

REACHING NEW HEIGHTS

2022 Annual Report

Department of Medicine

SCHOOL OF MEDICINE

UNIVERSITY OF COLORADO **ANSCHUTZ MEDICAL CAMPUS**

Table of Contents

Chair's Message 2

Department of Medicine Highlights 4

By the Numbers 6

Finance & Administration 8

Division Highlights 10

Vice Chairs 68

Wellness 84

Affiliates 88

New Horizons 96

Philanthropy 100

Chair's Message

Vineet Chopra, MBBS, MD, MSC | Robert W. Schrier Chair of Medicine



Onward.

Members of the Department of Medicine will recognize this as my signature closing on communications. As I reflect on the year past, the term seems fitting to encompass the progress we have made on many fronts.

Our department, which is made up of 14 divisions, continues its relentless focus on advancing human health. We remain dedicated to clinical excellence: launching new care programs, boosting existing platforms and focusing on clinic access. We are committed to ensuring the highest quality and safety for the patients we care for in our hospitals.

Our scientists continue to perform cutting-edge research; unlocking mysteries that will alleviate human suffering while obtaining record levels of extramural funding. We also remain deeply committed to mentoring our trainees, instilling in them unyielding curiosity and compassion for those who may cross their paths.

We have moved forward in nontraditional ways. Members of our department have launched new startups, patented innovations and cemented exciting partnerships with unique industries. Our faculty and staff have embraced digital strategies ranging from telehealth and websites to smartphone apps and care pathways that on any given day may easily touch thousands of patients. And we have launched new foci of excellence — amalgamating multidisciplinary care teams, clinical trials and philanthropic support to propel us to new heights.

In the pages that follow, you will read stories, view images and hear more about these advances. You will feel the exhilaration, hope and opportunity that I have felt at the helm of this incredible organization. And I hope you will sense that our journey is just beginning.

As a record number of patients, providers and stakeholders seek our expertise, new opportunities to redefine treatment paradigms, teach a new generation of physicians and make fundamental new scientific discoveries lie ahead. Our future is brighter and better than it has ever been.

I invite you to join me on our voyage. **Onward.**

Our future is brighter and better than it has ever been.



Department of Medicine Highlights


Sunita Sharma, MD


Janine Higgins, PhD


Fernando Holguin, MD and Mary Weiser-Evans, PhD


Kristine Kuhn, MD, PhD

Welcoming New Leaders

It has been a year of excitement and momentum as we have welcomed new leadership to our department and divisions.

Vice Chairs

Vice Chair for Faculty Development and Mentorship

Sunita Sharma, MD, professor of medicine, Division of Pulmonary Sciences and Critical Care Medicine, was successfully recruited for this important role. Dr. Sharma will establish an office focused on creating programs to support faculty and staff growth, promotions, recognition and mentorship across all of our affiliates.

Vice Chairs for Research

The department restructured our research office to be more inclusive and integrative of the kinds of investigations happening across our campus.

Janine Higgins, PhD, professor of medicine, Division of Endocrinology, was recruited as vice chair for research. Dr. Higgins will oversee all research programs in the department and will be responsible for working to raise our research rankings nationally. She will be supported by two new associate vice chairs of research: **Mary Weiser-Evans**, PhD, professor of medicine, Division of Nephrology, and **Fernando Holguin**, MD, professor of medicine, Division of Pulmonary Sciences and Critical Care Medicine. Dr. Weiser-Evans will oversee T0-T1 research programs and support, whereas Dr. Holguin will be responsible for T2-T4 research.

Division Heads

Following a national search, we were pleased to welcome **Kristine Kuhn**, MD, PhD, associate professor of medicine, as our new division head of Rheumatology. Dr. Kuhn is a leading physician-scientist whose research focuses on mucosal immunopathology of arthritis.

After a national search, we also welcomed **Cari Levy**, MD, PhD, as our new division head of Geriatrics. Dr. Levy leads a nationally recognized research program focused on developing new models of long-term and palliative care delivery.



Cari Levy, MD, PhD



Jennifer Christie, MD, FASGE, AGAF

In September of 2023, we will celebrate the arrival of **Jennifer Christie**, MD, FASGE, AGAF, our new division head of Gastroenterology and Hepatology. Dr. Christie is a professor of medicine and a national expert in women's gut health and gastrointestinal motility. Her research focuses on reducing racial and ethnic disparities in colon cancer screening.

New Programs and Platforms

Clinical Excellence Society

Clinical faculty spend the majority of their time caring for patients. Despite their critical role in patient care, opportunities to highlight the work they do — or to honor the best among them — remain limited. We created the Clinical Excellence Society to rightfully honor these individuals. The society's vision is to uplift faculty who are judged by their peers and leaders to be the best of the best: the Doctors' Doctors. This program has been supported by a large gift from an anonymous donor and will seek to elect its inaugural class of honorees this year.

Mentorship Academy

Learning how to be the best mentor or the ideal mentee is not difficult, but it's rarely taught. This year, our department will demystify this process by sharing best practices, tips and tricks from world-renowned mentors and mentees. We will partner with the University of Michigan and bring the nationally acclaimed Mentorship Academy to our campus this fall, with many of our faculty joining the program as speakers and leaders.

Quality Council

The department launched the Quality Council that now includes representatives from every division within a centralized structure to coordinate quality efforts. The council includes individuals who have training and expertise in quality and safety within their individual specialties.

Diversity, Equity, Inclusion and Justice Council

The department places strong emphasis on diversity, equity, inclusion and justice (DEIJ) across all of our missions. To further expand this work and place emphasis on specific areas, including our internal environment, recruitment and retention and educational activities, the DEIJ Council was created. Members of the council represent many of the department's divisions, programs and affiliates and will provide guidance and oversight on our DEIJ mission.

Growing Research Funding and National Rankings

The Blue Ridge Institute for Medical Research (BRIMR) ranks departments and schools of medicine nationally based on NIH funding. Compared to last year, the department received an additional $15M in extramural funding. We are now the 23rd most funded department of medicine in the country.

Compared to last year, the department received an additional $15M in extramural funding.

By the Numbers

Department of Medicine

14
Divisions

65
Endowed Chairs
Benefitting DOM Faculty

People

1,205
Regular Faculty

857
Part-Time Faculty

188
APP Faculty

928
Research & Admin Staff

Promotions

54
Assistant Professors
promoted to Associate Professors
(1 with tenure)

19
Associate Professors
promoted to full Professors
(6 with tenure)



Research

1,132
Extramurally Funded Projects

$356.9M
Total Research Funding

2,482
Peer-Reviewed Articles Published

#23
Blue Ridge Institute NIH Ranking



Patient Care

595,567
Outpatient Encounters

302,789
Inpatient Encounters

$300M
Clinical Income (FY2022)

285,230
Patient Discharges



Education

188
Residents

22%
Residents from URIM Backgrounds

156
Fellows

30%
Graduate Fellows from URIM Backgrounds

Finance & Administration



The Department of Medicine's staff is an amazing team! Pictured in their offices, from left to right – back row first, stands Stephen Newcomb; Tate Hermanson, MBA; Dave Sayers, CPA; Eleanor Olthoff, MS; Tiera Vaughns, MBA; Trish Loftin; Amy Vucci; Brita Alley; Amanda Tran; Lynette Brandon, PHR, SHRM-CP; and Jennifer Bilsey.

At a Glance

$344M
Department's Clinical Charges

$106M
Department's Clinical Payment

173k
Individual Patients Seen

773k
Patient Visits

The Department of Medicine is in a position of financial strength. We are working to grow key clinical areas to increase patient access and invest in research and education while growing total encounters and revenue.

The department's operating budget is nearly $14M per year while our net clinical income has grown to be almost $300M a year. The major component of departmental revenue comes from clinical earnings from the department's 13 clinical divisions. The department also receives state allocations for medical education, and a portion of research indirects from sponsored projects.

Because clinical revenue drives so much of our bottom line, we remain focused on improving patient access, quality and patient/provider satisfaction. Our strong financial metrics reflect robust performance in these domains. Importantly, these funds are invested back into the department and its divisions, creating new programs, supporting salaries and investing in research support, quality improvement and faculty and staff retention.

The department benchmarks clinical faculty salaries against published external benchmarks, including the AAMC and MGMA, as well as internal equity benchmarks that factor rank, specialty and years of service. New this year is the introduction of a dashboard that allows divisions to examine salary equity when proposing adjustments to faculty and staff compensation. Between these sources, we believe we take the best approach to ensuring equitable compensation for all.

Annually, the department receives $5M in academic support that is spent on medical education activities including our internal medicine residency program and divisional fellowship programs. Education funds also support the medical student research track, Research and Equity in Academic Medicine (REAM) program, physician scientist training program and departmental grand rounds.

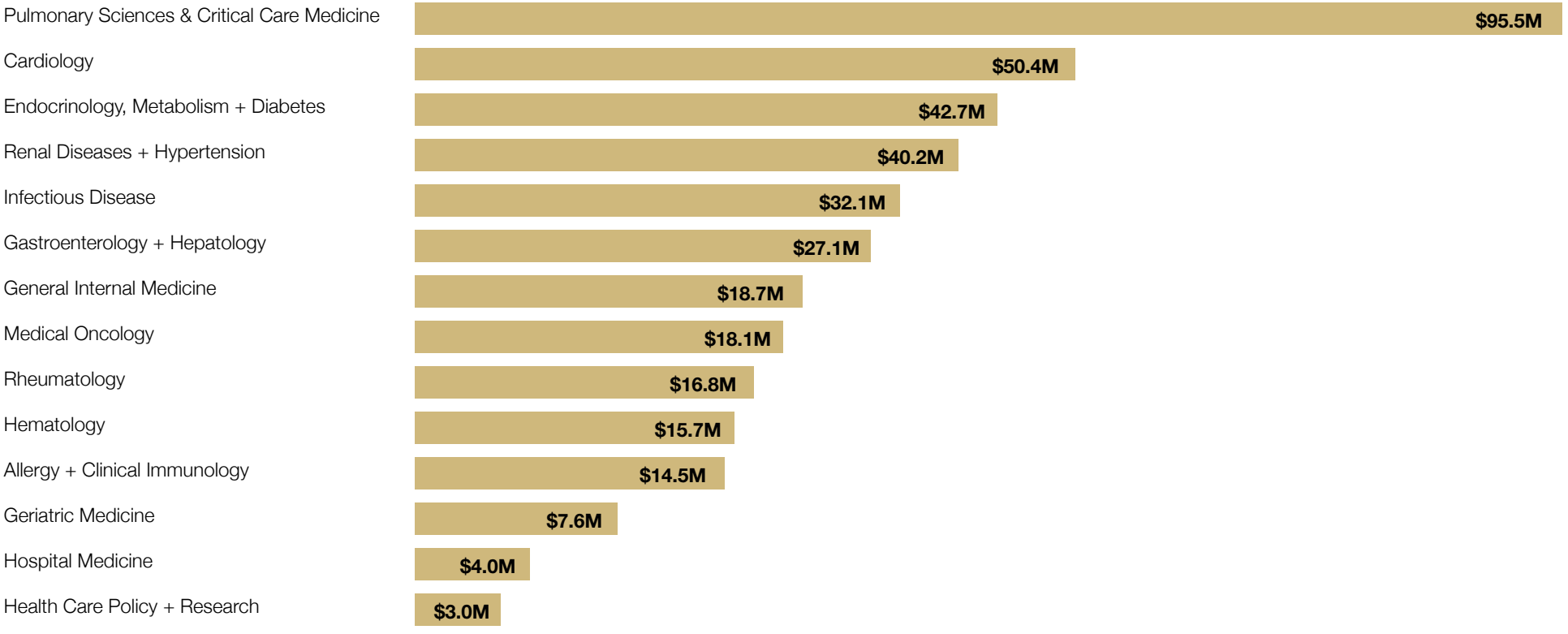
$7.5M (-18%)
Expenses

1.42M (+9%)
wRVU

595.2K (+14%)
Outpatient Encounters

285.2K (+3%)
Inpatient Discharges

Current NIH Research Funding per Division





Division Highlights

Division of Allergy & Clinical Immunology

Stephen Dreskin, MD, PhD | Interim Division Head



Stephen Dreskin, MD, PhD

Our division provides specialty care in allergy and immunology for the University of Colorado Hospital system and laboratory support for transplantation programs throughout the region. Additionally, we provide tertiary care for physicians throughout the Mountain West region. Our specialists see patients with atopic and immunologic diseases, including rhinitis, food allergy, drug and vaccine allergy, urticaria, angioedema, anaphylaxis and non-HIV immunodeficiency. We perform skin testing for aero and food allergens, drug allergy testing and challenges, skin biopsies, limited patch testing and spirometry.

Innovation in Patient Care

Drug Allergy Delabeling

Anjeli Kalra, MD, assistant professor of medicine, established a program to evaluate patients with penicillin, sulfa and other drug allergies, with the intention of removing inappropriate drug allergy labels ("delabeling"). Dr. Kalra has partnered with other medicine specialties and has also worked closely with the departments of Anesthesia, Obstetrics and Gynecology and Orthopedics on drug allergy delabeling.

Transitions of Care

Suzanne Ngo, MD, assistant professor of medicine, works clinically in both the Division of Allergy and Clinical Immunology and the Section of Pediatric Allergy in the Department of Pediatrics. She has developed a unique program to facilitate the transition of severe asthma patients from pediatric to adult care, ensuring consistent and smooth care delivery and outcomes.

Clinical Operations

Jenny Stitt, MD, assistant professor and medical director of the Allergy practice at University of Colorado Hospital, coordinates closely with UCHealth to ensure that our patients have timely access to quality allergy, asthma and clinical immunology care. Stitt is also leading an investigator-initiated research program to study patients with chronic spontaneous urticaria.

Louise Helander, MBBS, assistant professor of medicine, joined our division in 2022 as chemiluminescent immunoassay director of the ClinImmune Flow Laboratory. Dr. Helander was instrumental in the successful College of American Pathologists' inspection of the ClinImmune Cancer Gene Therapy and Flow Laboratory, and provides medical oversight within the stem cell, human leukocyte antigens and Flow Laboratory at ClinImmune.

Advancing Research

Brent Palmer, PhD, associate professor of medicine, and director of the ClinImmune Flow Cytometry Laboratory, published several articles in 2022, including one in the high-impact *Journal of Experimental Medicine.* The main focus of the Palmer laboratory is host microbiome interactions in the lung and gut. Palmer is a principal investigator on a new multi-PI RO1 study of the gut microbiome in HIV-positive men. He is also a co-PI on a new R01 to study metabolic complications associated with HIV disease and is co-investigator on a Rheumatology P30.

Michael Falta, PhD, assistant professor of medicine, and **Shaikh Atif**, PhD, assistant professor of medicine, published manuscripts on the topic of granulomatous inflammation in the *Journal of Clinical Investigation* and the

Journal of Experimental Medicine. Atif and Falta are currently leading two R01 grants. Atif also recently received an Ann Theodore Foundation Breakthrough Sarcoidosis Initiative grant.

Charles Kirkpatrick, MD, professor of medicine, has recently identified a new abnormality in the immune system in a family with immunodeficiency.

Brian Freed, PhD, MA, MS, professor of medicine, is completing a study of mesenchymal stem cell therapy for diabetic wound healing. He has also recently obtained patents and launched a company, RheumaGen, for the use of RNA-guided genome editing technology in the treatment of drug-resistant rheumatoid arthritis. Uniquely, he received a grant from NASA to study expansion of stem cells in space. Freed leads ClinImmune Cell & Gene Therapy, an important part of the division's focus that provides umbilical cord blood and tissue banking, clinical testing for human stem cell and organ transplants, stem cell product processing and infusion services.

Preston (Charles) Neff, PhD, assistant professor of medicine, is completing a K01 award to study interactions of intestinal epithelial cells, the innate immune system and gut microbiota in HIV.

Stephen Dreskin, MD, PhD, professor of medicine, published a paper describing how specific proteins present in both peanuts and tree nuts may be responsible for cross-reactivity in 20 to 30 percent of patients with either peanut or tree nut allergies. Dr. Dreskin is principal investigator on two NIH grants examining the molecular basis of IgE binding to peanut allergens and cross-reactivity between peanut and tree nut allergy.

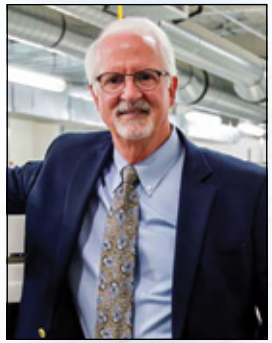
Advancing Education

Fellowships in Allergy and Clinical Immunology

Our division participates in three allergy and immunology fellowship programs involving nine fellows per year. We work with our affiliate, National Jewish Health, to co-administer the allergy fellowship program for internal medicine-trained residents. We also participate in the training of pediatric allergy fellows in conjunction with the Children's Colorado Fellowship Program and the National Jewish Pediatric Fellowship Program.



Brent Palmer, PhD



Brian Freed, PhD, MA, MS

New Modalities in Teaching and Learning

Elizabeth George, MD, MPH, Allergy fellow, was a department Clinician Educator Fellow for the 2021–22 academic year and created a curriculum for resident asthma education and medical student telehealth education.

Training and Mentorship of Junior Faculty

The division continues to support a grant review program for new and competitive grant proposals for division members. **Shaikh Atif**, PhD, assistant professor of medicine, and **Preston (Charles) Neff**, PhD, assistant professor of medicine, will submit new proposals to the National Institutes of Health following feedback from this grant review program.




Anjeli Kalra, MD


Jenny Stitt, MD


Christina Roark, PhD


Louise Helander, MBBS

Faculty Highlights

Awards

Anjeli Kalra, MD, assistant professor of medicine, was awarded a LinQS fellowship from the department in July 2022. She was recognized as an Outstanding Educator in 2022 by the Allergy Fellows of the Children's Colorado Allergy Program.

Jenny Stitt, MD, assistant professor of medicine, was also recognized as an Outstanding Educator in 2022 by the Allergy Fellows of the Children's Colorado Allergy Program.

Achievements

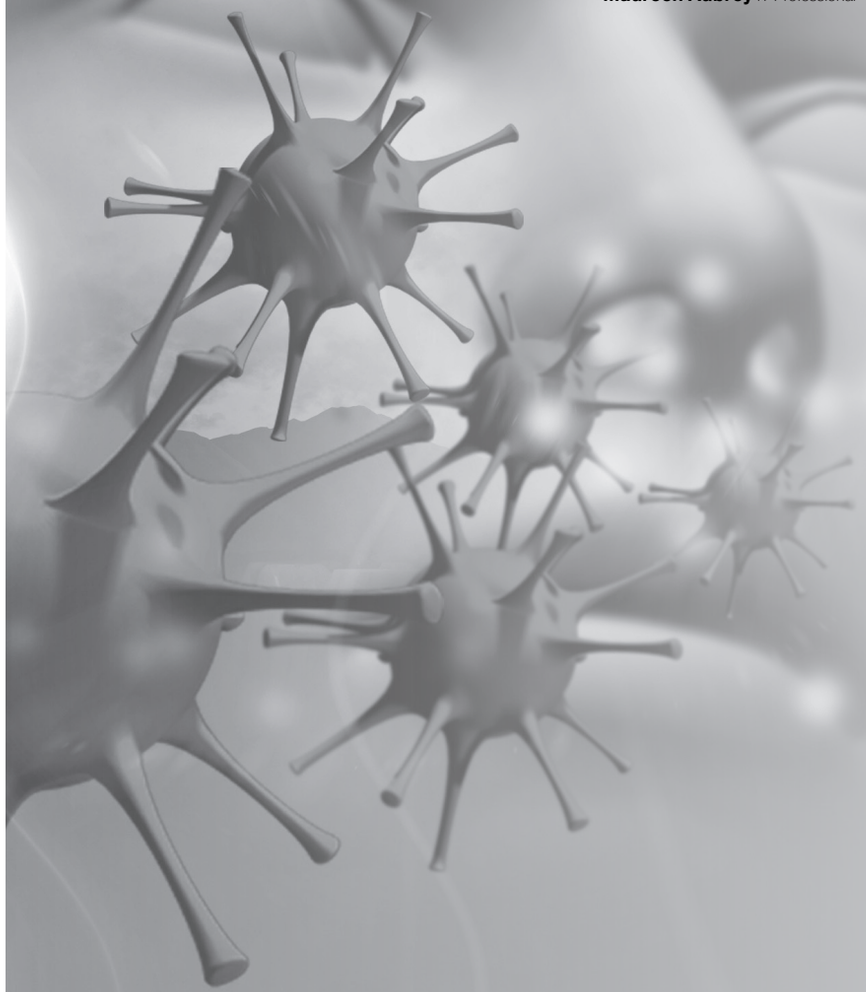
Christina Roark, PhD, assistant professor of medicine, completed her directorship training as a board-certified fellow in the American College of Histocompatibility and Immunogenetics.

