of Pulmonary, Critical Care and Sleep Medicine



The UC Pulmonary Hypertension Program has been actively involved in numerous clinical trials over the past several years. We have participated in registries as well as phase 2, 3 and 4 therapy trials. In providing opportunities for our patients to be involved in clinical research and access cutting edge therapies, we hope to advance the care of all patients affected by pulmonary vascular diseases. I am also Director of the Pulmonary Hypertension Program.

Key personnel: Tammy Roads, Research Manager; Emilee Orr, RN Research Coordinator

Mentees: Arun Jose, MD, IMSTAR Fellow, Pulmonary Vascular Disease
<https://med.uc.edu/intmed/labs/elwing-lab>

Keywords:

- Pulmonary hypertension
- Pulmonary vascular disease
- Chronic thromboembolic pulmonary hypertension
- Pulmonary embolism

Jason C. Gardner, PhD

Research Assistant Professor
Division of Pulmonary, Critical Care and Sleep Medicine



Our lab studies the development of anemia and susceptibility to pneumonia in the critically ill. In 2018, we were awarded a grant from Shriners Hospitals for Children to determine the role of IGF-1 receptor signaling in the development of anemia following burn injury. We actively seek new collaborations and involvement of trainees in our work. Trainees will learn basic microbiology techniques, molecular methods, flow cytometry and other skills.

Key personnel: John G. Noel, Research Specialist III; Lori B. Pitstick, Senior Research Assistant

Collaborators: Frank McCormack, MD; Jose Cancelas, MD, PhD

✓ Yes, I am interested in taking on student research assistants.

<http://med.uc.edu/intmed/labs/gardner>

Keywords:

- Trauma
- Inflammation
- Anemia
- Pneumonia



Nishant Gupta, MD

Associate Professor
Division of Pulmonary, Critical Care and Sleep Medicine

Our site is the hub for the NIH-sponsored Rare Lung Disease Consortium (RLDC).

- Key personnel:** Elizabeth Kopras, BA
Collaborators: Frank McCormack, MD; Bruce Trapnell, MD; Michael Borchers, PhD; Jane Yu, PhD
Mentees: Abhishek Singla, Nik Wajda, Umair Khawar, Baha Obaidat

✓ *Yes, I am interested in taking on student research assistants.*

Additional keywords: **ILD; Rare lung diseases**

Keywords

- LAM
- BHD
- PLCH



Kristin Hudock, MD, MSTR

Assistant Professor of Medicine and Pediatrics
Division of Pulmonary, Critical Care and Sleep Medicine

We study innate immune response contributions to lung pathogenesis. Diseases include cystic fibrosis, acute respiratory distress syndrome, poikiloderma with neutropenia, and pneumonia. We combine basic and translational approaches to discover what regulates the balance between host defense and tissue injury. Primary human cells, induced pluripotent stem cells, murine models and patient samples are employed to understand disease mechanisms.

Keywords:

- Acute respiratory distress syndrome
- Sepsis
- Cystic fibrosis
- Neutrophil extra-cellular traps (NETs)
- NETosis

- Key personnel:** Margaret Collins, Michelle Imbrogno, Elizabeth Kopras, BA
Collaborators: JP Clancy, MD; Bruce Trapnell, MD; Jeffrey Whitsett, MD; Frank McCormack, MD; Scott Worthen, MD

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/labs/hudock-lab>



Veronica Indihar, MD

Associate Professor of Clinical Medicine
Division of Pulmonary, Critical Care and Sleep Medicine

My clinical research program focuses on cystic fibrosis, with an emphasis on clinical trials and patient centered outcomes. We are working on creating a non-CF bronchiectasis clinic with special attention to airway clearance support and clinical trials given paucity of specific therapies available for this population. Clinicians with an interest in this should contact me. I am also Co-Director of the Adult Cystic Fibrosis program.

Keywords:

- Cystic fibrosis
- Patient centered outcomes

- Collaborators:** Patricia Joseph, MD; Bruce Trapnell, MD; Lisa Burns, MD; Cheryl McCullumsmith, MD, PhD; Mark Eckman, MD

<https://med.uc.edu/intmed/directory/entire-directory/Index/Pubs/indihama>

Patricia M. Joseph, MD

Professor of Clinical Medicine
Division of Pulmonary, Critical Care and Sleep Medicine



I am Co-Director of the UC Adult CF Program. This program is actively involved in: 1) multiple QI programs; 2) shared decision making in CF, with evaluation of impact in adherence, outcomes and patient satisfaction with the process; 3) patient involvement in self-care, particularly in relation to adherence, exercise, and mental health; 4) the role of spirituality in coping with chronic disease, and 5) sponsored clinical trials in CF.

- Key personnel:** Elizabeth Kopras, BA, Senior Research Associate, Nicole Hummel, LPN
Collaborators: Mark Eckman, MD; Ana Hincapie, MS, PhD; Ashley Jenkins, MD; Adam CoCole, MD; Daniel Grossoehme, DMin
Mentees: Ruchira Sengupta, MD

✓ Yes, I am interested in taking on student research assistants.

<https://med.uc.edu/intmed/divisions/pulmonary/centers/cystic>

Keywords:

- Cystic fibrosis
- Shared decision making
- Quality improvement
- Clinical trials in CF

Peter H. Lenz, MD, MEd

Associate Professor of Clinical Medicine
Pulmonary and Critical Care Fellowship Director
Division of Pulmonary, Critical Care and Sleep Medicine



My academic investigations are focused around teaching physicians-in-training and creating appropriate programs and curricula to support aspiring clinician educators. The core components of my medical education mission are focused on audience engagement and promoting active teaching modalities. I am interested in developing effective strategies to design, implement, sustain, and assess teaching skills curricula for PCCM fellowships and have used qualitative research methods to inform these strategies.

Mentees: Fellows in clinical educator track

<https://med.uc.edu/intmed/education/residency/intmed-directory/Index/Pubs/len nzp>

Keywords:

- Medical education
- Active teaching
- Curriculum development



Frank McCormack, MD

Gordon and Helen Hughes Taylor Professor of Internal Medicine and Division Director
Division of Pulmonary, Critical Care and Sleep Medicine

We are broadly interested in translational research of rare lung diseases, which allows us to approach disease pathogenesis from the vantage point of a known molecular defect. Our goal is to develop new biomarkers and therapies with the potential to favorably impact human health in a short time frame. Our research has been inspired by patients we have met, which gives our work purpose and meaning, and motivates us to ask questions that matter.

Keywords:

- Rare lung diseases
- Influenza
- Lymphangioleiomyomatosis (LAM)

Key personnel: Tammy Roads, Nik Nikolaidis, Yasuaki Uehara, Yoshihiro Hasegawa, Huixing Wu, Lori Pitstick, Elizabeth Kopras

Collaborators: Bruce Trapnell, MD; Jane Yu, PhD; Michael Borchers, PhD; Jason Woods, PhD; Nishant Gupta, MD; Mark Eckman, MD; Jason Gardner, PhD; Satish Madala, PhD; Kathryn Wikenheiser-Brokamp, MD, PhD

Mentees: Yasuaki Uehara, Yoshihiro Hasegawa

✓ *Yes, I am interested in taking on student research assistants.*

<http://med.uc.edu/intmed/labs/mccormack-lab>



Dennis McGraw, MD

Associate Professor; Director, Research Bronchoscopy Core
Division of Division of Pulmonary, Critical Care and Sleep Medicine

The primary focus of my laboratory is to understand how G-protein-coupled receptors (GPCR) regulate airway smooth muscle tone, with particular emphasis on the role of b2-adrenergic receptor regulation/dysregulation in asthma. I serve as the Director of a Research Bronchoscopy Core that acquires lung samples (bronchoalveolar lavage, epithelial cell brushings, and endobronchial biopsies) from human subjects. I also serve as the Director of the Veterans Hospital Pulmonary.