Louise Helander, MBBS, assistant professor of medicine, was selected as a preceptor for medical students as part of the pathology small group sessions for histology teaching.

Looking Forward

Dr. Dreskin assumed the role of interim division head in July 2022. A national search is underway for a permanent division head and several exceptional candidates have been identified for this role. Looking ahead, the division aims to expand its clinical, educational and research programs under new leadership.

Members of the Division of Allergy & Clinical Immunology



Rafeul Alam Professor
Elijah Anderson Health Care Entry Professional
Shaikh Atif Assistant Professor
Michael Aubrey Instructor
Robin Aubrey Admin Assistant III
Maureen Aubrey IT Professional
Mark Baumgardner Health Care Professional
Ryan Baxter Facilities Entry Professional
Darryl Becenti Health Care Professional
Zheng Bi Health Care Senior Professional
Kristen Blackburn
Health Care Senior Professional
Patricia Boswell
Finance and Accounting Professional
Jessica Bradshaw
Finance and Accounting Principal Professional
Anne Brauweiler
Research Services Principal Professional
Krystopher Brown
Facilities Senior Professional
Sarah Bruno Health Care Principal Professional
Linda Cagle Health Care Principal Professional
Xueni Chen Assistant Professor
Henry Chu Research Services Entry Professional
Lam Dao Health Care Principal Professional
Kelly Douglas Health Care Professional
Stephen Dreskin Professor
Keelan Elliott-Garcia
Health Care Senior Professional
Michael Falta Assistant Professor
Kathryn Foster
Health Care Senior Professional
Sandra Fradenburg
Business Services Program Director
Brian Freed Professor
Alison Freed Admin Assistant III
Jessica Galant-Swafford
Assistant Professor
Magdalena Gorska Associate Professor
Ashleigh Greenman
Health Care Entry Professional
Denisa Grofova Health Care Entry Professional
Garrett Hedlund
Research Services Senior Professional
Louise Helander Assistant Professor
Phylicia Hermanson
Research Services Senior Professional
Amanda Hoskison Admin Assistant II
Wei-Chi Huang Admin Assistant I
Lisa Imamura
Research Services Entry Professional
Vibha Jha Research Associate
Anjeli Kalra Assistant Professor
Rohit Katial Associate Professor
Charles Kirkpatrick Professor
Shelli Ksobiech
Health Care Senior Professional
Ji-Hae Larson Health Care Senior Professional
Nghia Le Health Care Professional
Jessica Lee Health Care Entry Professional
Jimei Li Health Care Principal Professional
Ricky Lippincott
Research Services Entry Professional
Weimin Liu Senior Research Associate
Hannah Long Instructor
John Loughridge
Health Care Senior Professional
Timothy Lovato Admin Assistant I
Sherri Magner Research Services Manager
Omemh Mahjoob Health Care Professional
Veronica Hidalgo Mata
Health Care Entry Professional
Brandon McCormick
Health Care Professional
Amy McKee Assistant Professor
Dianne McLaughlin
Health Care Senior Professional
Manjula Miglani Postdoctoral Fellow
Christine Miller
Health Care Senior Professional
Andrew Minton IT Professional
Roberto Naranjo IT Technician II
Neshiyqah Nash Health Care Professional
Preston (Charles) Neff Assistant Professor
Cassie Nelson Health Care Senior Professional
Masha Nevski Health Care Professional
Suzanne Ngo Assistant Professor
Amy Noe
Research Services Principal Professional
Lora Offord Health Care Senior Professional
Jasmine Ortega Nava Admin Assistant II
Samantha Ortiz Admin Assistant III
Kanao Otsu Assistant Professor
Brent Palmer Associate Professor
Katherine Pearson
Health Care Entry Professional
Allison Piluso
Health Care Principal Professional
Mary Portas
Senior Professional Research Assistant
Edward Prage Research Associate
Christina Roark Assistant Professor
Lanny Rosenwasser Clinical Professor
Lucero Rodriguez Health Care Professional
Samantha Rosicke Health Care Professional
Jeffrey Rumbyrt Clinical Professor
Drake Salas Health Care Entry Professional
Ivelisse Sanchez Shumate
Health Care Senior Professional
Trevor Sawyer IT Principal Professional
Paul Schkade Associate Clinical Professor
Alan Schocket Professor
Tanya Serrano Health Care Senior Professional
Shravida Shetty
Health Care Program Manager
Sabisha Shrestha
Research Services Principal Professional
Daniel Soteres Associate Clinical Professor
Marc Steinman
Business Services Program Director
David Stephens
Health Care Principal Professional
Jenny Stitt Assistant Professor
Sabine Stockinger Research Associate
Marian Tamondong-Reside
Health Care Program Manager
Brianna Tapia Health Care Senior Professional
Rebecca Tucker Research Associate
Caley Valdez
Research Services Entry Professional
Eileen Wang Associate Professor
Stephanie Warnell-Gray
Health Care Principal Professional
Gina Wedermyer Health Care Manager
Catherine Winters
Research Services Program Director
Jahfarie Wisdom Health Care Professional
Min Zhang Research Services Senior Prof

NJH Affiliates
Magdalena Gorska
Flavia Hoyte
Rohit Katial
Eileen Wang
Kanao Otsu
Jessica Gallant-Swafford

Division of Cardiology

Larry Allen, MD | Interim Division Head



Cardiology Chief Fellow Joseph Adewumi, MD, reading an Electrocardiogram "ECG."

Larry Allen, MD, MHS

Our division remains committed to understanding the causes of cardiovascular disease and translating this knowledge to improve patient care.

This year, the Division of Cardiology was named a Center of Excellence by the Hypertrophic Cardiomyopathy Association for the care of patients with this genetic disease that causes the heart muscle to thicken. We are currently participating in research around cardiac myosin inhibitors (e.g., mevacamten), a new class of medications used to treat hypertrophic cardiomyopathy. Our surgeons are also adept at performing septal myectomy, open-heart surgery that treats obstructive forms of hypertrophic cardiomyopathy.

Cardiac Electrophysiology

Our Cardiac Electrophysiology Section, a major subspecialty within the division, focuses on electrical problems within the heart.

Wendy Tzou, MD, FHRS, FACC, associate professor of medicine, and section head for Cardiac Electrophysiology, is a national expert in ventricular tachycardia ablation. Dr. Tzou has blazed a path to eliminating ventricular tachycardias — not only through improved mapping and imaging techniques, but also through the use of epicardial approaches to improve access to optimal areas for ablation and circulatory support to stabilize patients while they are triggered into these heart rhythms.

Heart Transplantation

The Advanced Heart Failure, Mechanical Circulatory Support and Transplant Program is the only program in the state of Colorado that performs heart transplantation and placement of durable left ventricular assist devices. In the calendar year 2022, we performed 62 heart transplants, making us the 13th-busiest program in the country.

Heart Valve Treatment

Historically, patients had to undergo open heart surgery to have diseased valves replaced by a surgeon. Our Cardiac Catheterization Lab now performs percutaneous valve treatments, sparing patients these invasive procedures. We began these procedures with the aortic valve, have since moved to the pulmonic valve and are now expanding to mitral and tricuspid valves.



Wendy Tzou, MD, FHRS, FACC

Congenital Heart Disease

Our adult and pediatric cardiologists uniquely understand the complex anatomy of individuals born with abnormal hearts. The Colorado Adult and Teen Congenital Heart (CATCH) program available at both Children's Hospital Colorado and the University of Colorado Hospital offers some of the only care in the Mountain region for people with this disease.

New Diagnostic Approaches

Our division has participated in the use of a device called CardioMEMS, which provides an early-warning signal if patients begin to experience worsening of their congestive heart failure.

This small device is placed in the pulmonary artery to measure pressures in the lungs in real time, providing unique insights into how we can best adjust patients' medications, including diuretics.

Extending Care in the Community

In the last 10 years, we have extended our reach from Anschutz Medical Campus in Aurora to the metropolitan Denver area. We now have cardiologists at UCHealth Highlands Ranch Hospital, UCHealth Lone Tree Medical Center and the UCHealth Boulder Health Clinic. Recently, we staffed the UCHealth Heart and Vascular Center at Cherry Creek Medical Center, a large subspecialty ambulatory clinic with advanced imaging capabilities.

Additionally, our division has been working in close collaboration with UCHealth cardiology partners in Fort Collins, Colorado Springs and northern and southern Colorado. Through telehealth consultations, we now even reach patients in eastern Nebraska, Southern Wyoming, Kansas and New Mexico.

Centers and Institutes

Last year, we received a generous $12 million gift to support the Advanced Cardiac Imaging and Image Guidance Center. This infusion of resources has taken us to the next level of cardiovascular computerized tomography and positron emission tomography. We are poised to become national leaders in cardiac imaging and planning of heart procedures.



Timothy McKinsey, PhD



Amy Barley, DO



Michael Bristow, MD, PhD

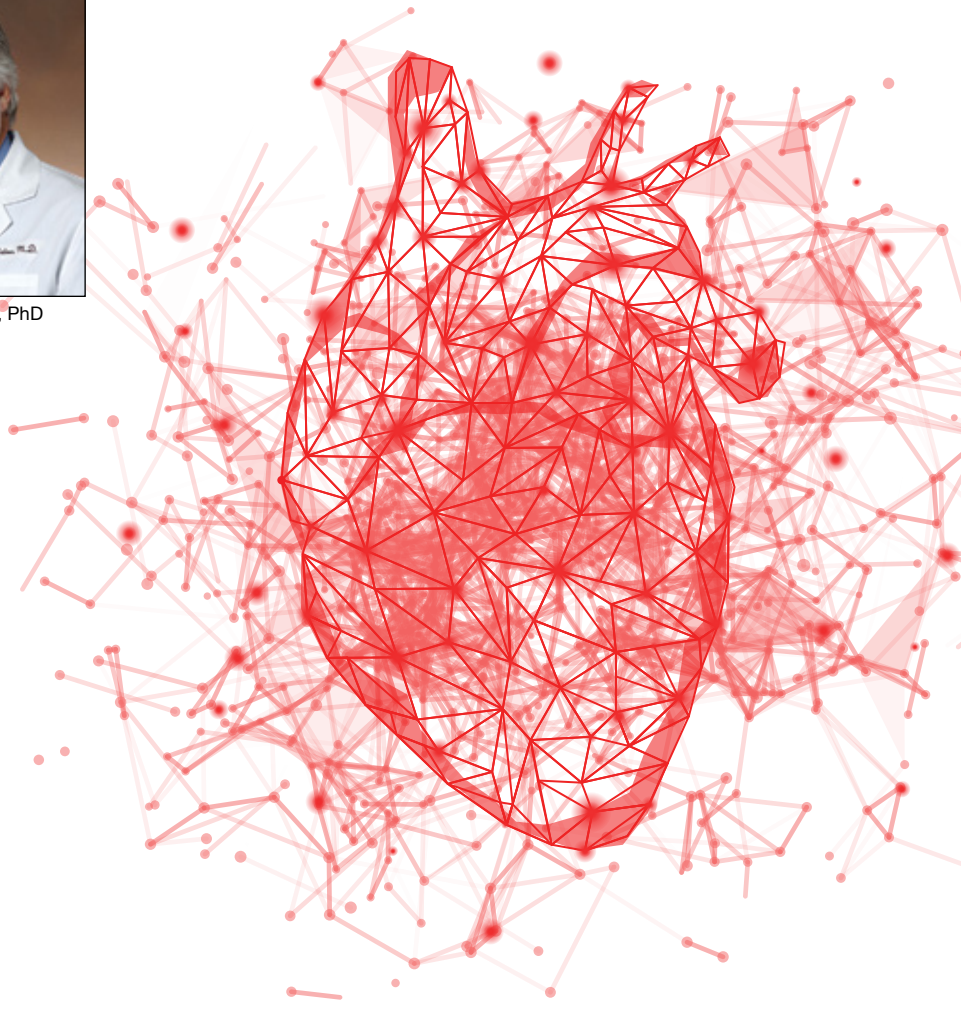
Research Highlights

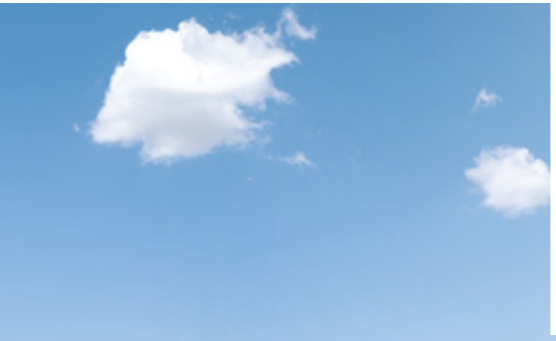
The Division of Cardiology is one of the most well-funded divisions in the Department of Medicine, and one of the largest cardiology-focused recipients of National Institutes of Health and American Heart Association grant dollars.

Timothy McKinsey, PhD, professor of medicine, studies how the regulation of collagen deposition and other fibrotic changes affect heart function and how to potentially treat them. A few years ago, we received a $10 million grant to set up the Consortium for Fibrosis Research and Translation (CFReT).

Dr. McKinsey and **Michael Bristow**, MD, PhD, professor of medicine, **Peter Buttrick**, MD, professor of medicine and senior associate dean for research affairs, and **Larry Allen**, MD, MHS, professor of medicine, lead one of the American Heart Association's research networks in heart failure. The team has done significant work in how to tailor therapy to patients who have heart failure with reduced ejection fraction.

The division has 15 PhD researchers in our basic science research group who are working on a range of innovative projects on cardiomyocyte biology funded







Cardiology Fellowship Graduation May 12, 2023



by the National Institutes of Health, Department of Defense and numerous agencies.

We are also involved in the Colorado Center for Personalized Medicine, a campuswide center focused on genomics that has now collected samples from nearly 100,000 patients. Our researchers lead the way in linking the omics data to patients' demographics and clinical data. Going forward, our faculty will help lead the way on how to bring these data together to enable truly personalized medicine in routine cardiovascular care.

Dr. Buttrick leads an NIH T32 grant that provides two years of research support for our physician and PhD trainees. It has been a strong source of protected time and funding to be able to develop future leaders in academic cardiology.

Advancing Medical Education

Cardiology Fellowship Training Program

We are the primary training facility for cardiologists in the Colorado region. Our cardiology fellowship program trains seven fellows per year for three years. We also offer subspecialty fellowships in advanced heart failure and transplantation, adult congenital heart disease, electrophysiology, interventional cardiology, vascular medicine and advanced cardiac imaging. Our programs produce graduates that are highly recruited across the nation.

We strive to continuously evolve our training programs. Most recently, we created a monthly academic day for deep dives into focus areas within cardiology. This has created more balance for our fellows in terms of having protected time to think, digest and learn by doing.

Research Training/Mentorship for Junior Faculty

We have a history of training people who take extra time in research so that they are well prepared to become medical school faculty and physician-researchers. Many of our current faculty members have followed this pathway.

Virtual Training Programs

We have participated in virtual training programs for cardiac procedures, including transesophageal echocardiography and cardiac catheterization, among others. This is in large part due to our ongoing research partnerships with some of the leading cardiac imaging companies.

Looking ahead, we aim to define academic cardiology of the future by providing a full complement of cutting-edge cardiovascular care, leading the way in basic and clinical research and training the next generation of cardiovascular health care providers for Colorado and beyond.

Members of the Division of Cardiology

Tanner Bloks
Research Services Senior Professional
Nana Burns
Research Services Senior Professional
Nzali Campbell Post-Doctoral Fellow
Jodi Corley Post-Doctoral Fellow
Ilham Essafri Post-Doctoral Fellow
Morteza Farasat Assistant Professor
Mehdi Fini Assistant Professor
Ashleigh Downs
Research Services Program Manager
Aneta Gandjeva Research Instructor
Maria Gore Associate Professor
Lawrence Hergott Professor Emeritus
Shea Hogan
Associate Professor of Clinical Practice
Matthew Holland Assistant Professor
David Irwin Associate Professor
Sushil Kumar Instructor
Min Li Instructor
Christina Lisk Post-Doctoral Fellow
Melissa Lucero Post-Doctoral Fellow
Joanne Maltzahn
Research Services Professional
Ravi Marfatia Assistant Professor
Erin McGuinn Assistant Professor
Brittany McKeon
Research Services Principal Professional
David Pak
Research Services Senior Professional
Andrzej Poczobutt
Business Services Program Director
Ram Raj Prasad Post-Doctoral Fellow
Timothy Sullivan
Research Services Professional
Delaney Swindle
Research Services Principal Professional
Barbara Abrahams Associate Professor
Elijah Ahmad
Research Services Entry Professional
Bilal Aijaz Assistant Professor
Ryan Aleong Associate Professor
Hadi Ali Post-Doctoral Fellow
Larry Allen Professor & Endowed Chair
Natasha Altman Associate Professor
Amrut Ambardekar Associate Professor
Jose Banchs Professor
Valerie Banks Business Services Professional
John Paul Bare IT Senior Professional
Amy Barley Associate Professor
Emily Benton Assistant Professor
Scott Berkowitz Professor
Marc Bonaca Professor & Endowed Chair
Rory Bricker Assistant Professor
Andreas Brieke Professor
Michael Bristow Professor
Kelley Brodsky
Business Services Program Director
Neel Butala Assistant Professor
Peter Buttrick Professor & Endowed Chair
Mario Enrico Canonico
Post-Doctoral Fellow
Mona Cantu Instructor
John Carroll Professor
Ian Carroll Senior Research Associate
James Carter Assistant Professor
Mariana Casa de Vito
Research Services Entry Professional
Maria Cavasin Instructor
Shiuh-Yung Chen Associate Professor
Suet Nee Chen Assistant Professor
Congwu Chi Assistant Professor
Josephine Chou Catanzaro
Assistant Professor
Devon Conradson Research Assistant
William Cornwell Associate Professor
Ryan Cotter Assistant Professor
Ramona Davis Instructor
Aken Desai Assistant Professor
James Dillingham Senior Instructor
Rayni Dores Instructor
Yanmei Du Research Services Professional
Cheyanne Durham
Research Services Entry Professional
Ramone Eldemire Instructor/Fellow
Kaitlin Erpenbeck
Research Services Entry Professional
Ryan Feller
Research Services Entry Professional
Kristy Gama Senior Instructor
Shanshan Gao Post-Doctoral Fellow
Lohit Garg Assistant Professor
Emanuel Gebreab
Research Services Professional
Edward Gill Professor
Sharon Graw
Research Services Senior Professional
Clifford Greyson Principal Investigator
Daniel Groves Assistant Professor
Camella Gulick Instructor
Frehiwet Hailu Post-Doctoral Fellow
Elizabeth Hardy
Research Services Professional
Edward Havranek Principal Investigator
Lingaonan He Post-Doctoral Fellow
Rodolfo Hernandez
Research Services Senior Professional
Connie Hess Associate Professor
Pei Jai Michael Ho Professor
Christopher Hoffer
Research Services Entry Professional
Chenin Holtzworth Instructor
Judith Hsia Professor
Isaiah Jackson
Research Services Entry Professional
Stacey Johnson Instructor
Eric Jonas Research Services Entry Professional
Whitney Juselius Associate Professor
David Kao Associate Professor
Mark Keller Associate Professor
Amber Khanna Associate Professor
Prateeti Khazanie Associate Professor
Christopher Knoepke
Assistant Professor-Research
Lavanya Kondapalli Associate Professor
Tonya Lacy Business Services Professional
Margaret Lam Associate Professor
Edward Lau Assistant Professor
Zoe Leroux
Research Services Entry Professional
Carlin Long Professor Adjoint
David Magid Professor
Maria Marsala Instructor
Roberta McGee
Finance and Accounting Program Manager
Colleen McIlvennan Associate Professor
Timothy McKinsey
Professor & Endowed Chair
Kristen Medo Research Services Professional
John Messenger Professor
Luisa Mestroni Professor
Leslie Meyer
Research Services Principal Professional
Julie Michalek Senior Instructor
Wayne Minobe Research Services Professional
Jamaluddin Moloo Professor
Michael Morcos Assistant Professor
Karen Moulton Associate Professor
Laura Munoz
Research Services Entry Professional
Sivan Naveh
Research Services Entry Professional
Satya Narayana Nelluri Associate Professor
Caitlin Padasak
Business Services Senior Professional
Hugh Parker Assistant Professor
Kiana Perry
Academic Services Entry Professional
Laura Peters Senior Instructor
Pamela Peterson Professor
Robert Pinter HR Senior Professional
Jonathan Port Professor
Ann Poteet Instructor
Brett Powers
Research Services Entry Professional
Andrew Prouse Assistant Professor
Robert Quaife
Professor - Clinical Practice, Endowed Chair
Raymundo Quintana Quezada
Assistant Professor
David Raymer Assistant Professor
Karen Ream Assistant Professor
Caroline Reges
Research Services Professional
Doron Regev
Research Services Entry Professional
Alastair Robertson
Senior Research Associate
Emma Robinson Post-Doctoral Fellow
Robert Rogers Associate Professor
Rachel Rosenberg
Research Services Professional
Michael Rosenberg Assistant Professor
Ava Russell
Academic Services Program Manager
Katherine Sabin Instructor
Syed Rafay Sabzwari Assistant Professor
Alexandra Sassano
Research Services Senior Professional
Laura Scherer Associate Professor
Kyle Schtul
Research Services Senior Professional
Gregory Schwartz Professor
Logan Scott
Research Services Entry Professional
Steven Simon Assistant Professor
Dobromir Slavov
Research Services Entry Professional
Seth Snell
Research Services Senior Professional
Kunhua Song Associate Professor
Genevieve Sparagna Associate Professor
Patrice Spurck Senior Instructor
Brian Stauffer Principal Investigator
Chad Stoltz Assistant Professor
Carmen Sucharov Professor
Emmett Suckow
Research Services Entry Professional
Mallory Swirka Instructor
Michael Szarek Professor
Celene Tan Instructor
Matthew Taylor Professor
Charles Tharp Assistant Professor
Drew Theuerkauf Instructor
Joshua Travers Post-Doctoral Fellow
Alexis Tumolo Assistant Professor
Wendy Tzou Associate Professor
Ronald Vagnozzi Assistant Professor
Javier Valle Assistant Professor Adjunct
Jessica Wagner
Research Services Entry Professional
Stephen Waldo Associate Professor
Lori Walker Associate Professor
Laura Walker
Academic Services Program Manager
Jason West Assistant Professor
Eugene Wolfel Professor
Kathleen Woulfe Assistant Professor
Zhen Zhang
Research Services Entry Professional
Matthew Zipse Associate Professor
Norma Zwiacher Senior Instructor

Division of Endocrinology, Metabolism & Diabetes

Bryan Haugen, MD | Division Head



Bryan Haugen, MD

Our division is dedicated to improving overall health and well-being through the prevention, diagnosis, treatment and cure of diabetes, obesity, metabolic and endocrine disorders.

This year, the Division of Endocrinology, Metabolism and Diabetes expanded our Diabetes Home and Remote Care (DHRC) program. The program is run by physicians and diabetes educators and helps patients avoid the necessity of continual clinic visits. **Helen Lawler**, MD, associate professor of medicine, is the medical director of the DHRC, overseeing medical decisions for the patients enrolled in this program.

Patients are seen in person initially, after which they have remote follow-up visits for review of their glucose monitors and pumps. With more than 300 patients, the program has proven to be an excellent way to expand diabetes care into rural communities.

Integrated Transgender Program

Micol Rothman, MD, professor of medicine, leads the Colorado Health Integrated Transgender Program. **Sean Iwamoto**, MD, assistant professor of medicine, is conducting research on the cardiovascular outcomes of gender-affirming medical therapy. Together, they run this innovative clinical and research program that helps transgender and gender-diverse adults achieve their personal health goals. **Tyler Strickland**, MPAS, MPH, an advanced practice provider, is the newest addition to this team.

The program features a comprehensive clinic where patients are seen by specialists in endocrinology, general internal medicine, psychiatry and surgery. A range of services, including gender-affirming hormone therapy, primary medical care, mental health care, sexual health and STI screening and surgical and dermatologic care are provided.

Multidisciplinary Program in Thyroid Nodule and Thyroid Cancer Care

Our Multidisciplinary Program in Thyroid Nodule and Thyroid Cancer Care sees patients with potentially cancerous thyroid nodules. The program has four endocrinologists, five surgeons and an advanced practice provider with expertise in this area.

A joint clinic between the Divisions of Medical Oncology and Endocrinology provides care for patients with advanced thyroid cancer. Patients who need systemic therapy or consideration for clinical trials are seen in this unique venue.

New Diagnostic Approaches

Thyroid Hormone Dosing Calculator

Nikita Pozdeyev, MD, assistant professor of biomedical informatics, with a secondary appointment in our division has developed a unique ‘thyroid hormone dosing calculator.’ Compared to traditional weight-based dosing, this tool that includes unique patient-centered measurements has increased the accuracy of thyroid hormone dosing over twofold. Members of the division are leading a multi-center study to assess how well this smartphone or computer-based calculation performs in real-world settings.

Artificial Intelligence

Thyroid nodules affect as many as 60 percent of women over

50. Determining which nodules may be cancerous and should be biopsied is unclear. Dr. Pozdeyev has begun using a combination of artificial intelligence and a genetic risk score to identify nodules that do not require a biopsy. If successful, this tool could prevent unnecessary workup or surgery in hundreds of thousands of patients across the nation.

qCT Bone Density Research Tool

Christine Swanson, MD, MCR, associate professor of medicine, focuses on metabolic bone disorders. She is particularly interested in understanding how poor sleep, such as in night shift workers, may affect bone health. Dr. Swanson has put together one of the only quantitative CT bone density machines within a 1000-mile radius to examine bone quality. Although still a research tool, the device holds great potential to identify those at highest risk for fractures.

eConsults Program

Michael McDermott, MD, professor of medicine and practice director, has spearheaded the eConsults program together with **Dave Saxon**, MD, assistant professor of medicine and division chief at the VA Medical Center. The division has performed almost 3,000 eConsults, (among the highest of any division or department at CU) and has helped to streamline consultative care for patients and referring primary care colleagues.

New Faculty

Palak Choksi, MD, associate professor of medicine, joined us from the University of Michigan. She specializes in transplant endocrinology and is leading a program to not only optimize diabetes care, but also general endocrine care for patients who undergo transplants. Dr. Choksi plans to begin consultation in the transplant clinic starting with Nephrology and ultimately expanding to heart and lung.

Miguel Lanaspa, DMV, PhD, associate professor of medicine, joined us from the Oregon Health & Science University. Dr. Lanaspa is a translational researcher whose work focuses on obesity and the metabolic syndrome, with specific focus on vasopressin, high-fructose corn syrup and nucleotide synthesis. He is also working on small molecule development as novel drugs to target metabolic syndrome and obesity.



Kimberley Bruce, PhD



Paul MacLean, PhD



Danielle Ostendorf, PhD, MS

Research Highlights

Kimberley Bruce, PhD, assistant professor of medicine, was awarded an R01 for her work in targeting microglial lipoprotein lipase in Alzheimer's disease.

Paul MacLean, PhD, professor of medicine and pathology, was awarded an R01 to study novel dietary interventions for reducing obesity-associated breast cancer.

Bryan Bergman, PhD, professor of medicine, was awarded an R01 to study effects of aging and exercise training on intermuscular adipose tissue in MoTrPAC.

Danielle Ostendorf, PhD, MS, assistant professor of medicine, was awarded a K01 for her work with theory-based physical activity intervention. Dr. Ostendorf is one of our newest junior faculty.



Integrated Transgender Program Providers



Fellows' Wellness Day at the Botanical Gardens



Boris Draznin, MD, PhD

Innovation in Education

Endocrinology, Diabetes and Metabolism Fellowship Program

With four fellows per year, our Endocrinology, Diabetes and Metabolism Fellowship Program is nationally known for producing top academic endocrinologists. The fellowship trains outstanding clinicians, clinician educators and/or researchers spanning basic to translational, clinical and population research.

Specialty Fellowship Programs

Through a generous gift from Celeste Grynberg in honor of **Boris Draznin**, MD, PhD, professor of medicine, the CU Diabetes Fellowship trains primary care physicians to specialize in diabetology. The program emphasizes comprehensive and rigorous management of diabetes, its complications and its comorbidities for general practitioners.

The division is also home to a unique fellowship in thyroid cancer for endocrinologists who wish to further specialize in thyroid cancer care.

Looking ahead, we aim to develop a comprehensive Diabetes Center with cutting-edge research, clinical care and education that will complement the Barbara Davis Center for Childhood Diabetes. We are broadening our clinical work in transplant endocrinology, improving inpatient and outpatient operations to enhance patient access, and creating new programs for patient care. Finally, we are developing a multi-investigator research program to better understand differences between low-risk and high-risk endocrine cancers.

Faculty Highlights

Jane Reusch, MD, professor of medicine, is the recipient of the Albert Reynold Award for Mentorship from the American Diabetes Association and an Endocrine Society Outstanding Mentor Award from The Endocrine Society.

Bryan Haugen, MD, professor of medicine and division head, received the Scholarly Physician Laureate Award from The Endocrine Society.

Michael McDermott, MD, professor of medicine, was named a Distinguished Physician in the School of Medicine. He is one of only four physicians named for this honor.

Members of the Division of Endocrinology, Metabolism & Diabetes



Whitney Adair Senior Instructor
Ana Andres Hernando Research Associate
Rebecca Aragon Admin Assistant III
Gretchen Arndt Instructor
Jena Baertschi Associate Professor
Mohsen Bahmani Kashkouli
Research Services Senior Professional
Chelsea Baker Senior Instructor
Tapahsama Banerjee
Research Services Senior Professional
Linda Barbour Professor
Leslie Bauer Instructor
Bryan Bergman Professor
Audrey Bergouignan Assistant Professor
Daniel Bessesen Professor
Arpi Bocchieriyan
Research Services Senior Professional
Sophia Bowen
Research Services Entry Professional
Matthew Breit Graduate Student
Hannah Brown Instructor
Kimberley Bruce Associate Professor
Carla Burkard
Business Services Program Director
Ann Caldwell Assistant Professor
Jacob Calhoun Research Services Professional
Warren Capell Associate Clinical Professor
Victoria Catenacci Associate Professor
Yuzhu Cheng Graduate Student
Palak Choksi Associate Professor
Ethan Clark
Research Services Senior Professional
Svitlana Crawley Instructor
Seth Creasy Assistant Professor
Arely Diaz Graduate Student
Boris Draznin Clinical Professor
Robert Eckel Professor Emeritus
Karen Elmquist Instructor
Arwa Elsheikh Assistant Professor
Caitlin Estlow HR Senior Professional
Mark Ezpeleta Postdoctoral Fellow
James Falko Clinical Professor
Lauren Fishbein Associate Professor
Amanda Garfield
Research Services Professional
Amanuail Gebregzabheir
Research Services Professional
Joanna Gibbs Instructor
Megan Griff Instructor
Aanchal Gupta
Research Services Entry Professional
Arthur Gutierrez-Hartmann
Professor Emeritus
Bryan Haugen Professor -Division Head
R. Hawkins Senior Instructor
Melissa Henckel
Research Services Professional
Aimee Herbert Instructor
Teri Hernandez Professor
Janine Higgins Professor
Tessa Holmstoen
Research Services Entry Professional
Kathryn Horwitz Professor Emeritus
Michelle Huang Instructor
Nicholas Hulett Graduate Student
Sara Hull Research Services Professional
Claire Ingram Instructor
Sean Iwamoto Assistant Professor
Matthew Jackman Senior Instructor
Thomas Jensen Assistant Professor
Christopher Johnson
Research Services Professional
Ginger Assistant Research Services Professional
Amy Keller Assistant Professor
Meghan Kellett Graduate Student
Courtney King Research Services Professional
Katja Kiseljak-Vassiliades
Associate Professor
Leslie Knaub
Research Services Program Manager
Katrina Koc
Research Services Senior Professional
Lisa Kosmiski Associate Professor
Amanda La Greca Assistant Professor
Miguel Lanaspa Garcia Associate Professor
Helen Lawler Associate Professor
Andrew Libby Postdoctoral Fellow
Mark Lindsay Senior Instructor
Cecilia Low Wang Professor
Paul MacLean Professor
Erin Mann
Research Services Senior Professional
Janel Martinez Research Services Professional
Sarah Mayson Associate Professor
Michael McDermott Professor
Colleen McKenna Postdoctoral Fellow
Edward Melanson Professor
Erin Meyerhoff Senior Instructor
Breaunna Norris
Research Services Professional
Rachel Nwogo
Research Services Entry Professional
Dean Oldham Research Services Professional
Alyssa Olenick Postdoctoral Fellow
Carmen Ortega-Santos
Postdoctoral Fellow
Danielle Ostendorf Assistant Professor
Shelby Panter
Research Services Senior Professional
Rocio Pereira Associate Professor
Leigh Perreault Clinical Associate Professor
Ana Pinto Postdoctoral Fellow
Garrett Potter
Research Services Entry Professional
Nikita Pozdeyev Assistant Professor
Subbiah Pugazhenthi Research Professor
Umarani Pugazhenthi
Research Services Senior Professional
David Ramirez Postdoctoral Fellow
Neda Rasouli Professor
Tania Reis Associate Professor
Jane Reusch Professor
Julia Rifkin Associate Professor
Paul Roberson Postdoctoral Fellow
Micol Rothman Professor
Darleen Sandoval Assistant Professor
Inigo San Millan Assistant Professor
Virginia Sarapura Professor
David Saxon Assistant Professor
Rebecca Scalzo Assistant Professor
Irene Schauer Clinical Professor
Olivia Schmidt Business Services Professional
Jill Schramm Assistant Professor
Rebecca Schweppe Professor
Stacey Seggelke Assistant Professor
Vibha Sharma Research Associate
Vatsala Singh
Research Services Senior Professional
Claudia Solt Research Services Professional
Tyler Stepaniak
Research Services Entry Professional
Kristin Stockman Instructor
Tyler Strickland Instructor
Christine Swanson Associate Professor
Elizabeth Thomas Assistant Professor
Elizabeth Tupta Senior Instructor
Christie Turin More Assistant Professor
Alpna Tyagi Assistant Research Professor
Charis Uhlson
Research Services Senior Professional
Jennifer Vinh Instructor
Lucy Volino
Research Services Entry Professional
Jill Wagoner Instructor
Caroline Whitaker
Academic Services Professional
Margaret Wierman Professor
Simona Zarini Senior Instructor
Karin Zemski Berry Senior Instructor
Alex Zolnir-Groshong
Research Services Senior Professional

Division of Gastroenterology & Hepatology

Steven Edmundowicz, MD, MASGE | Interim Director



Mihir Wagh, MD, and Christie Tronick, RN



Steven Edmundowicz, MD



Sean Colgan, PhD

The Division of Gastroenterology and Hepatology has seen a steady growth in clinical, research and educational activities. Under the leadership of **Steven Edmundowicz**, MD, interim division director and professor of medicine, our specialists oversee a wide variety of patients in the areas of hepatology and gastroenterology. We are proud of our international reputation in interventional endoscopy, esophageal diseases, transplant hepatology and mucosal immunology.

Advancing Clinical Care

Interventional Endoscopy Program

The University of Colorado Interventional Endoscopy team excels in the management of benign and malignant pancreatic disorders, gallbladder and bile duct diseases, cancers and precancerous lesions of the GI tract.

Our clinical service team includes seven interventional gastroenterologists who perform procedures in facilities equipped with the most advanced medical technology. The program focuses on minimally invasive and organ-sparing treatment options that are effective and safe.

Our third-space endoscopy program continues to expand and provide endoscopic treatment options such as POEM, G-POEM and endoscopic submucosal dissection (ESD) for patients with motility disorders and precancerous/cancerous lesions within the GI tract.

The program is actively involved in clinical and translational research in endoscopic techniques and boasts a state-of-the-art laboratory where preclinical testing in developmental endoscopy and minimally invasive endoscopic surgery is performed. It also hosts several annual continuing medical education programs, allowing for specialists in Colorado to learn from our international experts in endoscopy.

Expanding our Footprint

In partnership with UCHealth, we continue to expand our footprint within the Denver Metro area (Cherry Creek Hospital and Highlands Ranch Hospital) with plans for further expansion within the state of Colorado.

Our transplant hepatology team, led by **James Burton**, MD, professor of medicine, consists of nine transplant hepatologists, seven advanced practice providers and a team of nurses and coordinators. The program is among the busiest in the nation, completing 130+ liver transplants per year. The living donor program has the largest number of altruistic donors in the United States for pediatric recipients and underserved adults. The group is also actively involved in clinical research trials for non-alcoholic fatty liver disease (NASH) and autoimmune liver diseases, including autoimmune hepatitis, primary biliary cholangitis and primary sclerosing cholangitis.

The Hepatology Clinic offers a multidisciplinary NASH clinic with endocrinology, and, in response to the alcohol epidemic, will start an alcohol liver disease clinic this summer in collaboration with addiction medicine.

Esophageal and Gastric Center of Excellence

The establishment of the Katy O. and Paul M. Rady Esophageal and Gastric Center of Excellence is among the most exciting developments in the division this year. **Sachin Wani**, MD, professor of medicine and associate medical director of the division, will serve as the inaugural Katy O. and Paul M. Rady Endowed Chair in Esophageal Cancer Research and as executive director of the Center of Excellence.

Made possible through the generosity of the Rady family, the center will improve the screening, diagnosis, surveillance and management of precancerous and cancerous lesions in the esophagus and stomach. A key goal of the center is to make screening easier to access by avoiding sedated endoscopy, such as by using point of care clinic-based tests for Barrett's esophagus. Translational research such as identifying patients at the greatest risk of progression to cancer using risk stratification tools and artificial intelligence programs will also be a key area of emphasis.

Inflammatory Bowel Disease

Our Inflammatory Bowel Disease Program, headed by **Mark Gerich**, MD, associate professor of medicine, has experienced significant growth. In response, a new center of excellence in inflammatory bowel disease care at the University of Colorado Crohn's and Colitis Center was launched. In addition to three new faculty who focus on IBD, a weekly multidisciplinary conference for complex IBD cases, an inpatient IBD service and a dedicated IBD fellowship are now offered.