Keywords:

- G-protein-coupled receptors
- b2-adrenergic receptor regulation
- Asthma

Collaborators: Frank McCormack, MD

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/divisions/pulmonary/directory/entire-directory/Index/Pubs/mcgrawd/>



Ralph Panos, MD

Professor
Division of Pulmonary Critical Care and Sleep Medicine

Our research has been focused on clinical, epidemiologic, microbiologic, and immunologic aspects of COPD with national and local collaborations ranging from novel COPD treatments to physiology of airflow limitation to NK cells and their role in COPD exacerbations. Another area of investigation is the TeleICU where we are evaluating the internet of things, artificial intelligence, and big data in the interface between technology and medicine. I am also Chief of Medicine at Cincinnati VAMC.

Keywords:

- COPD
- TeleICU

Key personnel: Laura Lach, Kimberly Kersey

Collaborators: Michael Borchers, PhD; Ahsan Zafar, MD; Daniel Hassett, PhD

✓ *Yes, I am interested in taking on student research assistants.*

Bruce C. Trapnell, MD

Professor

Division of Pulmonary, Critical Care and Sleep Medicine



Clinical Research on rare lung diseases including pulmonary alveolar proteinosis; cystic fibrosis; alpha-1 antitrypsin deficiency; lymphangioleiomyomatosis. Research projects include alveolar macrophage function; molecular techniques using gene knockout, transgenic and conditional gene expression mouse models and non-human primates; in vitro and in vivo viral gene transfer; and bone marrow transplantation. I am also Director of the Transitional Pulmonary Science Center, Cincinnati Children's Hospital Medical Center.

Key personnel: Brenna Carey, Paritha Arumugam, Claudia Chalk

Collaborators: Frank McCormack, MD; Jeffrey Whitsett, MD

Mentees: Cormac McCarthy, MD, PhD; Kristen Hudock, MD; Xinlun 'Joy' Tian, MD; William Zacharias, MD, PhD

✓ Yes, I am interested in taking on student research assistants.

<https://www.cincinnatichildrens.org/bio/t/bruce-trapnell>

Keywords:

- Rare lung diseases
- Alveolar macrophage function
- Gene transfer therapies

Virgil D. Wooten MD

Affiliate Professor of Internal Medicine

Division of Pulmonary, Critical Care and Sleep Medicine



Our newest project and biggest accomplishment is the Inspire treatment of OSA. In conjunction with the Department of Otolaryngology, our current research is targeted at evaluating the Inspire genioglossus stimulator's effectiveness in treating obstructive sleep apnea and the effects of electrical field alterations. We have been and are continuing program development to improve access, expand and diversify sleep medicine services to our veterans. There are many areas being considered for research and we welcome collaborative investigations.

Collaborators: Franklin Mesa, PhD; Benjamin D. Dickstein, PhD; Kathleen M. Chard, PhD

✓ Yes, I am interested in taking on student research assistants.

In particular, we would like psychologists and psychology post-docs to assist with cognitive-behavioral therapies for patients with claustrophobia and PTSD interfering with CPAP use.

<http://www.cincinnati.va.gov>

Keywords:

- Obstructive sleep apnea (OSA)
- Post traumatic stress disorder
- Cognitive processing therapy
- Veterans
- Sleep quality



Jane J. Yu, PhD

Associate Professor
Division of Pulmonary, Critical Care and Sleep Medicine

Yu Lab is currently funded by NIH/NHLBI, The LAM Foundation and The University of Pennsylvania to study molecular mechanisms responsible for LAM progression. We have published original findings in *Molecular Cancer Research* and collaborative studies in other biomedical journals. Yu Lab always seeks collaborators who bring exceptional expertise to our projects. Yu Lab always welcomes motivated young scientists to join team research.

Keywords:

- **LAM**
- **TSC**
- **Steroid hormone biology**
- **Signal transduction**
- **Cell metabolism**

Key personnel: Xiaolei Liu, PhD; Erik Y. Zhang, PhD
Collaborators: Frank McCormack, MD; Nishant Gupta, MD; Michael Borchers, PhD; Steve Potter, PhD; Mario Medvenovic, PhD; Shuk-Mei Ho, PhD; Manoocher Soleimani, MD

✓ *Yes, I am interested in taking on student research assistants.*



Muhammad Ahsan Zafar, MD, MS-CTR

Assistant Professor of Clinical Medicine
Division of Pulmonary, Critical Care and Sleep Medicine

I am involved in multi-disciplinary team projects to improve care-delivery and patient outcomes. Currents projects: Eliminating hospital-acquired infections in all ICUs of UC Health, reducing COPD readmissions/ revisits, reducing lab testing in MICU. We recently published about reducing COPD readmissions through system re-design approach. I also do clinical research in improving dyspnea in chronic lung diseases and on pulmonary rehabilitation.

Key Words:

- **Quality improvement**
- **Critical care**
- **COPD**
- **Pulmonary rehabilitation**

Collaborators: Ralph Panos, MD; Evaline Alessandrini, MD; Bradley Mathis, MD
Mentees: Malik Khan, Ruchira Sengupta, Matt Doers, Greg Wigger, Chris Jackson

✓ *Yes, I am interested in taking on student research assistants.*

<https://med.uc.edu/intmed/labs/zafar>

PUBLICATIONS July 1, 2017 thru June 30, 2018

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Mentor and Support

Modeling HIV in the Brain

The power of research motivates Mohammed Ali Rai, MD, PhD, toward uncharted science

While in medical school in Pakistan, Mohammed Ali Rai, MD, PhD, says that going beyond traditional texts and reading about cutting-edge research unraveled the “true meaning of medicine.” Spending days in the clinical wards, he relished his weekends and summer breaks in the research lab, publishing molecular and phylogenetic peer-reviewed publications about HIV and HPV.

“The true power of medicine, I soon realized, comes from the bench-to-bedside approach, where research is blended with perfection to clinical care,” Rai says.

Rai’s belief in the importance of research was only strengthened when he rotated through the Infectious Disease Service at the NIH Clinical Center and while getting his formal education in research as a DPhil student at the University of Oxford.

“For me, medicine has always been more than treating the patient’s ailment,” Rai says. “The disease might seem like a single entity, but in essence, it is an intricate web, with multiple facets and features. Without research, medicine cannot exist and progress.”

Rai has already seen the impact of his work—he was part of the research team that conducted

the initial studies about the spread of HIV in Pakistan. The team worked on two fronts: in the lab to clarify the molecular mechanisms and phylogenetics leading to the spread of HIV; and from the social perspective, writing articles for mainstream newspapers and being part of a UNAIDS conference to educate Pakistani parliamentarians. Currently, Rai is studying HIV infection of the brain. HIV causes neurocognitive decline in patients who are virologically suppressed, and the mechanisms behind this phenomenon remain a mystery.

“My immediate goal is to generate a model for HIV infection in the brain,” Rai says. “It is a daunting task but with an outstanding, world-class faculty and research environment, I think I should be able to make some productive inroads.” •



“The disease might seem like a single entity, but in essence, it is an intricate web, with multiple facets and features. Without research, medicine cannot exist and progress.”

Going Further for Patients

Yufei Dai, MD, wants to reduce diabetes risk for patients using statins

Fellow Yufei Dai, MD, was attracted to research for one reason: to become a better clinician.

“As a physician, it’s not uncommon to see a lot of patients with presentations, treatment responses and other things that cannot be totally explained by underlying mechanisms, to the best of our knowledge,” Dai says. “If I’m trained in research techniques, I can design the questions to be answered.”

Dai grew up in China and attended medical school there before coming to the United States for a residency at Howard University Hospital in Washington, D.C. Having decided to pursue endocrinology, Dai was attracted to the training and research opportunities offered at the University of Cincinnati. Dai became a fellow under the guidance of Shailendra Patel, MD, PhD, who is director of the Division of Endocrinology, Diabetes and Metabolism. Now, Dai is working with Patel to study the mechanism behind the increased diabetes risk associated with taking statins for high cholesterol.

“Statins are very important medications because studies show that they can reduce the mortality rate in patients with cardiovascular disease. But statins increase the risk of diabetes, which we don’t want to happen,” Dai says. “Our goal would be to prevent cardiovascular disease while also reducing the risk for diabetes.”