Innovation in Research

Crohn's Disease and Ulcerative Colitis

Under the guidance of **Sean Colgan**, PhD, associate interim director for research, our division has continued to innovate in Crohn's disease and ulcerative colitis. In the past year, we have recruited **Ian Cartwright**, PhD, assistant professor of medicine, and **Arianne Theiss**, PhD, associate professor of medicine, both of whom now oversee large grants investigating mechanisms of inflammatory bowel disease.



The CU Anschutz medical team (and spouses) and the Radys at a dinner gathering in Colorado. Pictured from left: Cristina Cenciarelli, PhD; Katy Rady; Paul Rady; Madeleine Kane, MD, PhD; Chris Wing; Richard Schulick, MD, MBA; Sachin Wani, MD; and Anuja Buch (Wani), DDS.

Liver Immunology Program

The Liver Immunology Program complements our clinical program in liver transplantation. **Prashanth Francis**, MD, assistant professor of medicine, is working on an exceptionally novel project in the laboratory of **Terry Fry**, MD, professor of pediatrics, targeting autoimmunity using a CAR-T cell approach. His work takes advantage of cutting-edge tools in cancer therapies to address issues of autoimmunity in the liver, an approach that has not been developed outside the University of Colorado.



Cristina Cenciarelli, PhD; Richard Schulick, MD; Sachin Wani, MD; Anuja Buch (Wani), DDS; Palak Choksi; and Vineet Chopra, MD



Fellows with Kelli DeLay, MD. Timothy Yen, MD; Elijah Mun, MD; Eric Swei, MD; Kelli DeLay, MD; Jonathan Rice, MD; Paul Hobbs, MD

Research Training/ Mentorship for Junior Faculty

We have taken an active role in research training and mentorship for our junior faculty, and have been successful in obtaining multiple funding sources. Our division boasts a broad portfolio of grants from multiple funding sources, including the National Institutes of Health, Veterans Administration and multiple foundations such as the Juvenile Diabetes Research Fund and Crohn's and Colitis Foundation.

Advances in Medical Education

Gastroenterology Fellowship Program

Training for fellows in the Gastroenterology Fellowship Program is headed by **Paul Menard-Katcher**, MD, associate professor of medicine, and **Larissa Muething**, MD, assistant professor of medicine. The three-year training program includes comprehensive training in gastroenterology and hepatology with dedicated experiences in transplant hepatology, therapeutic endoscopy, inflammatory bowel diseases, bariatrics and hereditary colon cancer, among others. There is an emphasis on scholarship, with fellows taking part in a variety of research endeavors, including collaborations with the division's GI outcomes research group.

Two of our current 3rd-year fellows: **John Haydek**, MD, and **Kathleen Yan**, MD, have obtained advanced degrees in research methodology. The program also offers 4th-year fellowships in transplant hepatology and therapeutic endoscopy. We have made significant efforts to improve diversity and inclusivity within our fellowship program, including bias-reduction training for faculty and trainees, holistic application review and targeted recruitment.



Jennifer Christie, MD, FASGE, AGAF

New Division Head

Jennifer Christie, MD, FASGE, AGAF, will serve as the head of the Division of Gastroenterology and Hepatology, effective September 16, 2023. Dr. Christie is a nationally recognized physician scientist and will serve as president of the American Society of Gastrointestinal Endoscopy (ASGE), one of the leading national professional organizations in GI this year. Under her leadership, our division will continue to enhance clinical care, research and education while cultivating a divisional culture of faculty development, professional wellness and resilience.

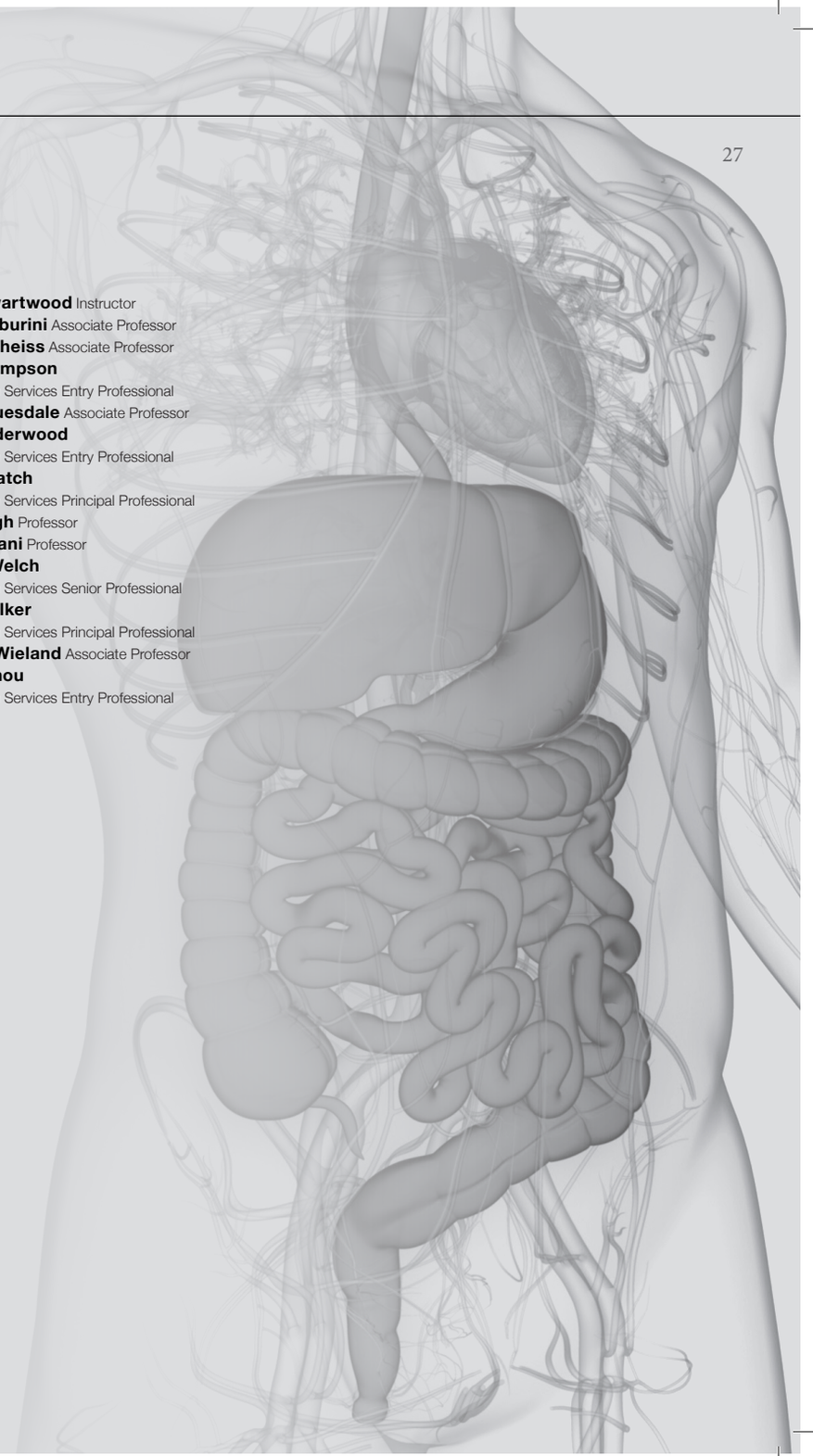
Members of the Division of Gastroenterology & Hepatology

Waseem Ahmed Assistant Professor
Kibrom Alula Post-Doctoral Fellow
Augustin Attwell Associate Professor
Gregory Austin Professor
Robert Belfon Research Assistant
Sandra Boimbo
Research Services Program Director
Steven Bono
Finance and Accounting Senior Professional
Catelyn Booher
Research Services Entry Professional
Catherine Brady Instructor
Amy Brumenschenkel Senior Instructor
Matthew Burchill Assistant Professor
James Burton Professor
Rosemary Callahan
Research Services Entry Professional
Keanna Capener
Research Services Entry Professional
Lynzie Carter
Business Services Entry Professional
Benjamin Cassell Assistant Professor
Barbara Caufield
Academic Services Senior Professional
Lyssa Chacko
Associate Professor of Clinical Practice
Debbie Cheng Assistant Professor
Kristie Click
Business Services Program Manager
Benjamin Click Assistant Professor
Sean Colgan Professor & Endowed Chair
Katelyn Cookson Instructor
Jacob Countess
Research Services Senior Professional
Colette Crane Instructor
Ingeborg Cuba Research Services Professional
Jennifer Czwornog Assistant Professor
Alexa DeBord
Research Services Principal Professional
Kelli DeLay Assistant Professor
Kay Denler Division Administrator
Destiny DeNicola Research Assistant
Katherine Dickerman Instructor
Thu Doan Research Assistant
Alexander Dowdell Post-Doctoral Fellow
Anna Duloy Assistant Professor
Steven Edmundowicz
Professor & Division Head

Brooke Feight
Research Services Entry Professional
Blair Fennimore Associate Professor
Megan Ferguson
Research Services Entry Professional
Lisa Forman Professor
Tadg Forward
Research Services Entry Professional
Ryan Fox Instructor
Mathew Francis Instructor
Jazmyne Gallegos
Research Services Professional
Mark Gerich Associate Professor
Christian Glenn PA-C, Instructor
Michelle Gruver
Business Services Professional
Mayra Guerrero
Research Services Entry Professional
Amitha Gumidyala Instructor
Samantha Guneratne
Research Services Entry Professional
Hazem Hammad Associate Professor
Hill Harris Assistant Clinical Professor
Parsa Haque Research Assistant
Brittney Henderson Instructor
Julie Heller Assistant Professor
Paul Hobbs Senior Instructor
Whitney Jackson Assistant Professor
Blake Jones Assistant Professor
Avash Kalra Assistant Professor
Uma Kantheti Research Assistant
Daniel Kao Assistant Professor
Jordan Karlitz Clinical Professor
Don Kirkpatrick
Associate Professor of Clinical Practice
Samuel Koch
Research Services Entry Professional
Michael Kriss Associate Professor
Ashley Lane Assistant Professor
Brittany LeBere
Research Services Entry Professional
Joseph Lee Instructor
Elizabeth Magnan
Research Services Professional
Catherine Martin Instructor
Bharat Maraj Assistant Professor
Alvaro Martinez Camacho
Associate Professor

Venessa Mazur Instructor
Stephanie McDowell Instructor
Matthew McLean
Business Services Entry Professional
Jordi Melton Post-doc
Paul Menard-Katcher Associate Professor
John Mengshol Senior Instructor
Holly Milano Research Services Professional
Emily Milligan Instructor
Gianna Morales
Research Services Principal Professional
Larissa Muething Assistant Professor
Elijah Mun Assistant Professor
Jacqueline Nelson Instructor
Tram Nguyen
Research Services Senior Professional
John Paul Norvell Associate Professor
Meghan O'Meara Instructor
Joseph Onyiah Associate Professor
Alexis Oonk Instructor
Alfredo Ornelas Sanchez
Post-Doctoral Fellow
Sarit Pal PostDoc
Swati Patel Associate Professor
Fernanda Pessorrusso
Research Services Professional
Lindsay Pratt PA-C
Robert Reveille Associate Professor
Aryana Rasti Research Services Professional
Nipun Reddy Associate Professor
Jonathan Rice Assistant Professor
Sarah Safadi Senior Instructor
Rachel Schaefer
Research Services Professional
Frank Scott Associate Professor
Jessica Serbus Business Services Professional
Kristy Severson Instructor
Raj Shah Professor
Jamie Shirley Post-Doctoral Fellow
Neetigyata Pratap Singh
Research Services Entry Professional
Shawn Smith
Research Services Senior Professional
Andrew Spears Instructor
Charles Stasa
Research Services Entry Professional
Calen Steiner Assistant Professor
Shelby Sullivan Associate Professor

Sheila Swartwood Instructor
Beth Tamburini Associate Professor
Arianne Theiss Associate Professor
Noah Thompson
Research Services Entry Professional
Aimee Truesdale Associate Professor
Lucia Underwood
Research Services Entry Professional
Sarah Usatch
Research Services Principal Professional
Mihir Wagh Professor
Sachin Wani Professor
Nichole Welch
Research Services Senior Professional
Jillian Welker
Research Services Principal Professional
Amanda Wieland Associate Professor
Liheng Zhou
Research Services Entry Professional



Division of General Internal Medicine

Mark Earnest, MD, PhD, FACP | Division Head



Mark Earnest, MD, PhD, FACP

Established in 1977, the Division of General Internal Medicine is among the first general internal medicine divisions in the United States. Today, we remain a national leader in patient care, medical education and health services research.

Supported by a generous gift from benefactors Ed and Paula Bozarth, the division launched the Bozarth Primary Care Initiative, a project to inform the practice of general ambulatory medicine in the modern era.

Even prior to the COVID-19 pandemic, patients were getting more and more of their care outside of traditional office visits. Today, patients are essentially in contact with clinicians around the clock and expect rapid responses. In turn, our work has changed a great deal, creating an opportunity to evaluate newer care models.

The division is now testing different schedule templates that build in time during the day to complete asynchronous work. In addition, we have increased ancillary staffing, including nurses, care managers, pharmacists, registered dietitians and behavioral health specialists. We have also added more advanced practice providers and physicians. Importantly, we are creating teams where physicians, medical assistants and nurses work together to answer patients' queries.

The division has always had a strategic plan to increase the percentage of patient care that took place virtually. When the pandemic hit, we went from one or two percent to 90 percent virtually overnight. As of winter 2022, about 20 percent of our visits remain virtual.

Preventive Intervention

We believe in proactively caring for our patients. In essence, we take care of our patients continually, often without their awareness. This includes scouring the electronic records to see who is due for preventive services, and identifying individuals whose underlying medical conditions may be poorly controlled. We actively reach out to engage these patients and to implement the appropriate interventions to get their condition under control.

Women's Integrated Services and Health

The Women's Integrated Services and Health (WISH) clinic is a novel concierge-style approach to health services for women that provides health screening evaluation, primary care, outpatient gynecological care and coordination of specialty care. Since introduction, WISH has seen tremendous growth and is now available at our Lone Tree location.

Palliative Care Medicine

Our division is home to one of the country's premier palliative care programs, which is a tremendous asset in caring for medically complex, elderly patients. The University of Colorado Hospital Palliative Care Program is one of only 49 programs in the country to earn the Joint Commission's Gold Seal of Approval.

Clinical Training

Longitudinal Integrated Clerkship

With the new model of clinical training for medical students known as a longitudinal integrated clerkship (LIC), a third of the medical school class begins their training in our clinics. The LIC moves students out of the hospital

and into the outpatient setting in their first year of medical school, allowing them to interact with patients in our clinics and follow them for extended durations.

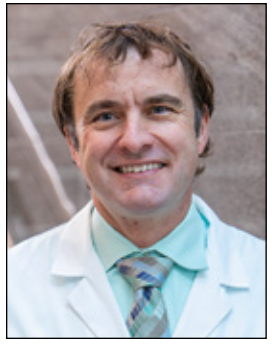
Faculty Recruitment and Development

In 2020, our division received a gift to create the Sissel Family Endowed Distinguished Clinician Chair in the Division of General Internal Medicine. This fund was made possible with a generous gift from George and Mary Sissel, longstanding philanthropic partners of the University of Colorado, who were grateful for the patient-centered care they received at the CU Anschutz Medical Campus.

The Sissel Family Endowed Distinguished Clinician Chair will provide flexible resources to the Division of General Internal Medicine to advance the teaching and delivery of world-class care. This thoughtful investment will support the profession development of select early-career faculty fellows to advance their growth as outstanding educators and clinicians. **Ronald Colson**, MD, associate professor of internal medicine, has been named the inaugural Sissel Family Endowed Distinguished Clinician Chair.


Ronald Colson, MD


Stacy Fischer, MD


Matthew DeCamp, MD, PhD


Christine Baugh, PhD, MPH, MSPH


Yoni Ashar, PhD

Research

The division has witnessed remarkable growth in the number of grants submitted and extramural funding dollars. Our faculty are now funded in areas including palliative care, ethics and policy, chronic pain, substance use disorders, cardiovascular disease prevention, health disparities and health equity, to name just a few.

Palliative Care

Stacy Fischer, MD, associate professor of medicine, received an NIH RO1 award to look at the use of psilocybin in end-of-life care. It will be one of the first trials of this type.

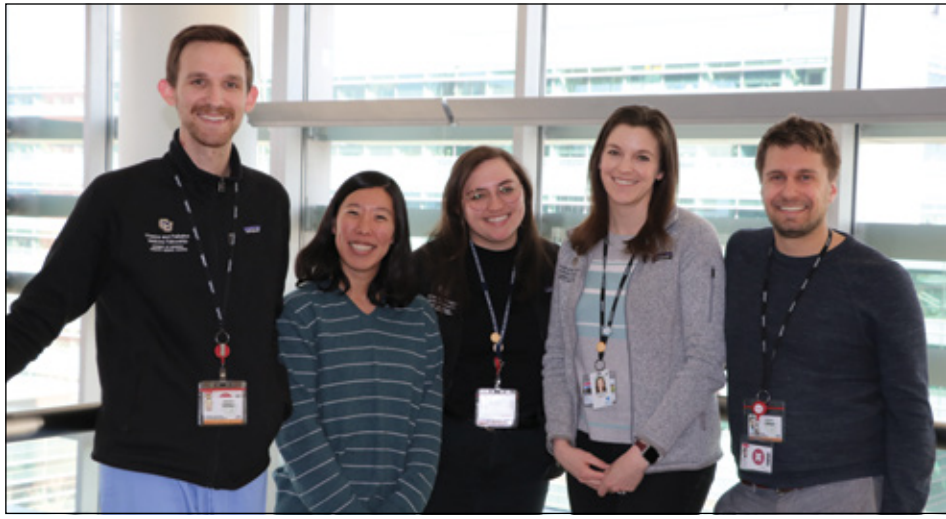
Ethics and Policy

Matthew DeCamp, MD, PhD, associate professor of medicine, recently garnered a multi-million-dollar NIH grant to study ethics in artificial intelligence.

Christine Baugh, PhD, MPH, MSPH, assistant professor of medicine, a national expert on policy and economics related to head injury, particularly in college and professional sports, presented to the National Academy of Science in May 2022.

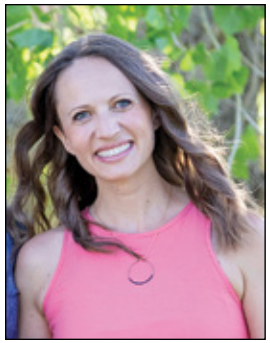
Pain Reprocessing Therapy

Yoni Ashar, PhD, assistant professor of medicine, is studying a novel technique called pain reprocessing therapy that has shown great promise in terms of reducing or even eliminating the need for opioids in people with chronic pain.


AY23 Palliative Care Fellows (left to right): Travis Rinderle, DO; Michelle Paek, MD; Kayley Swope, MD; Erin Vipler, MD; Jason Lambden, MD


Judith Regensteiner, PhD


Amy Huebschmann, MD


Tyra Fainstad, MD


Joshua Barocas, MD

Career Development Programs

Judith Regensteiner, PhD, professor of medicine and assistant division head for research, has had continuous funding for two career development programs, one through the National Institutes of Health and the other through the Doris Duke Charitable Foundation.

Interdisciplinary Perspectives

Amy Huebschmann, MD, associate professor of medicine, was recently awarded the University of Colorado Collaborator Award, recognizing her ability to bring interdisciplinary perspectives together.

Improving Mental Health Among Trainees

Tyra Fainstad, MD, associate professor of medicine, and her colleague **Adrienne Mann**, MD, Division of Hospital Medicine, have devised a way to conduct professional virtual coaching to large groups of trainees. The findings of their intervention, published in JAMA Network Open, demonstrated significant changes in burnout rates, confidence and self-efficacy. The team is set to expand this trial nationally.

Social Determinants of Health and Mathematical Modeling

Joshua Barocas, MD, associate professor of medicine, has created highly predictive mathematical models, particularly in the prevalence of substance use disorder and infectious disease transmission related to substance use disorder. He is also the medical director of a divisional program aimed to help individuals transition out of the penal system.

Ready For The Future

It's an exciting time to be in general internal medicine. I'm hopeful that our innovations in our primary care practices will serve as a national exemplar for how to provide care in a way that is fulfilling and sustainable for clinicians. We have the infrastructure and leadership in place for our research programs to grow substantially. Our educators are training and supporting the next generation of clinicians and scientists. We have some great years ahead of us.

Master's Program in Palliative Care

Five years ago, we developed the Master's Program in Palliative Care for those already established in their careers as physicians or advanced practice providers who want to transition their career in palliative care. It's a hybrid program and has grown rapidly, enabling individuals to do clinical training in place, without relocating.

Palliative Care Fellowship Program

Over the past two years, we partnered with the Accreditation Council for Graduate Medical Education to use the master's program to create a novel, hybrid fellowship model for physicians. It is the first of its kind in the world. Fellows have remote supervision of their clinical work and the program has been highly successful. If projections remain accurate, we will be training 24–30 fellows annually in palliative care. This is the training output of five to 10 academic medical centers and we'll be doing all of this within our division and Department of Medicine.

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Karen Peterson Instructor
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Michael Pham Instructor
Vy Pham Instructor
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Scott Pigford Assistant Clinical Professor
Talia Pindyck Clinical Instructor
Irina Pines Instructor
Anne Pizzi Clinical Instructor
Frederic Platt Clinical Professor Emeritus
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Kathleen Plummer Clinical Instructor
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Neha Reddy Assistant Professor
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Karen Richardson Clinical Instructor
Terri Richardson Clinical Instructor
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Renee Roberts Instructor
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Raymond Rossi Clinical Instructor
Mitchel Rossman Clinical Instructor
Henry Roth Clinical Instructor
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Assistant Clinical Professor
Floyd Russak Clinical Instructor
Stephen Rust Clinical Instructor
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Eric Seger Clinical Instructor
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Scott Smith Assistant Clinical Professor
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Aimee Zisner Assistant Professor

Division of Geriatric Medicine

Cari Levy, MD, PHD | Division Head



Cari Levy, MD, PhD

Our division, which includes clinicians, researchers and educators, continues to provide unparalleled geriatric care, world-class aging research and innovative educational programs in partnership with older adults and those who care for older adults

The Division of Geriatric Medicine works closely with the University of Colorado Multidisciplinary Center on Aging, a university-wide collaboration that brings together the strengths and expertise of the CU School of Medicine, School of Dental Medicine, Skaggs School of Pharmacy and Pharmaceutical Sciences, College of Nursing, School of Public Health and the Graduate School to solve some of the most complex issues in aging. In addition, the center is a resource for government, industry and community members interested in engaging with work that addresses the goal of vital aging for Colorado's older adult population.

Our division also partners with the UCHealth Seniors Clinic which treats patients aged 75 and above with multiple health conditions, and cares for aging veterans through our partnership with the Veterans Administration Medical Center. Our multidisciplinary teams at these venues include physicians, nurse practitioners, clinical pharmacists, nurses, medical assistants, patient advocacy representatives, psychologists and social workers who work closely with patients and their families to determine the appropriate care.

Programs and Initiatives

Elder Maltreatment Program

Our elder maltreatment program, called Vulnerable Elder Services, Protection, and Advocacy (VESPA) performs consultations on a range of issues around elder abuse. The second of its kind in the country, the program began in 2021 and has already had a significant impact on elder care. We expect the program to grow further when **Elizabeth Bloemen**, MD, MPH, current fellow and creator of the program, joins our faculty. Dr. Bloemen will be clinically and academically focused on issues of elder abuse.

Emergency Room Consultation Program

The Emergency Room Consultation Program will provide



Elizabeth Bloemen, MD, MPH

emergency room consultations for older adults with the goal of preventing hospitalizations. Because our providers are well versed in the complexities that come with caring for older adults with multiple illnesses, our faculty can identify remediable factors and provide additional support to this population. Teams would go to the emergency room to examine patients, assist with competency assessments, determine whether admitting a person would be in their best interest and if so, provide additional support. We'll also assist with follow-up and any needs a patient may have after hospital discharge.

Living with Dementia Program

The Living with Dementia Program is an initiative that provides support for patients with dementia and their

caregivers. The program is based on the care ecosystem model developed at University of California San Francisco. The program is expanding and will serve to raise awareness about the unique needs of these patient-caregiver dyads.

Older Adult Research Specialist Program

We developed the Older Adult Research Specialist Program, which trains older adults to become research participants or staff on research studies in elder care. We have trained two cohorts of older adults and will be hiring them to work on research studies.

New Diagnostic Approaches

Our division has embedded gait speed into our patient assessment for vital signs. When an older adult comes into the clinic, we check their vitals, and if there is anything abnormal we measure gait speed, which is directly correlated to longevity. We see this as an additional 'vital sign' in elderly patients.

Virtual Care in the Geriatric Population

During the COVID-19 pandemic, virtual care expanded to serve the needs of geriatric patients. Amazingly, we've been struck by how patients have been able to adapt, and how family members have helped their loved ones engage, often getting them connected. Overall, virtual care has worked better than any of us would have imagined.



Lauren Nicholas, PhD



The CU team meeting with the Weill Cornell/NewYork-Presbyterian's Vulnerable Elder Protection Team (VEPT), an ED/hospital-based multi-disciplinary team to address elder abuse, neglect and exploitation.

Emerging Research

Our researchers shed light on interventions that improve how we care for aging patients, including preventing disease, maintaining functional independence and improving services for nursing home residents. We have a growing group of health services researchers who are doing a variety of studies related to advanced care planning, shared decision-making, alternative models of care for older adults, elder abuse and dementia.

The division recently hired Associate Professor **Lauren Nicholas**, PhD, an economist whose research is focused on studying costs and outcomes related to dementia care using Medicare data resources.

Advancing Medical Education

Our division has a T32 grant to train researchers on aging research. Many graduates of this program join our faculty as investigators or go on to careers in aging research. We focus on teaching core geriatrics principles to medical students, residents and fellows as they rotate through the division. We also provide interdisciplinary, team-based training. Our students benefit from working in a variety of care settings, including inpatient, outpatient and community-based settings.







Shannon Randall, Training Facilitator; Training Facilitator/OARS Graduate, Lorenzo Ramirez; and Kathryn Nearing, PhD

Geriatric Medicine Clinical Fellowship

Our Geriatric Medicine Clinical Fellowship is a one-year training opportunity that offers a wide variety of clinical experiences and sufficient elective time for fellows to tailor career plans. We currently accept up to four clinical fellows per year with time shared between the University of Colorado Hospital and the VA Medical Center. Our goal is to build our pipeline, and to even get all the way down into the high school level to start exposing people to the joys of geriatric medicine.

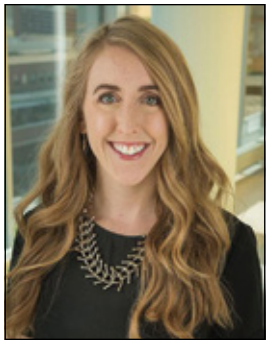
Advanced Practice Providers Training Program

In conjunction with Colorado legislation that allows advanced practice providers doing geriatric medicine to get loan repayment, we have started a program to train advanced practice providers in geriatric medicine. **Janna Hardland**, MD, assistant professor of medicine, recently submitted a grant to build this program into a model that others could use in their communities.

Connecting with Nursing Homes

Even though about 20 percent of patients from hospitals will need rehabilitation facilities or long-term nursing care, most learners have never visited a nursing home. We aim to address this disconnect and familiarize all who interface with nursing homes to understand this clinical environment. My hope is that we can get learners interested in practicing in this environment because we really do need a whole new subspecialty of post-acute care clinicians with expertise in hospital to nursing home transitions of care.

Overall, it's an exciting time for the division as we seek to share our knowledge and joy related to the care of older adults. Demography will continue to present opportunity, and our primary goal will be to be at the table engaging clinicians, researchers, educators, policymakers, patients and care partners in initiatives that improve the quality of care and quality of life for older adults.



Janna Hardland, MD

Members of the Division of Geriatric Medicine

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Teylar Adelsberger
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Caitlin Allison Instructor
Matthew Babcock Assistant Professor
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Lauren Nicholas Associate Professor
Robin Otto Research Services Professional
Joleen Sussman Assistant Professor
Rhett Turner Research Services Professional
Ryan Wendell Research Services Professional
James Westcott
Research Services Entry Professional



Division of Health Care Policy & Research

R. Mark Gritz, PhD | Division Head





R. Mark Gritz, PhD

Our division provides health services research, policy analyses and evaluations of health care innovations and interventions that increase the value of health care services. As a hub for quantitative health services research in the Department of Medicine, our focus is varied and far-reaching.

The majority of the Division of Health Care Policy and Research funding comes from the Centers for Medicare and Medicaid Services (CMS). Over the last five years, our division has increased its funding from the state, including ongoing support from the Colorado Department of Health Care Policy and Financing, Colorado Department of Public Health and Environment and Colorado Department of Human Services. For over 30 years, members of our division have supported CMS in two general areas.

Quality Improvement in Nursing Homes

The first area of focus is quality improvement in nursing homes and long-term care facilities. We have supported a long-term care survey process that includes helping CMS design, analyze and refine the approach for conducting regular surveys of nursing home and long-term care facilities.

Over the last 15 years, we have also worked with CMS to transition from a paper-based to an automated computer-based survey process. We have also helped CMS develop methods for selecting the patients that state surveyors focus on during their onsite interviews. And we have assisted CMS with developing valid, reliable and resident-centered investigatory protocols used by surveyors to examine areas of concern and determine compliance with federal regulations.

Members of our division have also worked with CMS to incorporate components of new federal regulations and guidance to assess how nursing homes are doing in response to the COVID-19 public health emergency. Specifically, we have analyzed infection prevention and control citation data to identify the most common reasons for COVID-19-related citations during the first seven months of the public health emergency. Nursing management and infection preventionists can use the results from our study to help ensure that operations, staff training and adherence monitoring efforts address areas most associated with COVID-19 infection control noncompliance.

Home Health Care Services

The second area of long-term CMS support involves post-acute home health care. Members of the division have been working to support improvement of home health care services across the United States. Our primary focus is analyzing data that come out of the Outcome and Assessment Information Set (OASIS) for all home health agencies in the U.S. In addition to supporting quality improvement efforts, these analyses support a significant component of the Home Health Quality Reporting Program that CMS runs for their five-star ratings of home health care agencies.

Most recently, we have been supporting the Home Health Value-Based Purchasing demonstration run by CMS. Every indication is that this demonstration will be converted by CMS to a permanent program next year. The focus of this work has been in two areas:

(1) providing technical assistance to home health agencies in understanding the value-based purchasing measures and interpreting their performance reports, including how to determine their value-based payment using these performance reports; and (2) providing the analysis of the OASIS data and providing reports to CMS for monitoring the implementation and performance of the home health agencies participating in the demonstration.

Improving Health and Well-Being

Over the last five years, we have increased our research and policy analysis to support state agencies in their missions to improve the health and well-being of Coloradans. This work has supported the Colorado Department of Health Care Policy and Financing, our state agency for Medicaid and Children's Health Insurance Program, providing evidence to support policy and program decisions.

Members of our division are also providing a broad range of research and policy analyses supporting the Colorado Department of Public Health and Environment and Colorado Department of Human Services. Examples of this work include data analyses to support the provision of dental services to indigenous populations and understanding the relationship between participation in the Supplemental Nutrition Assistance Program and health care experiences.

Children, Youth and Young Adults with Lived Foster Care Experiences

We are also supporting a collaboration between the Departments of Health Care Policy and Financing and Human Services focused on children, youth and young adults with lived experiences in foster care. We began this work by identifying children and youth who have experienced a first out of home placement in Colorado. We are now examining the health care cost and utilization of these children before and after foster care placement. Our analyses have identified patterns in health care cost and utilization before placement that may help target family preservation services to those most likely to enter foster care.

We are also analyzing cost and utilization patterns around the time young adults experience an age-related transition out of foster care. Findings from these analyses will support former foster care young adults making the transition from pediatric to adult health care, where many face challenges in making health care decisions.



Liza Creel, PhD



Katie Colborn, PhD, MPH/MSPH

Vision for the Future

Our division is in reinvigoration mode. A number of senior faculty have retired in the last four years and we are rebuilding from those departures. We have hired two associate professors: **Liza Creel**, PhD, who started in August 2022, is contributing to our work supporting state agencies, as well as building a program focused on hearing-related health services research; and **Katie Colborn**, PhD, MPH/MSPH who joined the division in February 2023, adds to our biostatistics expertise

Over the last five years, we have increased our research and policy analysis to support state agencies in their missions to improve the health and well-being of Coloradans.



and serves as the lead of the Biostatistics and Analytics Core in the Adult and Child Center for Outcomes Research and Delivery Science (ACCORDS).

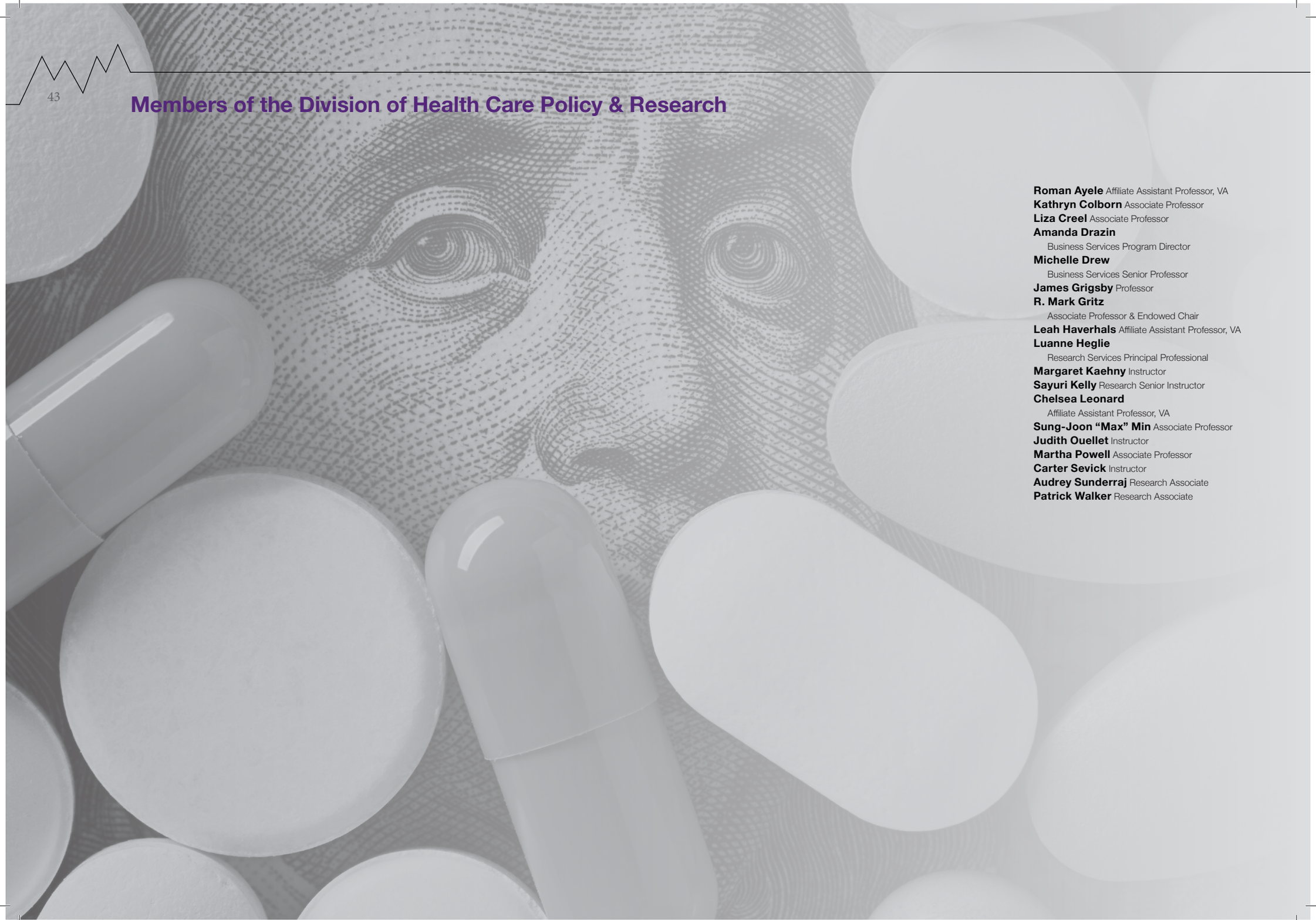
Members of our division have a long and successful history of collaborating with ACCORDS, which brings together a large group of clinical investigators and researchers from multiple disciplines to conduct health services, outcomes and implementation research.

Our work with state agencies is often done in collaboration with Eugene S. Farley Jr. Health Policy Center. The center develops and translates evidence to advance policies and integrate systems that improve whole health, equity and well-being.

In the future, we aim to continue to serve as a quantitative methods hub to support the Department of Medicine and campus in conducting innovative health services research, evaluating health care interventions and providing an evidence base for health policies.



Members of the Division of Health Care Policy & Research



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Martha Powell Associate Professor
Carter Sevick Instructor
Audrey Sunderraj Research Associate
Patrick Walker Research Associate

Division of Hematology

Craig Jordan, PhD | Division Head

Clay Smith, MD | Associate Chief of Clinical Affairs





Craig Jordan, PhD



Clay Smith, MD

The Division of Hematology sees approximately 3,000 new patients a year from Colorado and the entire Rocky Mountain region. We provide expert clinical care, and conduct basic and clinical research, all aimed at improving clinical outcomes, reducing side effects and improving quality of life for patients with blood disorders.

Innovation in Clinical Care

We are living in a remarkable time for advances in blood disorders. Among the most exciting is the development of cell and gene therapies, where researchers have advanced ways to genetically engineer blood and immune cells to treat congenital cancers and blood diseases.

These new treatments create a type of immune cell, called a 'CAR-T cell,' which functions by attacking cancer cells, leading to revolutionary care for adult patients with lymphoma and myeloma who have relapsed or failed to respond to standard therapies.

Equally as exciting are genetic-based therapies leading to improvements in sickle cell anemia and hemophilia. Such therapies may help us correct the genetic changes that cause these diseases, rather than just trying to prevent and treat the symptoms as we have traditionally done.

Checkpoint Inhibitors and BiTEs

Another innovation is in the development of new treatments called checkpoint inhibitors and BiTEs, which rev up the patients' immune systems to more effectively recognize and attack cancers.

Targeted Therapies

Advances in understanding the signals that make blood cancers grow and resist treatment has led to the development of new drugs termed 'targeted therapies' that specifically turn off the signals, leading to elimination of cancer cells.

These therapies have all led to new treatment approaches and strategies that are both more effective and less toxic than the traditional chemotherapy used for the last 40-50 years.

Collaboration

With our clinical partner, the UCHealth Blood Disorders and Cellular Therapy Center, the division has a shared mission to deliver the best possible care to patients with blood cancers and blood disorders.