Dai will examine these questions via mouse models that he is working to develop with Patel. Dai spends his time with his family when he is not in the lab and is excited about the potential

to change patients’ lives with what he learns through his research.

“Research allows me to go one step further for patients,” Dai says. •

“It’s not uncommon to see patients with presentations that cannot be totally explained by underlying mechanisms. If I’m trained in research techniques, I can design the questions to be answered.”



Annual Research Symposium

The 2018 Seventh Annual DOIM Research Symposium was held on Friday, April 13, 2018 in the CARE/Crawley Atrium, with a theme of “Planning for the Future of Research, Discovery and Innovation.” This year’s symposium was held in collaboration with the University of Cincinnati’s Research + Innovation Week.

In addition to the Trainee Poster Competition and Trainee Grand Rounds (*see story on page 117*), a Medical Image Competition was added to the day’s events (*see story on page 118*).

Faculty support for the trainee poster competition was overwhelming, with 42 faculty volunteering to judge the 41 trainee posters. The keynote speaker gave a stimulating lecture titled “HPV and the epidemic of oropharyngeal cancer,” and led an interactive morning roundtable discussion.

“The Research Symposium is one of the venues provided on an annual basis to assist Internal Medicine in creating an environment that encourages, stimulates and promotes research and

researchers,” says Carl Fichtenbaum, MD, Associate Chair for Translational Research in the department and professor of infectious diseases. ●



The Symposium **Keynote Speaker** Maura Gillison, MD, PhD, Professor, Division of Cancer Medicine, University of Texas MD Anderson Cancer Center, Houston, during the interactive morning roundtable discussion.

Annual Research Symposium: Trainee Poster Competition

We recognize the efforts of the trainees and their mentors in putting together the excellent research poster presentations and thank the 42 faculty who served as judges. The faculty judges are integral to the success of this event. •



WINNING PRESENTATIONS:

Basic Research Awards:

- **First place** (\$500)
Hannah Newton, BS
Mentor: Laura Conforti, PhD,
Nephrology, Kidney CARE Program
"Selective Knockdown of A2AR in CD8+ T Cells Using CD8-targeting Nanoliposomes"
- **Second place** (\$250)
Sihame Amlal, UC Undergraduate
PreMed Student
Mentor: Hassane Amlal, PhD,
Nephrology, Kidney CARE Program
"The Development of Hyperglycemia Correlates with the Stimulation of Ammoniogenesis. An Early Contributing Factor to Renal Hypertrophy in Diabetes Mellitus"

Clinical Research Awards:

- **First place** (\$500)
Eejung Kim, MD, PhD
Mentor: Trisha Wise-Draper, MD,
PhD, Hematology Oncology
"Gene Expression Signature after One Dose of Neoadjuvant Pembrolizumab Associated with Tumor Response in Head and Neck Squamous Cell Carcinoma (HNSCC)"
- **Second place (tied)** (\$250)
Malik Khurram Khan, MD
Mentor: Frank McCormack, MD,
Pulmonary, Critical Care and Sleep
Medicine
"Reducing Lab Testing in Medical ICU through System Redesign using Improvement Science: Project SMART"
- **Second place (tied)** (\$250)
Masaaki Yamada, MD
Mentor: Silvi Shah, MD,
Nephrology, Kidney CARE Program
"Impact of Elderly Donor Obesity on Long-Term Outcomes in Renal Transplant Recipients"

Clinical Case Report Awards:

- **First place** (\$500)
Anis Rehman, MD
Mentor: Mercedes Falciglia, MD,
Endocrinology, Diabetes and
Metabolism
"Definitive Treatment of a Complicated Case of Amiodarone Induced Thyrotoxicosis"
- **Second place** (\$250)
Hala Mualla, MD
Mentor: Shailendra Patel, DPhil,
Endocrinology, Diabetes and
Metabolism
"A Case of Reversible Adrenal Suppression Induced by Fluconazole in an HIV Infected Patient"

Annual Research Symposium: Medical Image Competition and Gallery

In addition to the Trainee Poster competition and Trainee Grand Rounds, a Medical Image competition was added to the day's events to encourage interdepart-

mental collaboration and enlarge research perspectives. Forty five images from 10 different departments of the University were submitted. The panel of

judges selected 22 images for display in the gallery. One hundred fifty-seven ballots were cast in the People's Choice category. ●



Forty five images from 10 different departments of the University were submitted.



J-Club Alums Graduate with Grants—and Growing Careers

Program offers support to junior faculty pursuing research

As a young faculty member, Carl J. Fichtenbaum, MD, now a professor in the Division of Infectious Diseases, struggled to find his footing as a researcher.

“How do you learn the tricks of your trade? How do you become skilled at something?” Fichtenbaum says. “Typically you have a mentor, but often your mentors are pretty busy—so how do you get some additional help and training?”

Fichtenbaum, associate chair for translational research for the Department of Internal Medicine, eventually hit his stride but admits that young researchers today face different challenges.

“I wanted to be a researcher. I made lots of mistakes, like many people do, but the world is far more competitive now than it was

when I was a young faculty member,” Fichtenbaum says. “The chances of a new faculty member getting a research grant and getting a career off the ground are lower. We have fewer full-time faculty becoming researchers. I wanted to make sure we put something in place to help junior faculty realize their dreams.”

Enter J-Club, a Department of Internal Medicine initiative started by Fichtenbaum and Kevin Haworth, PhD, associate professor in the Division of Cardiovascular Health and Disease, in 2016. The mission of the J-Club is to provide a supportive academic, professional and personal environment

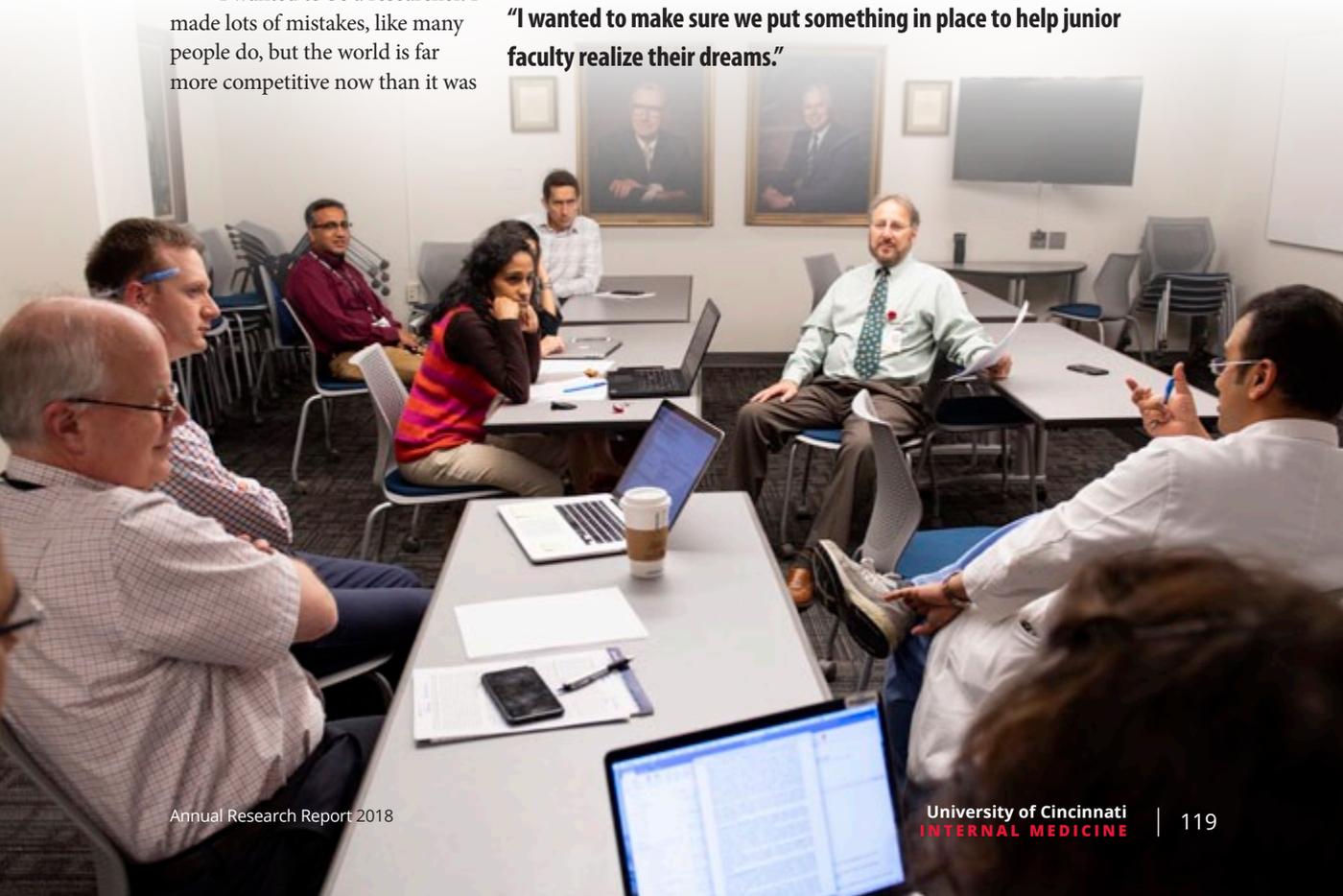
to foster the development of junior faculty interested in a research career.