Virtually every program in this partnership has been testing new therapies that are contributing to the advancement of patient care through basic and clinical research in leukemia, lymphoma, myeloma, bone marrow transplant, cellular immunotherapies and general hematology.

In addition, we are leading an effort to develop precision medicine technology using cutting-edge genomics testing, clinical data analysis and computational tools that are combined to identify new treatments, diagnostic tests, clinical decision-making criteria and clinical trial designs — all directed at finding or developing the right treatment for each individual patient.

This effort is essential to the future practice of hematology, as every person — and every cancer and blood disorder — is different. For

the first time, we can extensively characterize these differences and use artificial intelligence and other computer technologies to help translate enormous amounts of complex data into practical, day-to-day drug development processes and individualized therapies.

We anticipate that our collaboration with UCHealth, the CU Innovations Center and others will allow us to expand these efforts to other blood cancers and disease areas in coming years.

Honors and Awards

Our division was recently awarded an IMPACT grant by LLS to explore new ways to improve access and address health care disparities for persons with blood cancers who need CU Anschutz's level and quality of care, but who live in rural areas or experience other barriers to receiving this care.

Research Funding

We were awarded the prestigious Specialized Center of Research (SCOR) grant from LLS that allows us to collaborate with colleagues across campus to develop better therapies for leukemia. This project has been our single largest laboratory research endeavor and has led to new clinical trials for patients with acute myeloid leukemia and myelodysplastic syndromes.

Clinical Trials

The division conducts a wide range of clinical trials designed to create better therapies for various forms of blood cancer. Several of our faculty members gave major lectures at the American Society of Hematology meeting in 2021, including the head of our lymphoma program, **Manali Kamdar**, MD, associate professor of medicine, and **Bradley Haverkos**, MD, associate professor of medicine.

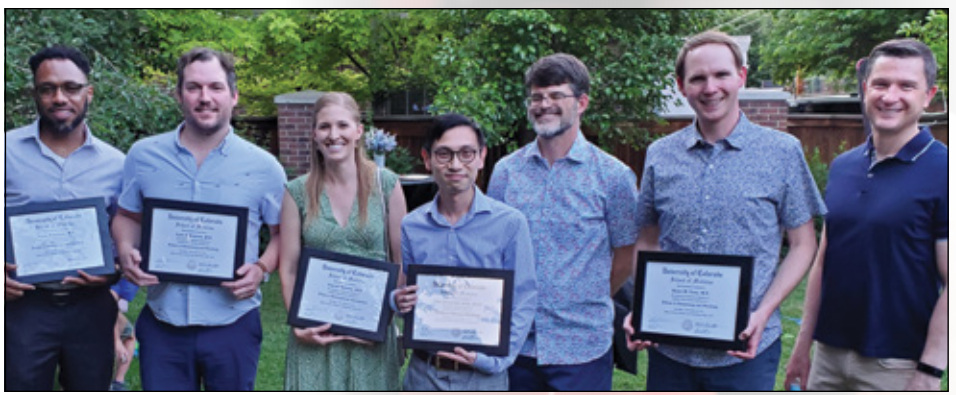
Looking ahead, the division will continue to pursue its dual mission of providing the best possible care to patients with hematologic disorders while also innovating to constantly improve therapeutic options. We are actively expanding our clinical operations to better serve our community in Colorado and the surrounding region by opening new clinics around metropolitan Denver and other parts of the state.



Manali Kamdar, MD



Bradley Haverkos, MD



June 2022 hematology-oncology fellowship graduates holding their fellowship completion certificates. From left to right: Frantz Francisque, MD; Tyler Friedrich, MD; Anna Schreiber, MD (Developmental Therapeutics); David Tsui, MD (Thoracic Onc fellow); Dan Bowles, MD (Program Director); Rob Lentz, MD; and Brandon McMahon, MD (Hematology).

Altogether, our faculty are on the leading edge of developing improved diagnostics and therapies based on the premise that we must move from traditional one-size-fits-all approaches to personalized medicine that has fewer side effects than previous generations of treatments.



Lisa Chu, MD



Ajay Major, MD, MBA

Faculty Highlights

This past year, we welcomed two new assistant professors of medicine to our team: **Lisa Chu**, MD, and **Ajay Major**, MD, MBA. Dr. Chu is building programs focused on treating bleeding and clotting disorders, both at the Anschutz Medical Campus and other UCHealth sites. She is also leading efforts to train the next generation of hematologists and other providers. Dr. Major is an expert in lymphoma and myeloma and is leading research in patient-reported outcomes. His efforts aim at collecting and analyzing patients' subjective reports of their symptoms, quality of life and response to therapies and combining these with tests such as laboratory measurements and imaging to facilitate a holistic approach to care.

Altogether, our faculty are on the leading edge of developing improved diagnostics and therapies based on the premise that we must move from traditional one-size-fits-all approaches to personalized medicine that has fewer side effects than previous generations of treatments.

Expanding Care



Glen Peterson, DNP, ACNP, RN

We are developing new approaches to improve access to cutting-edge technologies and quality of life initiatives to everyone across the Rocky Mountain region and beyond through telemedicine, virtual care and partnership with the Leukemia & Lymphoma Society (LLS) and other advocacy programs.

Our partnership continues to advance its activities at UCHealth sites, including the Highlands Ranch and Cherry Creek facilities, to bring care closer to patients who may not need the more comprehensive services offered at the CU Anschutz Campus.

Another initiative, led by **Glen Peterson**, DNP, ACNP, RN, associate professor of medicine and one of the APP leaders in the division, is developing and testing 'care at home' initiatives, including wearable devices to detect fever as early as possible. These initiatives may lead to shorter hospital stays, fewer readmissions, safer care and better outcomes for patients undergoing bone marrow transplants and complicated treatments.

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Lisa Chu Assistant Professor
Mohammad Dahleh
Business Services Program Director
Lorraine Davis Trainee
Jessica Dell-Martin
Research Services Program Manager
Lisa Dimas Business Services Professional
Lucy DiPietro
Research Services Program Manager
Alexandra Ellis
Research Services Entry Professional
Krysta Engel Assistant Professor
Jeanne Erker
Research Services Entry Professional
Erin Fahey-Harrison Instructor
Angela Falco Senior Instructor
Tracy Farrell Instructor
Allison Fike Instructor
Peter Forsberg Associate Professor
Roxanne Foster
Business Services Principal Professional
Helen French Instructor
Maura Gasparetto
Associate Professor-Research
Gemlyn George Assistant Professor
Joseph Gibson Instructor
Austin Gillen Assistant Professor
Jonathan Gutman Associate Professor
Keri Halsema Senior Instructor
Faith Harris
Research Services Principal Professional
Bradley Haverkos Associate Professor
Phuong Ho
Research Services Entry Professional
Ariel Hodara
Research Services Principal Professional
David Holmberg Instructor
Kristin Howe
Research Services Senior Professional
Hunter Hudgins
Research Services Professional
Alleson Ida Instructor
Jessica Imlach
Research Services Senior Professional
Anagha Inguva Pre Dr Trainee
Jagar Jasem Assistant Professor
Isabel John Research Services Professional
Estella Jones
Research Services Senior Professional
Jacob Joram Research Services Professional
Craig Jordan
Endowed Chair, Division Head, Professor
Manali Kamdar Associate Professor
Alana Keller Pre Dr Trainee
Heather Knowles Assistant Professor
Tori Knox-Rice Assistant Professor
David Korb Research Services Professional
Mason Kragenbring
Research Services Entry Professional
Anna Krug
Research Services Senior Professional
Fanta Kuhlman
Research Services Senior Professional
Kathleen Logan Instructor
Lucy Logan Spears Instructor
Dwight Macero Senior Instructor
Ajay Major Assistant Professor
Margaret Mazzarello Instructor
Brandon McMahon
Associate Professor & Endowed Chair
Christine McMahon Assistant Professor
Ara Metjian Associate Professor
Regan Miller Research Assistant
Taylor Mills Postdoctoral Fellow
Genevieve Moyer Assistant Professor
Gina Nay Research Services Professional
Katia Nino Research Assistant
Kelly O'Brien Senior Instructor
Daniel Page HR Principal Professional
Sarah Parzych
Research Services Entry Professional
Sweta Patel Postdoctoral Fellow
Elise Path Instructor
Caroline Pearson Instructor
Jacqueline Pelfrey
Research Services Manager
Glen Peterson Associate Professor
Rachel Petitgout
Business Services Principal Professional
Natalie Pfenning Research Services Manager
Eric Pietras
Associate Professor & Endowed Chair
Daniel Pollyea Professor & Endowed Chair
Caitlin Price
Research Services Entry Professional
Monica Ransom Research Associate
Lauren Reiman
Research Services Professional
Aritza Vanessa Rivera
Research Services Professional
Giuseppe Romano
Business Services Professional
Derek Schatz
Research Services Program Director
Wolfgang Schleicher Pre Dr Trainee
Marc Schwartz Assistant Professor
Rebeccah Sewell Instructor
Ian Shelton Research Assistant
Daniel Sherbenou Associate Professor
William Showers
Research Services Professional
Kelly Sidor Instructor
Theodore Simos Instructor
Danielle Sisler Instructor
Clayton Smith Endowed Chair, Professor
Connor Sohalski
Research Services Professional
Sarah Staggs Assistant Professor
Meghan Straubel
Research Services Senior Professional
Ashley Sutherland Instructor
Sarah Thomas Instructor
Kaylee Timlin Instructor
Hunter Tolison
Research Services Entry Professional
Alexa Tomas
Research Services Principal Professional
Rachel Treitman
Research Services Professional
Richard Ugalde Instructor
Brian Villanueva Research Services Manager
Jordan Volk Instructor
Alexandra Waddell Instructor
Zachary Walker
Research Services Principal Professional
Deng Wang
Research Services Program Manager
Kelsey Watson Instructor
Lauren Willoughby Instructor
Tracy Young
Research Services Senior Professional
Mark Althoff Postdoctoral Fellow
Kathryn Hassell Professor
Mohd Minhajuddin Associate Professor
Sally Stabler Professor & Endowed Chair
Brett Stevens Associate Professor
Jessica Zucker Senior Instructor

Division of Hospital Medicine

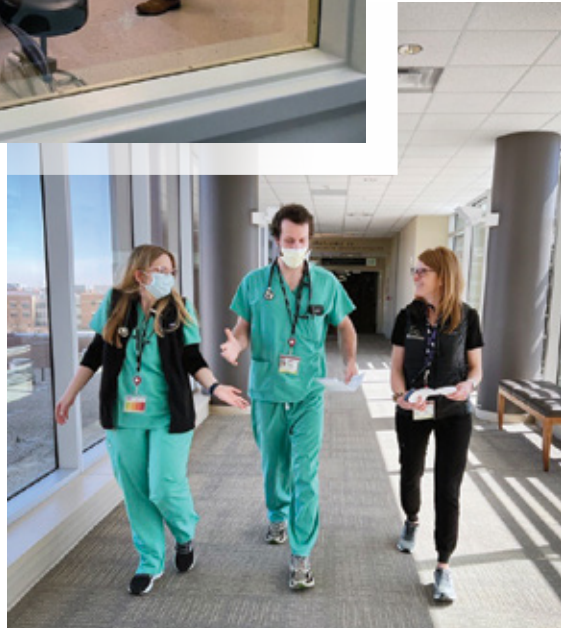
Marisha Burden, MD | Division Head



Marisha Burden, MD



Above: Advanced Practice Fellows (APFs) working on the "Simulation Experience" as a part of their curriculum focus.



Right: Hospital Medicine faculty connecting with each other while walking through the UCHealth inpatient pavilion.

The Division of Hospital Medicine has made remarkable strides in patient care, education and innovation, earning local and national recognition. In the last five years, we have doubled the number of patients we care for and pioneered novel care models. Our unwavering commitment to improving health care delivery and outcomes for all patients is what drives us forward.

The Division of Hospital Medicine's clinical operations team, led by Dimitriy Levin, MD, associate professor, is building staffing models that drive the best patient, clinician and organizational outcomes. We are developing an evidence-based clinical service structure that prioritizes outstanding patient care while promoting the wellness of our team members. Our recent publication "Toward a Medical Ecology of Attention," in the *New England Journal of Medicine,* led by **Mark Kissler**, MD, MS, assistant professor of medicine, has spurred national conversations and research efforts aimed at building optimal environments to support clinical work.

Innovation in Service Delivery

Our division is making strides in clinical innovation. Under the leadership of **Henry Kramer**, MD, assistant professor of medicine, the Medicine Procedure Service offers high-quality procedures and point-of-care ultrasound (POCUS) to inpatients and has expanded its reach to outpatient clinics and the Emergency Department.

Anna Maw, MD, MS, associate professor of medicine, is leading POCUS implementation efforts across our large team and also leads POCUS courses both locally and nationally. Meanwhile, **Susan Calcaterra**, MD, MPH/MSPH, MS, associate professor of medicine, has led the Addiction Medicine Service to transform the care of patients with substance use disorders, reducing stigma and improving outcomes through medication-assisted treatment and motivational interviewing.

Led by **Kasey Bowden**, MSN, FNP, AG-ACNP, assistant professor of medicine, our division has partnered with the Division of Medical Oncology in developing the Clinical Assessment and Rapid Evaluation (CARE) Clinic, which provides advanced urgent care and symptom management to patients undergoing cancer treatment, reducing emergency department visits by nearly 50 percent since 2019.

Dennis Gibson, MD,FACP, CEDS, is associate professor of medicine and clinical operations director for the ACUTE Center for Eating Disorders & Severe Malnutrition. The center continues to be a national leader in education, research and clinical care for patients with extreme forms of eating disorders, admitting nearly 300 patients in the last year.

Emergency Preparedness

Emergency preparedness is a critical aspect of hospital medicine. **Gaby Frank**, MD, professor of medicine, and **Jason Persoff**, MD, associate professor of medicine, have led the preparation and response to biological emergencies, including creating biocontainment units and training health care clinicians and staff for managing infectious diseases such as Ebola.

Scholarship, Research and Data

Our division's Data and Analytics team, led by **Angela Keniston**, PhD, MSPH, assistant professor of medicine, has provided critical data to guide best practices for clinical operations while advancing our academic and research programs. In just five years, this enthusiastic and dedicated team has played a vital role in the growth of our research and scholarship initiatives. The division boasts 104 publications for the last academic year.

Research Highlights

Sarah Stella, MD, associate professor of medicine and hospitalist at Denver Health, has conducted groundbreaking community-partnered research to better understand and address the unmet health needs of patients experiencing homelessness. She is the co-principal investigator on Project HOPE and the Denver Health site principal investigator for Denver's Social Impact Partnerships to Pay for Results Act (SIPPRA) Housing to Health Program.

Christine Jones, MD, MS, associate professor of medicine, is co-principal investigator on a $1.25 million VA Health Services Research & Development grant examining post-acute home health care for veterans.



Sarah Stella, MD



Christine Jones, MD, MS



Catherine Callister, MD

Advancing Education in Hospital Medicine

The division is leading important work in education with **Catherine Callister**, MD, assistant professor of medicine, at the helm. Dr. Callister has developed several innovative educational programs for medical students and residents who rotate through our services.

Advanced Practice Provider Fellowship

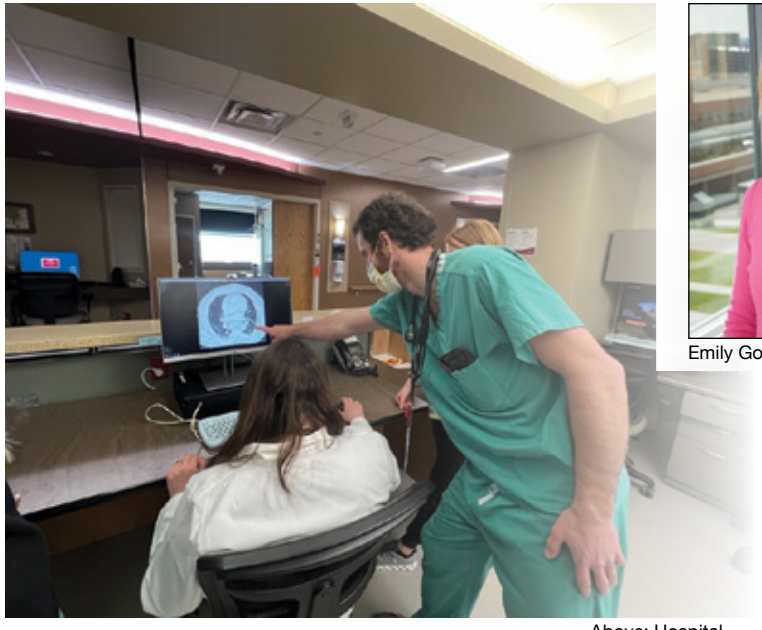
Our Advanced Practice Provider Fellowship, led by **Frances Lorenzi**, MMS, PA-C, assistant professor of medicine, and **Brian Wolfe**, MD, associate professor of medicine, is entering its third decade. We have graduated 98 fellows, 80 percent of whom stay within our health system.

Advanced Hospital Medicine Clinical Scholars Program

The Clinical Scholars Program, led by **Amiran Baduashvili**, MD, associate professor of medicine, and team trains junior faculty in Bayesian reasoning, medical literature appraisal and research methods. The program offers protected time, an extensive curriculum and dedicated mentorship for six to eight trainees annually. Another track, led by **Reem Hanna**, MD, assistant professor of medicine, offers our Global Scholars unique immersive experiences across the world and is a highly rated experience.



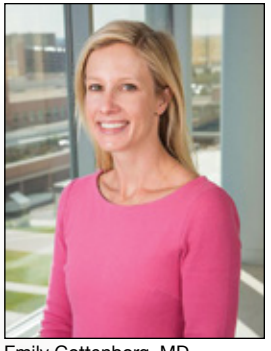
An attendee practices scanning at a Society of Hospital Medicine Point of Care Ultrasound Regional Course.





Above: Hospital Medicine faculty at the UCHealth hospital discussing a patient's scan.

Left: Catherine Callister, MD, inputting data and engaging with a patient at UCHealth.



Emily Gottenborg, MD



Julia Limes, MD



Amira Del Pino-Jones, MD

Hospitalist Training Program

The Hospitalist Training Program for internal medicine residents is the longest-running such program nationally and is led by co-directors **Emily Gottenborg**, MD, associate professor of medicine, and **Julia Limes**, MD, associate professor of medicine. Residents receive tailored clinical training to ready them for careers in hospital medicine and hospital-based subspecialties. Over 80 percent of graduates hold leadership roles and are involved in a variety of scholarly, educational and operational projects.

Diversity, Equity and Inclusion

Amira Del Pino-Jones, MD, associate professor of medicine, associate dean for Diversity, Equity, Inclusion and Justice (DEIJ) in the School of Medicine and director of DEIJ for the division, oversees DEIJ efforts. The division has published numerous papers, created a salary structure to ensure salary equity, standardized protected time for roles within the division and built a toolkit for best practices during recruitment.

Supporting Faculty Development

Maria Klimenko, MD, assistant professor of medicine, developed a hospitalist development toolkit for mentors and mentees. Through her efforts the division has focused on onboarding and visiting professor programs. Our efforts, led by Greg Misky, MD, Professor of Medicine, Li Ngov, MD, Associate Professor of Medicine, and Maria Frank, MD, Professor of Medicine, have resulted in the promotion of 12 faculty to associate professor and two faculty to professor in the past year.