The club provides opportunities to create a receptive environment for junior researchers to support one another and receive support from trusted senior faculty; offers a platform to present ideas, studies, results and grant submissions; and assists junior faculty in obtaining funding to further their careers. Eight junior faculty members are currently taking part in J-Club.

Fichtenbaum hopes to continue to grow J-Club in the

(continues next page)

“I wanted to make sure we put something in place to help junior faculty realize their dreams.”



MENTOR & SUPPORT

J-Club

(continued from previous page)

future, with every division in the department represented among its members—who can then pay it forward themselves.

“We are building the next generation of researchers,” says Fichtenbaum, “a cadre of people who are creating new knowledge and can then move on and encourage others.” ●

Left to Right: Rajat Madan, Michael Tranter, Diego Perez-Tilve, Deeptankar DeMazumder, Eric Smith, Silvi Shah, Khurram Bari, Kavitha Subramanian Vignesh, Ashley Jenkins, Carl Fichtenbaum



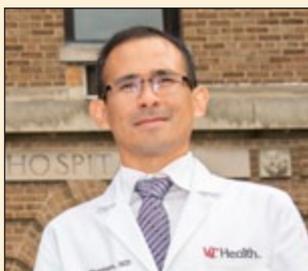
J-CLUB SUCCESS STORIES



Rajat Madan, MD, PhD, says J-Club was instrumental in helping him get funding for his research. “I had to present my project in a 10-minute talk to outside reviewers, and the feedback that I received from the J-Club members prior to presentation was very helpful,” says Madan, an assistant professor in the Division of Infectious Diseases. “I was successful in getting that grant.” Madan received an award for \$50,000 from the CCHMC Digestive Health Center and the Cincinnati Children’s Research Foundation.



Senu Apewokin, MD, another J-Club alumnus, agrees that having an outlet to work through the complexities of research and funding has helped him grow in his career. “The prospect of having a dozen minds formulating strategies to surmount the difficulties encountered in the execution of a research project will be of great appeal to any researcher,” says Apewokin, an assistant professor in the Division of Infectious Diseases. “The J-Club provided such a platform.” Apewokin was awarded the CT2 Research Scholar Career Development Award from the Center for Clinical & Translational Science and Training to study *Clostridium difficile*.



Moises Huaman, MD, says the support he has received from colleagues through J-Club, both junior and senior, has been invaluable. “We work well as group, and we are always happy to help and collaborate,” says Huaman, an assistant professor in the Division of Infectious Diseases. “We’re very interested, as a group, in meaningful and impactful research that might contribute to science and patient care.” Huaman has received the KL2 Research Scholar Career Development Award from the National Institutes of Health for his work on tuberculosis and cardiovascular disease. ●

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



Front (left to right): Christy Holland, Yolanda Wess, Suzanne Morris, Elizabeth Kopras, Hassane Amlal, Rajat Madan, Carl Fichtenbaum **Back** (l to r): Eric Smith, Diego Perez-Tilve, Peter Clayton, Sakthivel Sadayappan, Mark Eckman
Not pictured: Bassam Abu Jawdeh, Rita Alloway, Richard Becker, Vladimir Bogdanov, Melanie Cushion, Emily Dobbs, Alison Kastl, Marat Khodoun, Lisa Larkin, Dennis McGraw, Kelly Niederhausen, Gregory Rouan, Jack Rubinstein, Manoocher Soleimani, Daniel Schauer, Arnold Schwartz, George Smulian, Dylan Steen, Kavitha Subramanian Vignesh, Jason Winnick, Trisha Wise-Draper, Bruce Yacyshyn

Academic Research Services

Left to right:
Emily Dobbs, Eric Smith,
Yolanda Wess, Angela
Duke



Retrovirology Reference Laboratory

Left to right:
Josette Robinson-Eaton,
Molly Leibel, Joshua
Agee



Reports



REPORTS

Active Awards June 2018

Active Awards June 2018 Department of Internal Medicine

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
ADMIN	Baughman	1012755 / 1011957-VUMC 42525 1R01HL117074-03	7/1/17 - 6/30/18	\$ 111,840	\$ 111,840
ADMIN	Baughman	1011898 / Fdn for Sarcoidosis Res/FSR-CSN	4/1/15 - 8/31/18	\$ 90,000	\$ 30,000
CARD	Becker	1014066 / 1012566 / 1011829 / CCHMC xxxxxx Sub AHA 15SFRN241100000 SHIP AHOY Project	4/1/2015 - 3/31/19	\$ 449,658	\$ 174,592
CARD	Becker	1012562 / 1011862-DUKE sub 5U54HL112307 Project 2	5/1/16 - 4/30/19	\$ 184,728	\$ 61,576
CARD	Becker	1014073 / 1012488 / 1012247 - Duke sub 2R01 HL065222-14A1-Antithrombotic Aptamers and Antidotes	9/1/15 - 3/31/20	\$ 44,391	\$ 7,078
CARD	DeMazumder	1013213 / Autonomic Remodeling and Modulation Therapy in Heart Failure and Sudden Death	2/1/17 - 1/31/20	\$ 747,000	\$ 249,016
CARD	DeMazumder	1014069 / Critical Health Assessment & Outcomes Study/Score during sleep (CHAOS-sleep)	4/2/18 - 4/1/19	\$ 150,000	\$ 150,000
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 - 3/31/19	\$ 240,533	\$ 240,533
CARD	Haworth	1012816 / Ultrasound-mediated oxygen scavenging for inhibition of reperfusion injury	8/1/16 - 6/30/21	\$ 630,964	\$ 155,531
CARD	Holland	1011436/2R01NS047603-9- Ultrasound Assisted Thrombolysis	8/15/14 - 7/31/19	\$ 2,764,157	\$ 631,942
CARD	Holland	1012925 / NS047603-11S1-Mercado Diversity Supplement	8/1/16 - 7/31/19	\$ 172,514	\$ 86,257
CARD	Holland	1014086 / Echogenic Targeted Liposomes: Transfectin/Drug Delivery	4/15/17 - 3/31/21	\$ 1,420,596	\$ 285,512
CARD	Holland	1013888 / Chronic Thrombus ablation with histotripsy and thrombolytics	12/15/17 - 11/30/22	\$ 1,057,183	\$ 220,899
CARD	Lin	1014166 / Critical Health Assessment & Outcomes Study for predicting acute sleep-disordered breathing (CHAOS SBD)	4/2/18 - 4/1/19	\$ 75,000	\$ 75,000
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	\$ 52,216