Transforming Patient Quality and Safety

Anunta Virapongse, MD, MSPH, Associate Professor of Medicine, leads our efforts with an incredible team. We take great pride in our robust patient quality and safety program, which has led to improved performance metrics and creating hospitalist careers in quality and patient safety. Our Quality Action Committee has collaborated closely with our Data Dream Team to create service lines and individual clinician dashboards. We have also built unique clinical pathways to help us aim to achieve excellent care. Our division's mortality rate ranks among the top 10 percent of academic medical centers based on Vizient metrics.

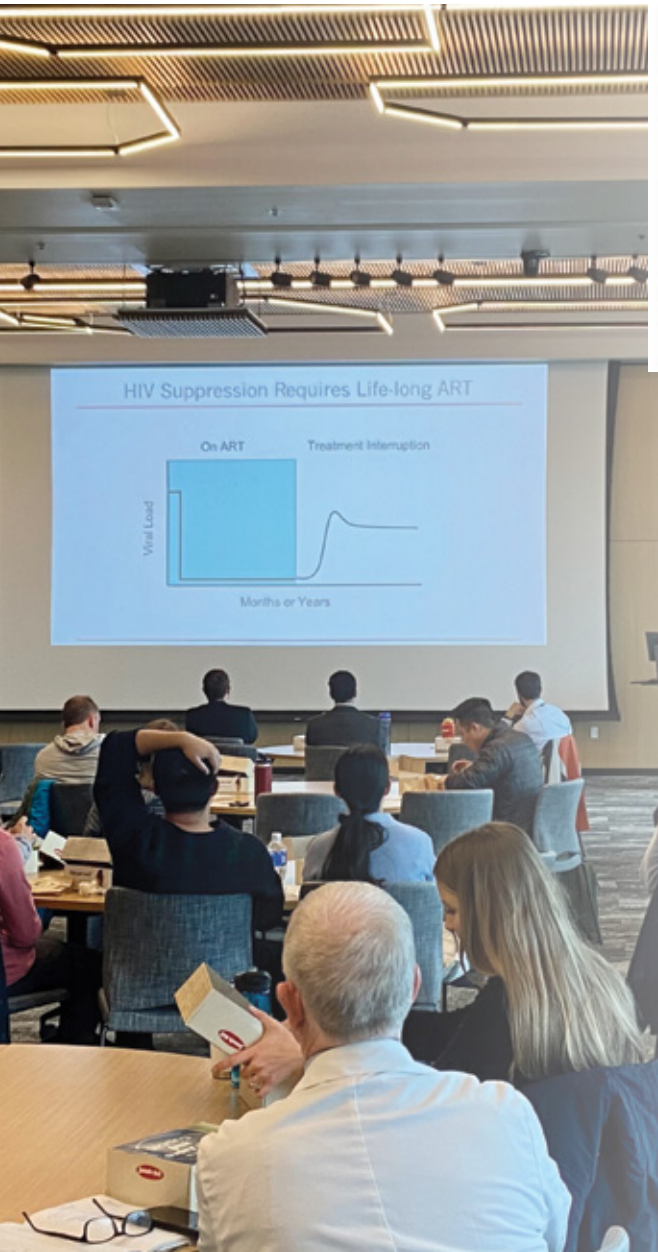
As we look to the future, we are excited to continue our journey of innovation and excellence in patient care, education and research. Our commitment to improving health care delivery and outcomes for all patients remains steadfast, and we are eager to define new frontiers of service delivery, ensuring a thriving workforce and advancing our educational and research missions.

Members of the Division of Hospital Medicine

Marisha Burden Division Head & Professor
Mel Anderson Associate Professor
Alexander Abramowicz Assistant Professor
Albert Ackil Assistant Professor
Rebecca Allyn Associate Professor
Kristin Anderson Assistant Professor
Bryan Adams Instructor
Philip Andreoli Assistant Professor
Catherine Anderson Admin Assistant II
Debra Anoff Associate Professor
Tyler Anstett Assistant Professor
Alix Armstrong Instructor
Amiran Baduashvili Associate Professor
Bhavyaa Bahl Assistant Professor
Hoda Farajpour Bakhtiari Faculty
Alison Barbieri Instructor
Melisha Begerman
Business Services Senior Professional
Adam Beitscher Assistant Professor
Andrew Berry Assistant Professor
Elizabeth Boggs Assistant Professor
Joshua Bollan Assistant Professor
Kasey Bowden Assistant Professor
Erin Bredenberg Assistant Professor
Elizabeth Breitbach Assistant Professor
Richard Broadhurst Clinical Instructor
Claire Brickson Instructor
Haley Briggs Instructor
Heather Briggs Associate Professor
Carrie Brown Associate Professor
Susan Calcaterra Associate Professor
Sarah Calkins Asst Professor
Catherine Callister Assistant Professor
Claudia Camacho
Health Care Principal Professional
David Cantu Assistant Professor
Kathryne Carr Instructor
Cristina Caviglia Instructor
Lilia Cervantes Associate Professor
Leela Chockalingam Instructor
Vineet Chopra Professor & Endowed Chair
Nathan Coffman Assistant Professor
Donna Colobong Instructor
Priscilla Collier Instructor
Heather Corrigan Senior Instructor
Jess Coulter Instructor
Ethan Cumbler Professor
John Cunningham Associate Professor
Alice Curchin Instructor
Zuzanna Czernik Associate Professor
Lauren Dailey Faculty Fellow
Magdalena Danch Associate Professor
Khooshbu Dayton Assistant Professor
Bobbie Jo Dodson Assistant Professor
Amira del Pino-Jones Associate Professor
Elizabeth Desmarais Instructor
Manuel Diaz Assistant Professor
Caitlin Dietsche Assistant Professor
Jennifer Doran Instructor
Jennifer Drury Instructor
Mark Duncan Assistant Professor
Elri Duncan Instructor
Tara Eastman Instructor
Marisa Echaniz Associate Professor
David Ecker Associate Professor
Courtney Enix Assistant Professor
Laura Erdman Assistant Professor
Kevin Fasing Faculty Fellow
Gregory Feldpausch Senior Clinical Instructor
Matthew Ferraro Instructor
Kendal Flegenheimer Instructor
Kerry Fleischer
Business Services Program Director
Michelle Fleshner Assistant Professor
Lisa Fosnot Assistant Professor
Tamaryn Fox Senior Instructor
Katherine Frank HR Senior Professional
Maria Frank Professor
Elizabeth Freese Faculty Fellow
Telise Fullington Instructor
Kristin Furfari Associate Professor
Philip Fung Assistant Professor
Alexandra Gallant Assistant Professor
Jeffrey Glasheen Professor
Dennis Gibson Associate Professor
Kathleen Glenn Instructor
Elizabeth Gillespie Assistant Professor
Emily Gottenborg Associate Professor
Eric Grimm Research Services Professional
Joseph Gulick Instructor
Asta Gurklys Instructor
Lawrence Haber Visiting Associate Professor
Benjamin Haerther Faculty Fellow
Dagan Hammar Instructor
Reem Hanna Assistant Professor
Hattie Hanson Faculty Fellow
Kristen Harakal Instructor
Daniel Heppe Associate Professor
Matthew Hoegh Instructor
Jeffrey Hollis Assistant Professor
Scott Horton Senior Instructor
Kevin Howard Instructor
Madison Hibshman Instructor
Kelsey Hussey
Communication Senior Professional
Josh Hutchison Instructor
Kimberly Indovina Associate Professor
Kate Jennings Assistant Professor
Jason John Senior Instructor
Amanda Johnson Senior Instructor
Dayna Johnson Instructor
Christine Jones Associate Professor
John Kaufman Assistant Professor
Kelsey Keil
Academic Services Senior Professional
Joseph Keach Assistant Professor
Angela Keniston Assistant Professor
Vishnupriya Khatri Assistant Professor
Christopher King Associate Professor
Andrea King Instructor
Martina King Assistant Professor
Mark Kissler Assistant Professor
Maria Klimenko Assistant Professor
David Klimpl Assistant Professor
Patrick Kneeland Associate Professor
Michelle Knees Senior Instructor
Julie Knoeckel Assistant Professor
Beverly Koran Instructor
Henry Kramer Assistant Professor
Hillary Landau Assistant Professor
Juan Lessing Associate Professor
Dimitriy Levin Associate Professor
Julia Limes Associate Professor
Jia Liu Assistant Professor
Frances Lorenzi Assistant Professor
Bryan Lublin Assistant Professor
Jennifer Lyden Assistant Professor
Amber Maniates Assistant Professor
Diana Mancini Associate Professor
Adrienne Mann Assistant Professor
William Manning Assistant Professor
Katarzyna Mastalerz Associate Professor
Laura Mattox Faculty Fellow
Anna Maw Associate Professor
Megan Mayer Instructor
Lauren McBeth
Business Services Principal Professional
Graham McCracken Instructor
Molly McCullough Faculty Fellow
Joesie McManamen Instructor
Elizabeth McWilliams Instructor
Abigail Mehler Assistant Professor
Frank Merritt Assistant Professor
Robert Metter Assistant Professor
Jonathan Metz Instructor
Adam Meyer Assistant Professor
Marshall Miller Assistant Professor
Amanda Miller-Sarmento Faculty Fellow
Tyler Miller Assistant Professor
David Mintzer Assistant Professor
Gregory Misky Associate Professor
Neelam Mistry Assistant Professor
Rudolph Moravek Assistant Professor
Parisa Mortaji Instructor
Anna Munoa Associate Professor
Marina Mutter Assistant Professor
Sansrita Nepal Associate Professor
Swathi Nemani Assistant Professor
Jason Nguyen Faculty
Allison Nitsch Assistant Professor
Noelle Northcutt Associate Professor
Li-kheng Ngov Associate Professor
Adam Olson Instructor
Angela Orchard Instructor
Carolina Ortiz-Lopez Assistant Professor
Aakriti Pandita Assistant Professor
Hemali Patel Associate Professor
Moksha Patel Assistant Professor
Alpeshkumar Patel Assistant Professor
Jonathan Pell Associate Professor
Jason Persoff Associate Professor
Tuong Phan Instructor
Vy Pham Faculty
Cason Pierce Associate Professor
Samuel Porter Assistant Professor
Jennifer Post Assistant Professor
Katie Raffel Assistant Professor
Sridharan Raghavan Assistant Professor
Josh Raines Assistant Professor
Neha Reddy Assistant Professor
Mark Reid Associate Professor
Samantha Robin Instructor
Mario Rubio
Business Services Principal Professional
Katherine Sachs Associate Professor
Kirsten Salline Instructor
Ellen Sarcone Associate Professor
Nicholas Scaletta Assistant Professor
Anna Samuel HR Program Manager
Katarina Sanford Instructor
Jesse Santos
Finance and Accounting Professional
Scott Saunders Assistant Professor
Julie Van Saun Assistant Instructor/Fellow
Sarah Scarpato Assistant Professor
Anne Drabkin Schade Associate Professor
Amie Scott Instructor
Rehaan Shaffie Assistant Professor
Sneha Shah Senior Clinical Instructor
Amy Sheldahl Associate Professor
William Silkworth Assistant Professor
Joseph Simonetti Assistant Professor
Sarguni Singh Assistant Professor
Beth Smilkstein Instructor
Erica Smith Senior Instructor
Julie Smith Instructor
Jeffrey Spence Associate Professor
Adam Starr Assistant Professor
Katherine Stafford Faculty
Barbara Statland Associate Professor
Sarah Stella Associate Professor
Kristin Sterrett Assistant Professor
Stacey Staudinger Assistant Professor
Kevin Sullivan Assistant Professor
Alexander Sun Assistant Professor
Leah Swanson Assistant Professor
Erin Szemak Instructor
Darlene Tad-y Associate Professor
Ashley Takahashi Assistant Professor
Sahar Taghvaei Assistant Professor
Julie Taub Associate Professor
Evan Taylor Faculty
Lindsay Thurman Associate Professor
William (Jackson) Turbyfill
Assistant Professor
John Updike Assistant Professor
Julie Van Saun Faculty Fellow
Philip Vatterott Assistant Professor
Benjamin Vipler Assistant Professor
Anunta Virapongse Associate Professor
Cortland Vis Faculty Fellow
Emily Waner Instructor
Benjamin Walker Assistant Professor
Tara Ward Assistant Professor
Sarah Wachtel Assistant Professor
Molly Weinberg Senior Instructor
Christine Welles Assistant Professor
Chi Zheng Associate Professor
Claire Westcott Assistant Professor
Kinsey Wimmer Assistant Professor
Caitlin Winget Associate Professor
Sarah Witowski Assistant Professor
Brian Wolfe Associate Professor
Eric Young Associate Professor
Amy Yu Assistant Professor
Jeffrey Zoucha Associate Professor

Division of Infectious Diseases

Eric Poeschla, MD | Division Head





Eric Poeschla, MD

Our division is made up of a multidisciplinary team of clinicians, educators and scientists working to improve the diagnosis, treatment and prevention of infectious diseases.

Since early 2020, a key focus of the Division of Infectious Diseases was to respond to the unprecedented pressures and opportunities brought by the COVID-19 pandemic. We had to learn about a new infectious disease, how to treat it and how to control its transmission.

Much happened under conditions of considerable urgency and stress. The division came together and rose to the occasion in the hospital, clinic and scientific arenas. We developed vaccine and treatment guidelines and worked with other divisions and departments to tackle the problem in all its dimensions. **Lakshmi Chauhan**, MD, assistant professor of medicine and director of our Inpatient Services, worked tirelessly and with much skill and wisdom to manage our division's response.

New Programs

This year, our division initiated a citywide Mpox working group to respond to this threat. Mpox is not a brand-new disease, but it has previously mostly occurred in developing countries. Like COVID-19, this was another wake-up call about the major, ongoing threat of emerging viruses.

Developing Novel Therapies

Division members are working on cabotegravir, a new antiretroviral medication used for the treatment of HIV/AIDS. We are also leading a clinical trial for a new antiretroviral agent called lenacapavir. In addition, new antifungal drugs are being studied.

Thomas Campbell, MD, professor of medicine, has led multiple clinical trials on monoclonal antibody therapy for COVID-19 and COVID-19 treatment vaccines. We participated in the Moderna trials for that vaccine, and for a number of the monoclonal antibody trials.

Advancing Virtual Care

The pandemic led us to adopt virtual care and virtual visits. Looking to the future, our faculty and leaders are particularly interested in telehealth to expand our presence in Colorado and the surrounding states.

Artificial Intelligence

Members of our division are interested in understanding how artificial intelligence will impact our field. We think AI may turn out to be especially useful with infectious diseases, because we have such a broad differential diagnosis for infectious diseases and they involve every organ system in the body.

Faculty Recruitment

Two new faculty members joined the division in July 2022: **Alyssa Castillo**, MD, assistant professor of medicine, and **Michael Haden**, MD, assistant professor of medicine, from the University of Washington and The Ohio State University, respectively. Dr. Castillo is an expert in infection control and prevention and Dr. Haden is an orthopedic infectious disease specialist.

In addition, **Margaret Fitzgerald**, associate professor of medicine,

joined the VA Medical Center faculty from Loyola University.

It was a busy and successful year for recruitment. Seven new physicians will be joining the division in July-August 2023.

Highlights in Education

Brian Montague, DO, associate professor of medicine, assumed the role of director of the Infectious Disease Fellowship Program, alongside **Michael Haden**, MD, assistant professor of medicine, who serves as the associate program director. We have four new clinical fellows starting in July 2023, and numerous postdoctoral fellows every year.

Katherine Frasca, MD, associate professor of medicine, is the leader in the HIV Pre-exposure Prophylaxis (PrEP) program and became the microbiology content director for the School of Medicine curriculum.

Shanta Zimmer, MD, professor of medicine and associate dean for education, oversaw the refinement and implementation of the innovative longitudinal integrated curriculum for medical students.

Cara Wilson, MD, professor of medicine, serves as the director of the Medical Scientist Training Program.

Transplant Infectious Disease Fellowship

Our division initiated a new Transplant Infectious Disease Fellowship in July 2022, with two new fellows in the inaugural year. In the next year, we aim to grow this program, bring on a new program director and add additional physicians and physician-scientists in this area.

The division was pleased to receive the Susan Mason, MD, Endowed Award Fund in Infectious Diseases, which provides travel funds to trainees for professional development activities. The fund, previously administered through the Colorado Infectious Disease Society, was transferred to our division in July 2022.

Looking ahead, we plan to grow our faculty to meet the demands of University of Colorado Hospital's scheduled opening of a third inpatient tower and expand our clinical and research capabilities in transplant ID and emerging infections. At the same time, we will maintain our strong clinical and research program for HIV/AIDS and continue our work in global health which remains a key interest of multiple faculty.



Brian Montague, MD



Katherine Frasca, MD



Shanta Zimmer, MD



Attendees at the RetroPath 2022 Conference.

Faculty Highlights


Maheen Abidi, MD, FAST


Thomas Campbell, MD


Lakshmi Chauhan, MD


Steven Johnson, MD

Maheen Abidi, MD, FAST, assistant professor of medicine, received the Department of Medicine Rising Star Award. Dr. Abidi was also awarded a K23 career development award from the National Institutes of Health.

Michelle Barron, MD, professor of medicine, was named Honoree of the Year during the Achievement Rewards for College Scientists, ARCS Foundation, Inc., Colorado Chapter.

Thomas Campbell, MD, professor of medicine, received a Department of Medicine Faculty Innovator Award for his work on COVID-19 clinical trials.

Lakshmi Chauhan, MD, assistant professor of medicine, received the EXCCEL Outstanding Clinical Work During COVID Times Award.

Hillary Dunlevy, MD, assistant professor of medicine, was co-author on a paper describing the outcome of the ANCHOR study in the *New England Journal of Medicine.*

Steven Johnson, MD, professor of medicine, was recognized by National Institutes of Health Director Francis S. Collins, MD, PhD, and Anthony S. Fauci, MD, director of the National Institute of Allergy and Infectious Diseases, for his contributions to the NIH "Coronavirus Disease 2019 (COVID-19) Treatment Guidelines."

Mamuka Kvaratskhelia, PhD, professor of medicine, presented novel findings on the intranuclear mechanism of action of the exceptionally potent, long-acting, new antiretroviral drug lenacapavir at the Cold Spring Harbor Retroviruses meeting in May 2022.

Jose Castillo-Mancilla, MD, associate professor of medicine, was appointed associate medical director of the Clinical Translational Research Centers (CTRC) of the Colorado Clinical and Translational Sciences Institute.