* NOA Project Period Award Amount

† NOA Current Budget Period

CONTINUED

ACTIVE AWARDS JUNE 2017 CONTINUED

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
CARD	Owens	1011730/4R00HL116786-03	3/15/13 - 8/31/18	\$ 735,572	\$ 241,397
CARD	Owens	1014105 / R01 The role of protease activated receptor 2 in atherosclerosis	4/1/18 - 3/31/23	\$ 2,004,383	\$ 399,792
CARD	Rubinstein	1011578/R01ES024744 Puga	10/11/14 - 4/30/20	\$ 634,385	\$ 101,482
CARD	Rubinstein	1013966 / Endocrine Distruptors and Heart Heath (Wang)	2/1/18 - 1/31/23	\$ 148,906	\$ 29,853
CARD	Rubinstein	1013168 / TRPV2agonism for Improved Cardiac Function in Patients with Single Ventricle Physiology	1/1/17-12/31/18	\$ 125,400	\$ 77,000
CARD	Sadayappan	1012990 / Umass Sub R01 AR067279- Sketal myosin-binding protein C	8/15/16 - 6/30/18	\$ 16,337	\$ 16,338
CARD	Sadayappan	1013068 / Molecular mechanism of hypertrophic cardiomyopathy in populations of South Asians descendants	8/15/16 - 12/31/19	\$ 1,356,218	\$ 420,327
CARD	Sadayappan	1013101 / Cardiac Myosin Binding Protein-C: Structure and Function	12/1/16 - 2/28/20	\$ 1,513,006	\$ 404,073
CARD	Sadayappan	1013647 / T32 Jennifer Schwanekamp	7/3/17 - 7/2/18	\$ 47,484	\$ 47,484
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	Viswanathan	1013476 / Unfolded Protein Response and ER-Stress in Hypertrophic Cardiomyopathy	7/1/17 - 6/30/19	\$ 104,060	\$ 51,844
DIG	Bari	1012802 / A Pilot Study to Evaluate the Safety and Efficacy of Budesonide as an Alternative to Prednisone for Liver Transplant Immune Suppression	7/1/16 - 6/30/18	\$ 10,000	\$ 10,000
DIG	Blackard	1011103 / 1010456 - R01 GM105414	5/2/13 - 4/30/18	\$ 1,496,850	\$ 299,434
DIG	Sherman	1014220 / 3 R13AI071925-08S1	5/10/18 - 8/31/18	\$ 25,000	\$ 25,000
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	\$ 161,007
DIG	Sherman	1012450-HIV Antiretroviral Therapy and Hepatic Injury	2/15/16 - 1/31/21	\$ 1,849,870	\$ 500,044
DIG	Sherman	1012724/ The Prioritize study: PCORI	3/1/16 - 2/28/21	\$ 258,209	\$ 57,402

* NOA Project Period Award Amount
† NOA Current Budget Period

CONTINUED

REPORTS

Active Awards June 2018

ACTIVE AWARDS JUNE 2018 *CONTINUED*

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
DIG	Sherman	1013343/ Timing of Treatment for Chronic Hepatitis C Infection in Patients with End Stage Renal Disease Awaiting Trans	4/15/17 - 4/14/19	\$ 96,149	\$ 96,149
DIG	Sherman	1014082 / The Cost Effectiveness of Screening for Chronic Hepatitis C Infection in the United States: An Update for 2018	4/1/18 - 9/30/18	\$ 30,000	\$ 30,000
DIG	Yacyshyn	TBD /Study of a Prospective Adult Research Cohort with Inflammatory Bowel Disease (SPARC IBD)	3/1/18 - 2/28/20	\$ 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	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	\$ 419,321
ENDO	Cohen	1012554 / GWU GRADE sub R01DK104845	9/1/15 - 3/31/20	\$ 221,585	\$ 44,297
ENDO	Falciglia	1012315/1011348 - Falciglia Sub University of Virginia SHINE	8/1/14 - 7/31/18	\$ 8,000	\$ 2,000
ENDO	Perez-Tilve	1013151-Novo Nordisk	1/1/18 - 12/31/18	\$ 1,200,000	\$ 1,200,000
ENDO	Perez-Tilve	1013205 / CohBar agreement 2018	1/1/18 - 12/31/18	\$ 383,919	\$ 383,919
ENDO	Winnick	1013196 / Effect of liver glycogen content on hypoglycemic counterregulation	9/1/16 - 5/31/21	\$ 1,806,944	\$ 336,465
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	Schauer	1010970-Impact of Bariatric Surgery on Cancer Incidence Patients	3/1/14 - 2/28/19	\$ 1,998,718	\$ 629,199

* NOA Project Period Award Amount
 † NOA Current Budget Period

CONTINUED

ACTIVE AWARDS JUNE 2018 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	\$ 286,441
HEMONC	Bogdanov	1013415 / Disrupting tissue factor beta1 integrin axis in pancreatic cancer	7/1/17 - 6/30/19	\$ 300,000	\$ 150,000
HEMONC	Dong	1006682 - NSF sub	09/01/08 - 8/31/18	\$ 1,200,000	\$ 61,767
HEMONC	Elnakat	1013541 / Synergistic interactions of CC90009 with rapalogs in pancreatic neuroendocrin tumors	7/1/17 - 6/30/18	\$ 41,470	\$ 41,470
HEMONC	Morris	1011153 / SWOG Purchase Service Agreement	6/9/14 - 6/30/20	\$ 415,654	\$ 122,821
HEMONC	Palascak	1014197 / 1013325 / 1012909 / 1012312/ 1011659 / 1010330 / 1011222/ 1011659-HFM/CDC	6/1/18 - 5/31/19	\$ 15,000	\$ 15,000
HEMONC	Palascak	1014171 / 1012610 / 1011826 /1009394 / 1011157 / 1010442-HFM	6/1/18 - 5/31/19	\$ 71,817	\$ 71,817
HEMONC	Palascak	1013386 / 1012611 / 1011915 / 1011317-Cascade Home Svc	6/1/18 - 5/31/19	\$ 10,000	\$ 10,000
HEMONC	Palascak	1013387 / 1012612 / 1011917 / HFM Cascade Pilot Prog	6/1/18 - 5/31/19	\$ 70,000	\$ 70,000
HEMONC	Palascak	1013833 / CDC17-18-HTC434	9/30/17 - 9/29/18	\$ 19,300	\$ 19,300
HEMONC	Qi	1012136- Intravenous Enzyme Replacement Therapy for CNS Disorders	8/31/15 - 8/30/18	\$ 447,075	\$ 196,625
HEMONC	Qi	1013813 / Biotherapy of brain tumors by radioiodinated SapC- DOPS nanovesicles	9/18/17 - 12/17/18	\$ 91,990	\$ 91,990
HEMONC	Qi	1013922 / MTTI Inc. award	12/22/17 - 6/30/18	\$ 74,521	\$ 74,521
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 - 8/31/18	\$ 448,208	\$ 197,104
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	1013562 / CA160714P1: Ionic Mechanisms of Resistance to Immunotherapy in Head and Neck Cancer	7/1/17 - 6/30/20	\$ 533,631	\$ 173,922

* NOA Project Period Award Amount
† NOA Current Budget Period

CONTINUED

REPORTS

Active Awards June 2018

ACTIVE AWARDS JUNE 2018 *CONTINUED*

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
IMM	Bernstein, D	1012869 / 1012019/1005596/ 1010751/1011196-R01 OH 008795-04-06	9/1/06 - 8/31/18	\$ 1,642,007	\$ 360,717
IMM	Bernstein, D	1013569 / 1012740 / 1011860 / 1009656 / 1010499 / 1011351-T32 AI060515-09-11	9/1/04 -8/31/19	\$ 1,361,995	\$ 288,163
IMM	Bernstein, J	1014057 / Health Effects of CREON2000 in Asthmatic Children	8/1/17 - 7/31/18	\$ 18,486	\$ 18,486
IMM	Finkelman	1011228 - 1 R01 AI113162-01	7/15/14 - 6/30/18	\$ 1,334,589	\$ 332,784
IMM	Finkelman	1012921 / Administrative Supplement to 5R01AI113162	8/22/16 - 6/30/18	\$ 100,000	\$ 100,000
IMM	Finkelman	1013755 / 1013344 / IL-9 producing Mast Cell Precu- sors and Food Allergy	9/30/17 - 9/29/18	\$ 11,864	\$ 11,864
IMM	Finkelman	1013239 / Wimpy antibody isotypes protect against antibody-mediated disease	1/25/17 - 12/31/21	\$ 1,833,210	\$ 365,344
IMM	Finkelman	1013811/ R01 supplement	7/1/17 - 6/30/18	\$ 151,080	\$ 151,080
IMM	Ridgway	1013443 /1012836 / 1011903/1011320-UC Davis/ dnTGF Beta RII Mice and PBC-COMPETITIVE RENEWAL	8/11/14 - 6/30/18	\$ 916,511	\$ 228,411
IMM	Ridgway	1014172 / 1013504 / 1012808 / Mechanistic and Therapeutic Role of the CD137-CD137L	7/21/16 - 5/31/21	\$ 1,301,359	\$ 233,946
IMM	Shao	1013143 / A critical role of TAM receptors in autoimmune nephritis	9/1/16 - 11/30/18	\$ 218,710	\$ 129,319
IMM	Shao	1014144 / Kymera Project	4/16/18 - 8/21/18	\$ 13,977	\$ 13,977
INF	Cushion	1013710 / 1012856 / Development of a new system for scaled up culture and propagation of Pneumocystis- option 1	8/1/16 - 7/31/18	\$ 231,607	\$ 63,235
INF	Cushion	1012928 / SUNY 73370 Sub R01	8/1/16 - 11/30/20	\$ 99,815	\$ 58,951
INF	Cushion	1013655 / R13 International Workshop	8/8/17 - 7/31/18	\$ 5,000	\$ 5,000
INF	Cushion	1013660 / HHSN272201700034 / T1	7/14/17 - 7/13/24	\$ 3,500	\$ 3,500
INF	Cushion	1013710 / PRE-CLINICAL MODELS OF INFECTIOUS DISEASES: Task areaa: small animal models of infectious diseases- option 2	8/1/17 - 07/31/18	\$ 48,542	\$ 48,542
INF	Deepe	1011024 / 1010447 5R01AI106269-02	5/15/13-4/30/19	\$ 2,334,463	\$ 462,463
INF	Deepe	1012686-Dendritic cell KLF2/ Notch Axis and Th2 Responses to Eukaryotic Pathogens	6/10/16 - 5/31/21	\$ 2,292,933	\$ 496,000

* NOA Project Period Award Amount
† NOA Current Budget Period

CONTINUED

ACTIVE AWARDS JUNE 2018 CONTINUED

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
INF	Deepe	1013979 / HIF Regulation of Histoplasma Pathogenesis	2/15/18 - 1/31/23	\$ 2,002,500	\$ 400,000
INF	Fichtenbaum	1012968 / A Randomized Double-Blind, Phase 3 Study Comparing the Efficacy and Safety of High-Titer versus	10/1/17 - 9/30/18	\$ 18,600	\$ 18,600
INF	Fichtenbaum	1011786-MGH 225707 1U01HL023336-02 REPRIEVE A5332 and A5333	8/8/14 - 4/30/2021	\$ 627,150	\$ 150,000
INF	Fichtenbaum	1011846/1011413 Reprieve Site Selection Committee	8/8/14-4/30/2020	\$ 111,045	\$ 12,740
INF	Fichtenbaum	1011401 ACTG Protocol Funds for all "A" protocols	1/1/14-11/30/2020	\$ 1,721,971	\$ 267,649
INF	Fichtenbaum	1013121- BWH sub AI68636 Protocol Funds ACTG	12/1/14 - 11/30/2020	\$ 2,349,648	\$ 391,948
INF	Fichtenbaum	1013819-REPRIEVE Co-Chair	12/1/17 - 11/30/18	\$ 16,304	\$ 16,304
INF	Fichtenbaum	1013818-ACTG Scientific Agenda Steering Committee (SASC) Support	12/1/17 - 11/30/18	\$ 12,019	\$ 12,019
INF	Fichtenbaum	1014152 / 1012586 / Randomized trial to prevent vascular events in HIV (REPRIEVE)	5/1/16 - 4/30/20	\$ 50,444	\$ 12,740
INF	Fichtenbaum	1013130 / Effect of pitavastatin on kidney function in HIV-infected person REPRIEVE kidney study	7/1/16 - 6/30/18	\$ 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	1013520 / B&W R01 PREPARE	8/1/16 - 5/31/19	\$ 16,275	\$ 16,275
INF	Fichtenbaum	1013895 / HIV Cure	8/9/17 - 7/31/18	\$ 170,915	\$ 170,915
INF	Fichtenbaum	1013820 / ACTG Core Funds	12/1/17 - 11/30/18	\$ 374,060	\$ 374,060
INF	Kaul	1013632 / 1012677 / 1012148-MAETC 2015-2016	7/1/17 - 6/30/18	\$ 199,113	\$ 199,113
INF	Madan	1011574-7 K08 AI108801	8/1/14 - 7/31/19	\$ 704,232	\$ 176,058
INF	Robertson	1014030 / 1013322 / 1012460 / 1011782 / 1011016-CHN Ryan White 5H76HA0011-20-00	4/1/14 - 3/31/19	\$ 3,143,935	\$ 697,867
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

* NOA Project Period Award Amount
† NOA Current Budget Period

CONTINUED

REPORTS

Active Awards June 2018

ACTIVE AWARDS JUNE 2018 *CONTINUED*

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
NEP	Abu Jawdeh	1013450 / Investigating Comoliment-Split Products as Potential Biomarkers for Antibody-Medicated Rejection in Renal Allografts	4/1/17 - 3/31/19	\$ 25,000	\$ 25,000
NEP	Conforti	1011985 /2 R01CA095286-10	7/1/15 - 6/30/20	\$ 1,498,123	\$ 301,975
NEP	Conforti	1013840 /Targeted Nanoparticle-based therapy in SLE	2/1/18 - 1/31/19	\$ 60,000	\$ 60,000
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 - 11/30/18	\$ 25,000	\$ 25,000
NEP	Thakar	1313452 / Stability Study for NGAL	4/1/17-6/30/18	\$ 215,467	\$ 107,734
PULM	Borchers	1011007/R01 HL119538-01A1	4/1/14 - 3/31/19	\$ 1,581,563	\$ 395,000
PULM	Borchers	1013925 / LAM Foundation-Natural killer Cell Phenotype and Function in LAM	1/15/18 - 1/14/20	\$ 150,000	\$ 75,000
PULM	Gardner	1013898 / Erythropoietin resistant anemia induced by thermal injury	1/1/18 - 12/31/21	\$ 958,000	\$ 239,500
PULM	Gupta	1012848 / 1012472-Improving Intensive Care Patient Safety Through EHR-based Algorithms	9/1/15 - 8/31/19	\$ 110,332	\$ 25,285
PULM	Gupta	1013553 / Resveratrol and sirolimus in LAM Trial (RESULT)	7/1/17 - 6/30/20	\$ 712,443	\$ 250,025
PULM	Gupta	1013919 / LAM Foundation-Home Spirometry to Evaluate Disease Progression and Treatment in Response	1/15/18 - 1/14/19	\$ 50,000	\$ 50,000
PULM	Hudock	1013705 / The NET effect: Human CF epithelial responses to NETosis	7/1/17 - 6/30/22	\$ 846,560	\$ 169,312
PULM	Hudock	TBD / CLOVERS: Crystalloid Liberal or Vasopressors Early Resuscitation in Sepsis	11/1/17 - 4/30/20	\$ 179,708	\$ 37,833
PULM	Indihar	1013873 / 1013361 / 1012969 / A CF C3N Care Model of the Future: Proposal for Piloting a Learning Health System	7/1/16 - 12/31/18	\$ 62,030	\$ 17,030
PULM	Joseph	1013136 / 1012329 / 1011765 / CFF Transforming CF Care Through Shared Decision Making (QI)	1/1/15 - 12/31/18	\$ 276,488	\$ 92,434
PULM	McCormack	1011731 / 1R01HL127455-01	4/1/15 - 3/31/19	\$ 2,593,162	\$ 394,535
PULM	McCormack	1013638 / 1012804 / 1011990 / 1011548/HL127672 RLDC Admin Unit	9/18/14 - 7/31/19	\$ 216,656	\$ 40,605

* NOA Project Period Award Amount

† NOA Current Budget Period

CONTINUED

ACTIVE AWARDS JUNE 2018 CONTINUED

DIVISION	PI	AWARD	PROJECT PERIOD	AWARD AMOUNT *	CURRENT PERIOD †
PULM	McCormack	1013639 / 1012805 / 1011989/1011549/HL12762 RLDC Project 1	9/18/14 - 7/31/19	\$ 476,052	\$ 88,339
PULM	McCormack	1012874 / 1012055/1010758/ Baylor Subaward UH2TR00961	9/1/17 - 8/31/18	\$ 74,796	\$ 74,796
PULM	McCormack	1012851 / RLDC: Multicenter International durability and safety of sirolimus in LAM trial (MIDAS)	8/1/15 - 7/31/18	\$ 27,418	\$ 23,568
PULM	McCormack	1013475 /1013010 / Multi- center Interventional Lymphangioliomyomatosis Early Disease Trial (MILED)-CCC	9/20/16 - 8/31/21	\$ 3,606,817	\$ 798,272
PULM	McCormack	1012879 / CCHMC-Integrative analysis of multi-omics data to target fibroblast activation in IPF	7/5/16 - 6/30/18	\$ 38,371	\$ 19,409
PULM	McCormack	1013112 / The molecular and genetic pathogenesis of LAM	9/21/16 - 8/31/19	\$ 331,800	\$ 110,600
PULM	McCormack	1014131 / 1013505 / CCHMC-WT1 regulation of pymnary fibrosis	5/22/17 - 4/30/22	\$ 48,340	\$ 9,668
PULM	McCormack	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	\$ 506,717
PULM	McCormack	1013812 / 2017 LAM Foundation international Lymphangioliomatosis	11/1/17 - 10/31/18	\$ 25,000	\$ 25,000
PULM	McCormack	1014180 / Single Cell RNA Sequencing in LAM	6/1/18 - 5/31/20	\$ 80,000	\$ 40,000
PULM	Norton	1014142 / 1012550 / 1011868/ 1011505/CCLCM-CWRU/ U54HL123023-01 PETAL	6/17/14 - 4/30/21	\$ 181,231	\$ 29,299
PULM	Norton	1012421-Reevaluation of Systemic Early neuromuscular blockade (ROSE)	11/17/15 - 4/30/19	\$ 66,526	\$ 66,526
PULM	Norton	1013650 / PETAL Network: VIOLET - Vitamin D to improve outcomes by leveraging early treatment	2/1/17 - 4/30/19	\$ 13,410	\$ 13,410
PULM	Yu	1013175 / 1012306-Cornell 16050776 / R01 HL121266-03-	1/1/16- 12/31/18	\$ 98,350	\$ 33,433
PULM	Yu	1012103-7R01DK098331-02	7/1/15 - 6/30/18	\$ 510,340	\$ 289,140
PULM	Yu	1013642 / Targeting prosta- glandin biosynthesis and action in lymphangioliomyo- matosis	8/1/17 - 6/30/20	\$ 1,843,109	\$ 651,071

* NOA Project Period Award Amount
† NOA Current Budget Period

REPORTS

New Grants FY2018

New Grants FY 2018 Department of Internal Medicine

DIVISION	PI	TITLE	AGENCY	PROJECT PERIOD	DIRECT COST
CARD	DeMazumder, D	Critical Health Assessment & Outcomes Study/Score during sleep	AHA	4/2/18 - 4/1/19	\$ 136,363.00
CARD	Holland, C	Cronic thrombus ablation with histotripsy and thrombolytics	NIH/NHLBI R01HL133334	12/15/17 - 11/30/22	\$ 704,028.00
CARD	Kuman, M	Roles of myosin binding protein-C phosphorylation in cardiac	AHA	7/1/17 - 6/30/19	\$ 53,688.00
CARD	Lin, T	Critical Health Assessment & Outcomes Study/Score during sleep	AHA	4/2/18 - 4/1/19	\$ 136,363.00
CARD	McNamara, J	Cross-bridging the Gap: Using the N-terminus of Cardiac Myosin	AHA	7/1/17 - 6/30/19	\$ 106,532.00
CARD	Owens, A P	The role of protease-activated receptor 2 in atherosclerosis	NIH	5/1/18 - 3/31/13	\$ 1,250,000.00
CARD	Rubinstein, J	Endocrine Disruptors and Heart Health	R01 ES027855	2/1/18 - 1/31/23	\$ 93,358.00
CARD	Sadayappan, S	T32- Jennifer Schwanekamp	CCHMC	7/1/17 - 6/30/18	\$ 47,484.00
CARD	Viswanathan, S	Unfolded Protein Response and ER-Stress in Hypertrophic	AHA	7/1/17 - 6/30/19	\$ 104,060.00
DIG	Sherman, K	Viral Hepatitis Act	CDC	3/12/18 - 9/30/18	\$ 27,777.00
HEMONC	Bogdanov, V	Disrupting Tissue Factor-beta 1 intergrin axis in pancreatic cancer	Pancreatic Cancer Network	7/1/17 - 6/30/19	\$ 272,727.00
HEMONC	Elnakat, H	Synergistic interactions of CC90009 with rapalogs in pancreatic	Celgene Corporation	7/1/17 - 6/30/18	\$ 26,000.00
HEMONC	Qi, X	Biotherapy of brain tumors by radioiodinated SapC-DOPS nanoversicle	MTTI sub NIH	9/18/17 - 4/30/18	\$ 100,337.00
HEMONC	Qi, X	Biotherapy of brain tumors by radioiodinated SapC-DOPS nanoversicle	MTTI sub NIH	9/18/17 - 4/30/18	\$ 46,772.00
HEMONC	Wise-Draper, T	Ionic mechanisms of resistance to immunotherapy in head & neck	DoD	7/1/17 - 6/30/20	\$ 333,334.81
IMM	Shao, W	Kymera Therapeutics	Kymera Therapeutics	4/14/18 - 8/21/18	\$ 13,977.00
INF	Huaman, M	ACTG Minority HIV Investigator Mentoring Program	BWH - NIAID	7/1/17 - 11/30/17	\$ 40,430.00
INF	Cushion, M	HHSN272201700034I/T1	NIAID	7/14/17 - 7/13/24	\$ 3,500.00
INF	Cushion, M	International Workshop on Opportunistic Protists (IWOP-14)	NIAID	8/8/17 - 7/31/18	\$ 5,000.00
INF	Cushion, M	IDIQ Ccontact Kick-Off	NIAID	10/29/17 - 10/30/17	\$ 1,381.81
INF	Deepe, G	HIF Regulation of Histoplasma Pathogenesis	NIAID	2/15/18 - 1/31/23	\$ 1,250,000.00
INF	Smulian, G	EVADE	Duke sub NIH	12/1/17 - 11-30-19	\$ 82,282.99

NEW AWARDS FY 2018 CONTINUED

DIVISION	PI	TITLE	AGENCY	PROJECT PERIOD	DIRECT COST
NEP	Conforti, L	Ionic mechanisms of resistance to immunotherapy in head & neck	DoD	7/1/17 - 6/30/20	\$ 333,334.19
NEP	Conforti, L	Dialysis Clinic, Inc. - Reserve Funds	DCI - Project # C4012	12/1/17 - 11/30/18	\$ 25,000.00
NEP	Conforti, L	Dialysis Clinic, Inc. - Paul Teschan Research Fund	DCI	2/1/18 - 1/31/19	\$ 60,000.00
PULM	Borchers, M	Natural Killer Cell Phenotype and Function in LAM	LAM Foundation, Inc	1/15/18 - 1/14/20	\$ 150,000.00
PULM	Gardner, J	Erythropoietin resistant anemia induced by thermal injury	Shriner's	1/1/18 - 12/31/21	\$ 958,000.00
PULM	Gupta, N	Resveratrol and Sirolimus in LAM Trial (RESULT)	R34 - NHLBI	7/1/17 - 6/20/20	\$ 499,916.00
PULM	Gupta, N	Home Spirometry to Evaluate Disease Progression and Treatment in Response in Patients	LAM Foundation, Inc	1/15/18 - 1/14/19	\$ 50,000.00
PULM	Hudock, K	The NET effect: Human CF epithelial responses to NETosis	NIH/NHLBI K08HL124191	9/1/17 - 8/31/22	\$ 783,850.00
PULM	McCormack, F	Therapeutic Benefit of Hsp90 Inhibition in Pulmonary Fibrosis	CCHMC/DOD	9/30/17 - 8/31/20	\$ 82,899.77
PULM	McCormack, F	2017 LAM Foundation International Lymphangiomyomatosis Research	NHLBI	11/1/17 - 10/31/18	\$ 25,000.00
PULM	McCormack, F	Pulmonary Epithelial Dynamics and Innate Host Defense	NHLBI R01HL135122	12/7/17 - 11/30/21	\$ 1,275,316.00
PULM	McCormack, F	Single Cell RNA Sequence	LAM Foundation, Inc	6/1/18 - 5/31/19	\$ 40,000.00
PULM	Yu, J	Targeting prostaglandin biosynthesis and action in LAM	R01-HL138481	8/1/17 - 6/30/20	\$ 1,152,068.00
PULM	Yu, J	The impact of estrogen-promoted extracellular matrix-degrading programs on LAM	U Penn Million Dollar Bike Ride	1/1/18 - 12/31/18	\$ 45,509.00
TOTAL					\$10,316,288.57

ARR ADMIN TEAM

Acknowledgements

Annual Research Report Committee

Yolanda Wess—Project Manager

Angela Duke—Project Lead

Emily Dobbs—Profiles, Image Gallery

Eric Smith, MD—Spotlight and Feature stories

Kelly Niederhausen—Graphs, Reports, Forecasting

Colleen Kelley—Photographer

Cedric Ricks—Editor, Spotlights

Annual Research Report Admin Team



Back (left to right): Christina Salyers, Mike Ruebusch, Angela Duke

Front (left to right): Emily Dobbs, Kim Benna, Connie Adkins, Shakeith Lawson

Not pictured: Priscilla Schmidt, Melissa Baker, Lisa Latham, Gayle Pollack, Rachel Baker

IMAGE, FACING PAGE:

What's on Your Mind

Inspired by the founder of modern neuroscience, Santiago Ramon y Cajal, our research program has integrated multiple images in order to create a single image that truly signifies the beautiful connection between art and science. The gap between art and science is bridged when raw scan data is harnessed for neuroimaging analyses; our research attempts to clarify the causes of anxiety disorders in order to predict treatment response in pediatric patients by analyzing brain activity and brain chemistry. Through translational research, we are better suited to make a direct impact on the world around us by employing new knowledge to create innovative healthcare approaches.

Images created with Freesurfer, Qdec Image Lab, Photoshop.

CREDIT:

Sarah Mossman, BS, UC Department of Psychiatry and Behavioral Neuroscience Anxiety Disorders Research Program

IMAGE, BACK COVER:

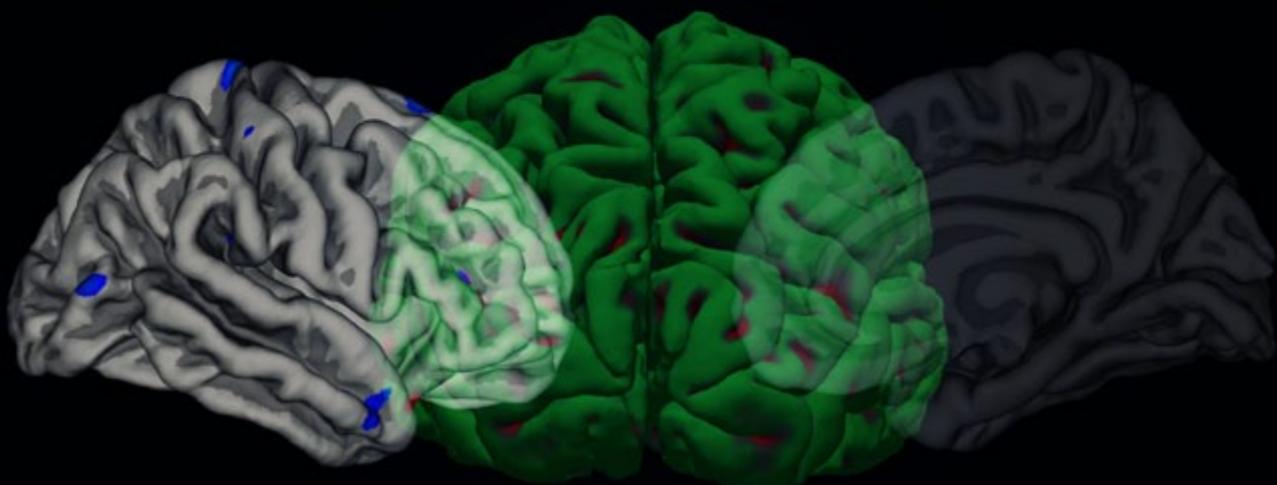
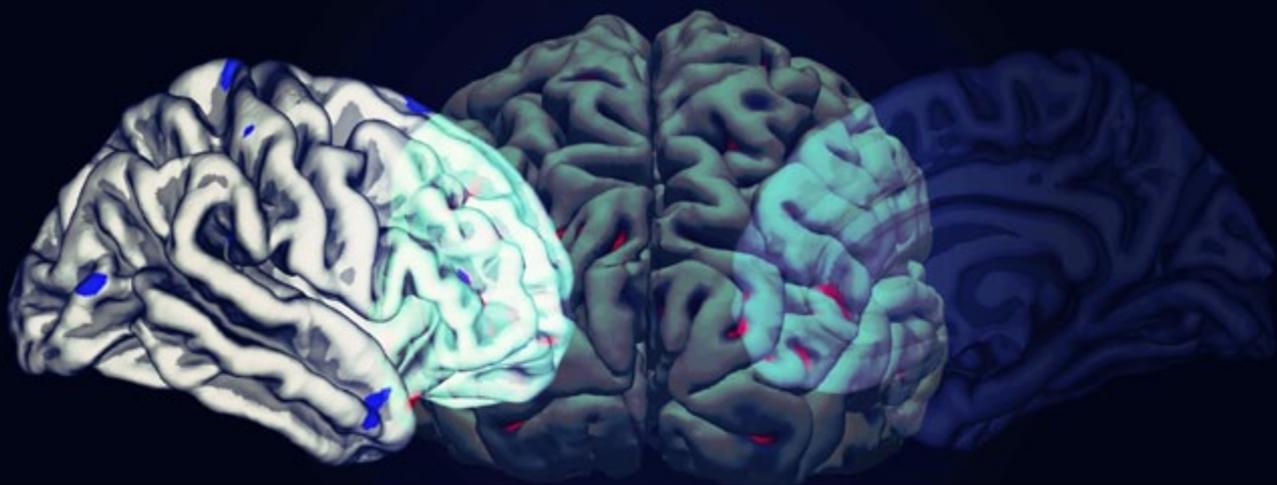
Kidney, the Master Communicator

This piece of art represents the communication of the renal tubular epithelial cells. The uniqueness of this piece is attributable to the various interactions that are captured within this image. The different colors signify different proteins expressed in the membrane of the renal tubular cells, the intensity represents the level of the specific protein expression. Some proteins reach out to other cells. These proteins are ready to be released into the circulation as microparticles after stimulation. *(Please note image is cropped in use.)*

Live Microscopy Core was used on October 18, 2017 with a Zeiss 710 laser scanning confocal microscope (Zeiss GmBH), 40x objective.

CREDIT:

Samuel Bockhorst, BS, Department of Internal Medicine, Nephrology, Kidney CARE Program





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College of Medicine

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