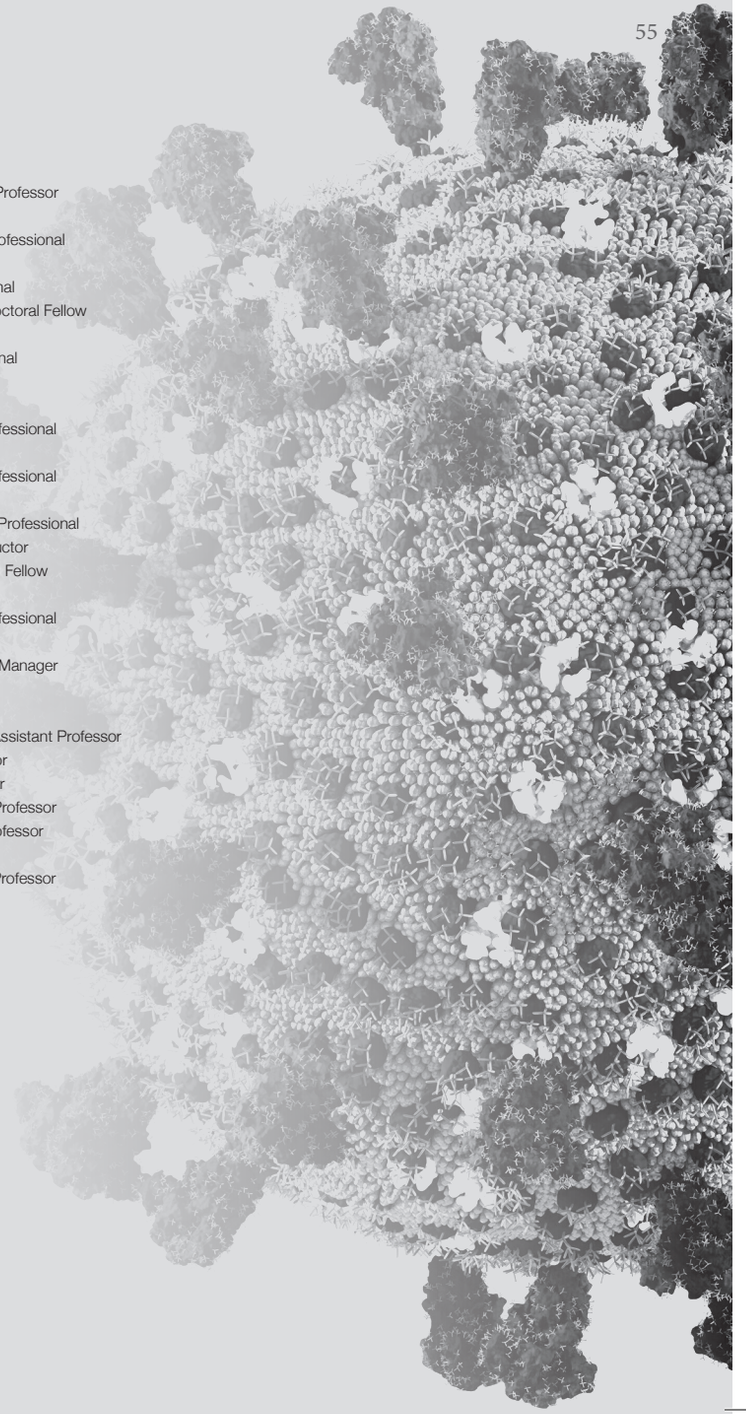
Larissa Pisney, MD, assistant professor of medicine, was the recipient of the 2022 CU Hospital Partners in Care Award, which recognizes an employee for outstanding contributions as a member of the care team.

In October, **Mario Santiago**, PhD, associate professor of medicine, and **Eric Poeschla**, MD, professor of medicine, co-chaired the biennial "Retropath 2022" meeting in Vail, Colorado. They also published a paper in Proceedings of the National Academy of Sciences on interferon resistance of SARS-CoV-2 variants and were awarded a new federal grant to take this work forward.

Kristine Erlandson, MD, associate professor of medicine, received a new NIH K24 grant. She remains an internationally recognized leader in studying the effects of HIV on aging as well as a national leader in the NIH-sponsored RECOVER trial for COVID-19.

Members of the Division of Infectious Diseases

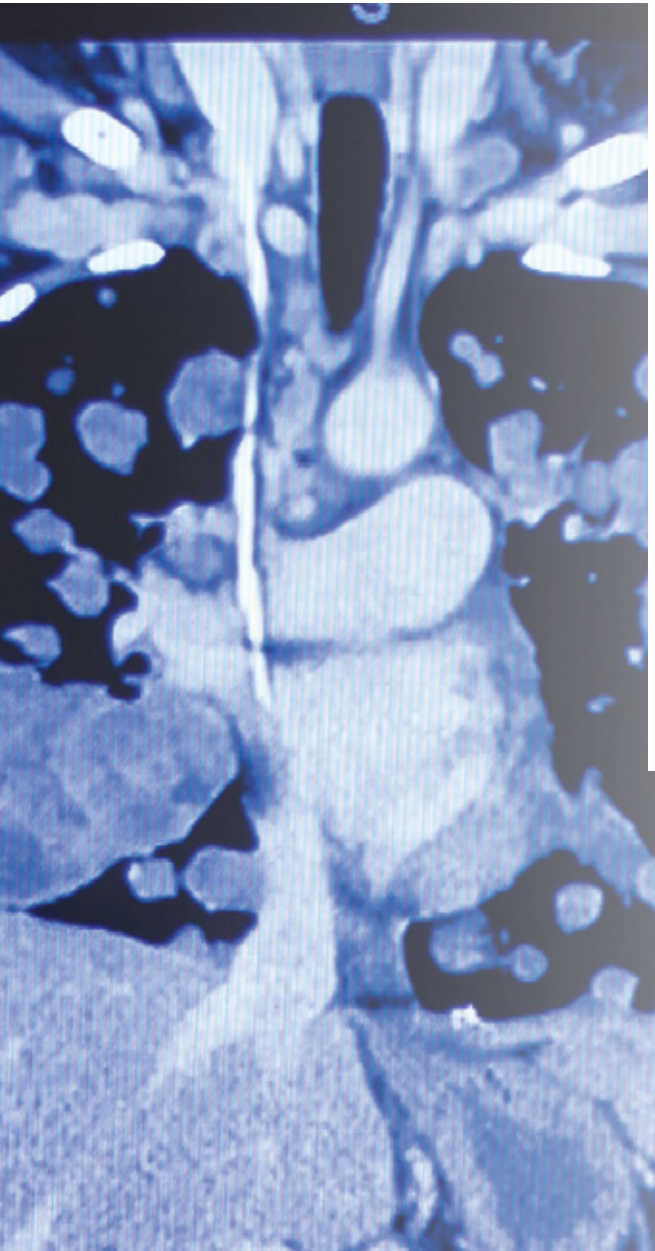
Maheen Abidi Assistant Professor
MD Haider Ali Post-Doctoral Fellow
Lorna Allen Assistant Professor
Mustafa Al-Mafrachi
Research Services Professional
Jesus Amo Aparicio Post-Doctoral Fellow
Arun Saravanakumar Annamalai
Post-Doctoral Fellow
Joslyn Axinn
Research Services Principal Professional
Tania Azam
Research Services Entry Professional
Nicholas Barker
Research Services Professional
Bradley Barrett
Research Services Senior Professional
Michelle Barron Professor
John Beckham Professor
Robert Belknap Associate Professor
Esther Benamu Assistant Professor
Debra Best
Research Services Senior Professional
David Brandon Research Services Professional
Lorenzo Briganti Post-Doctoral Fellow
Marisa Brightman Instructor
Kendall Bullock
Research Services Professional
William Burman Principal Investigator
Thomas Campbell Professor
Alyssa Castillo Assistant Professor
Jose Castillo-Mancilla Associate Professor
Ramasubramanian Chauhan
Assistant Professor
David Cohn Professor
James Colbert Assistant Professor
Cari Cornish
Research Services Senior Professional
Ryan Coyle
Research Services Senior Professional
James Curlin Post-Doctoral Fellow
Laura Damioli Assistant Professor
Austin Daw
Research Services Principal Professional
Maryann Degroote Assistant Professor
Kendra Dickson Instructor
Marianne Dieterich
Research Services Senior Professional
Stephanie Dillon Associate Professor
Charles Dinarello Distinguished Professor
Alberto Dinarello Post-Doctoral Fellow
Tung Dinh Post-Doctoral Fellow
Brandi Dolan
Business Services Program Director
Rachael Dran Research Services Professional
Hillary Dunlevy Assistant Professor
Molly Eaton Associate Professor
Kristine Erlandson Associate Professor
Christopher Erzen
Research Services Entry Professional
Shayleen Espinosa
Research Services Professional
Leigh Espinoza Instructor
Elen Feuerriegel
Research Services Program Manager
Suzanne Fiorillo Senior Clinical Instructor
Cynthia Firnhaber Professor
Margaret Fitzpatrick Associate Professor
Daniel Frank Associate Professor
Katherine Frasca Assistant Professor
Yingying Fu Post-Doctoral Fellow
Edward Gardner Principal Investigator
Monica Graham Research Assistant
Brian Grundy Assistant Professor
Kejun Guo Assistant Professor
Nicola Haakonsen
Research Services Program Director
Michelle Haas Assistant Professor
Daniel Haden Research Services Professional
Michael Haden Assistant Professor
Nicholas Hamblin Instructor
Reed Haney
Research Services Senior Professional
Kellie Hawkins Assistant Professor
Andres Henao Martinez
Associate Professor
Rachel Hendryx Instructor
Jesper Hoejen Post-Doctoral Fellow
Misha Huang Assistant Professor
Szu-Wei Huang Post-Doctoral Fellow
Hermione Hurley Assistant Professor
Cory Hussain Assistant Professor
Edward Janoff Professor
Timothy Jenkins Associate Professor
Steven Johnson Professor
Brandon Johnson
Research Services Entry Professional
Samantha Kaplan Assistant Professor
Dana Karp Instructor
Vincent Khuu Research Services Professional
Jenelynn Kimble Instructor
Jennifer Kofonow
Research Services Professional
Cassandra Kotter Temporary (Researcher)
Martin Krsak Associate Professor
Rachel Kuker Instructor
Mamuka Kvaratskhelia Professor
Lisa Lawrence Senior Instructor
Kelsey Lesteberg Research Instructor
Suzhao Li Assistant Professor
Kathryn Love
Research Services Entry Professional
Nancy Madinger Professor
Sarah Mann Assistant Professor
Carlo Marchetti Assistant Professor
Bruce McCollister Associate Professor
Chelsee McFarland
Academic Services Senior Professional
Donna Mcgregor Assistant Professor
Margaret McLees Instructor
Camille Merrick
Research Services Entry Professional
Nina Millman Assistant Professor
Brian Montague Associate Professor
James Morrison Research Instructor
Supeshala Nawarathnage
Post-Doctoral Fellow
Craig Nielsen Associate Professor
Joanna Nowakowski Instructor
Barbara Palmer Working PERA Retiree
Larissa Pisney Assistant Professor
Eric Poeschla
Professor, Division Head & Endowed Chair
Connie Price Professor
Eric Rapaport
Research Services Program Manager
Kayleigh Reid
Research Services Entry Professional
Charles Robertson Research Associate
Nicole Rod Instructor
Sarah Rowan Associate Professor
Mario Santiago Associate Professor
Sias Scherger Assistant Professor
Sara Scherrer Assistant Professor
Whitney Schraufnagel Associate Professor
Leland Shapiro Associate Professor
Danielle Sharek
Research Services Senior Professional
Eleanor Shields
Business Services Professional
Nikoloz Shkriabai Post-Doctoral Fellow
Zachary Snyder
Research Services Professional
Vanessa Sutton Instructor
Isak Tengesdal
Research Services Entry Professional
Ashley Thompson
Research Services Entry Professional
Laurel Ware
Research Services Principal Professional
Robert Weber Clinical Instructor
Guochao Wei Post-Doctoral Fellow
Shelby West
Research Services Entry Professional
Irene White
Research Services Program Manager
Cara Wilson Professor
Shanta Zimmer Professor
Neena Thomas Gosain Assistant Professor
Nipun Atri Assistant Professor
Eddie Stenehjem Professor
Stephen Morris Assistant Professor
Karen Wendel Assistant Professor
David Wyles Professor
Heather Young Associate Professor



Division of Medical Oncology

Wells Messersmith, MD | Division Head

Virginia Borges, MD | Deputy Division Head





Wells Messersmith, MD



Virginia Borges, MD

The Division of Medical Oncology, working in partnership with the University of Colorado Cancer Center, continues to provide our patients with the most innovative cancer care available — from emerging immunotherapies to next-generation genetic sequencing.

Much of the progress in oncology in the past decade has been in the area of immunotherapy, which harnesses the power of the body's own immune system to seek out and destroy cancer cells. Unlike chemotherapy, this targeted treatment does not affect healthy cells in the process.

Immunotherapy comes in many different forms, including monoclonal antibody therapy, CAR-T cell therapy and cancer treatment vaccines. The CU Cancer Center is one of only a few in the state to provide clinical trial opportunities for immunotherapy, which gives our patients access to novel therapies years before they're approved.

Monoclonal Antibodies

Monoclonal antibodies, a type of immunotherapy, are produced in a laboratory and attach themselves to specific molecules on cancer cells to destroy them. In addition, several monoclonal antibodies that impact immune cell signaling are FDA-approved for many different tumor types. Examples include pembrolizumab, nivolumab and cemiplimab, which inhibit a receptor called "programmed cell death protein 1 (PD-1)."

These "checkpoint inhibitors" block one of the brakes on the immune system to mount an immune attack on tumor cells. Our faculty are leading numerous clinical trials of novel combinations with these agents across many cancers. We've seen some incredible responses, even where patients sent to hospice by their local provider were cured or are doing extremely well.

CAR-T Cell Therapy

Another novel form of immunotherapy is chimeric antigen receptor T-cell therapy (CAR-T), a treatment in which a patient's T cells, a type of immune cell, are engineered in the laboratory so they will bind to cancer cells and kill them.

The CU Cancer Center, along with our Division of Hematology in the Department of Medicine, is one of the institutions creating and testing CAR-T cell therapies. We currently have multiple clinical trials in this area, and we've been very fortunate to leverage the experience of our colleagues in Hematology to help us safely develop these agents. This is a great example of interdisciplinary collaboration, where a treatment that is FDA-approved and being used by one group can be leveraged to help another group.

Cancer Treatment Vaccines

On the horizon are cancer treatment vaccines, a type of immunotherapy that maximizes the body's immune response. For now, most cancer treatment vaccines are offered only through clinical trials. The goal of these agents is to stimulate an immune response against abnormal proteins found only in cancer cells, and these can be 'personalized' for patient tumors such that a vaccine can be made for one patient at a time.

Precision Medicine

Our division has also made exceptional strides in precision medicine. The idea is if you

fully sequence the DNA of a patient's cancer, you can find rare mutations, fusions and other alterations that are targetable by novel targeted therapies.

Instead of thinking about cancer in terms of the organ where it began, you can think of it as the mutation which that particular cancer has. It's a very different way of thinking about oncology and has challenged the way we have traditionally been organized into disease-based teams like breast cancer, lung cancer and colon cancer.

We are also studying circulating tumor DNA (ctDNA), which refers to abnormal DNA circulating in the blood that comes from cancer cells. The idea is to pick up minimal residual disease, i.e., a few scattered cancer cells in the body after surgery, and try to eliminate those with further therapy. This technique has a number of exciting possibilities, including cancer screening. So instead of getting a mammogram or a colonoscopy, a patient would actually get a blood test that can screen for many different cancers all at once. It could really be a game-changer and could also help us personalize therapy post-surgery, targeting those at highest risk.

Research Collaborations

Our division is acknowledged both nationally and internationally for innovative work in cancer research focused on the development and application of experimental therapeutics and targeted agents for future cancer treatment.

Gates Center for Regenerative Medicine

We are slated to collaborate with the Gates Center for Regenerative Medicine, a world-class, multi-institutional center headquartered on the CU Anschutz Medical Campus. The Gates Center has received a $200 million institutional investment to, in part, develop cell-based therapies. We expect that the center will be a national leader in many immunotherapy efforts, and we greatly look forward to collaborating with them.

Robotic Drug Screening

We are also collaborating with the CU Skaggs School of Pharmacy and Pharmaceutical Sciences, which has a robot that can screen over 100,000 compounds against a cancer target in a matter of days. This capability has been very helpful as we try to commercialize and bring to the public discoveries that were made on the campus.



John Tentler, PhD, Cancer Research Experience for Undergraduates (CREU) Director, and Jill Penafiel, CREU Manager, with the 2022 student cohort, University of Colorado Anschutz Medical Campus.

Clinical Trials in Dogs with Cancer

Our division partners with the Flint Animal Cancer Center, one of the largest animal cancer centers in the country, located at Colorado State University in Fort Collins. What we have learned from genetically analyzing cancers in dogs, cats and other companion animals is that they share many similarities with human cancers. Clinical trials can be conducted in companion animals that not only improve their lives, but also provide important insights for human cancers such as lymphoma and sarcoma.



Flint Animal Cancer Center





Eduardo Davila, PhD, in his lab.

Educating the Next Generation

This year, our Medical Oncology Hematology/Oncology Fellowship Program completed its expansion from 12 to 15 fellows. Our fellows continue to work in diverse training settings, including the Rocky Mountain Regional VA Medical Center and Denver Health, which prepares them for careers in the research, academic or community practice setting.

Mentorship and Research Training

Eduardo Davila, PhD, professor of medicine, established the Preparation in Interdisciplinary Knowledge to Excel – Post-Baccalaureate Research Education Program (PIKE-PREP). This innovation offers multidimensional mentorship and research training experience to prepare post-baccalaureate students from underrepresented communities to enroll and succeed in top-tier PhD or MD/PhD programs and commit to a career in biomedical research.

Improving Cancer Treatment and Prevention into the Future

Our faculty are proud to be members of both the Department of Medicine and the CU Cancer Center. Discoveries in basic, translational, clinical and population research will lead to improved therapies for both the treatment and prevention of cancer, and help educate the next generation of cancer doctors and researchers.

2022 Incoming Fellows Welcome BBQ

Back Row L-R: Sydney Brehany, MD; Andrew Kent, PhD; Corbin Eule, MD

Middle Row L-R: Mandy Sakamoto, MD; Hannah Robinson, MD; Anna Schreiber, MD

Front Row L-R: Alice Weaver, MD, PhD; Nikki Balmaceda, MD; Cassandra Duarte, MD



Members of the Division of Medical Oncology

Radhika Acharya-Leon
Assistant Professor
Anosheh Afghahi
Assistant Professor-Clinical
Gabriella Albert Research Assistant
Nathaniel Alzofon
Research Services Professional
Carol Amato
Research Services Senior Professional
John Arcaroli
Assistant Professor Adjunct
Lisen Axell Instructor
Stacey Bagby
Research Services Principal Professional
Ellen Bamberg Research Assistant
Jessica Berman Instructor
Cameron Binns
Research Services Entry Professional
Nicole Bonato Instructor
Michelle Borakove
Research Services Program Manager
Virginia Borges
Deputy Division Head & Endowed Chair
Daniel Bowles Associate Professor
Heather Brechbuhl Asst Professor
Paul Bunn Distinguished Professor
Carlin Callaway Assistant Professor
Eryn Callihan Instructor
Taylor Cameron Program Assistant I
David Camidge Professor
Phoebe Cao Research Assistant
Jiangli Chen
Research Services Professional
Tugs-Saikhan
Chimed Research Services Principal Professional
Kelly Connolly
Research Services Senior Professional
Kasey Couts Assistant Professor
Lauren Cozzens Research Assistant
Petra Dahms Research Assistant
Kelli Dauleh HR Senior Professional
Andres Davalos
Research Services Entry Professional
Ciara Davies Instructor
Eduardo Davila Professor
Sarah Davis Associate Professor
Christina Davis Clinical Instructor
Sami Diab Associate Professor
Jennifer Diamond
Associate Professor
Robert Doebele
Assoc Professor-Clinical
Adrian Dominguez
Research Services Senior Professional
Colleen Dougherty-Gray
Senior Instructor
Richard Duke Professor
Erin Dunsworth Associate Professor
Evan Dus
Anthony Elias Professor
Sandra Everett Instructor
Heather Fairchild
Research Services Professional
Brooke Ferguson Instructor
Thomas Flaig Professor
Elizabeth Fleagle
Assistant Professor
Rebecca Ford Instructor
Tyler Friedrich Assistant Professor
Christopher Geiger
Assistant Professor
Michael Glode Professor
Laura Graham Assistant Professor
Alyx Gray Research Associate
Jitao Guo Research Associate
Amy Han Postdoctoral Fellow
Jonathan Hester-McCullough Research Services Professional
Jordan Hirsch
Finance and Accounting Senior Professional
Robert Hoyer Assistant Professor
Jennifer Hreno Senior Instructor
Sarah Hunt Instructor
Marilyn Jackson
Research Services Entry Professional
Antonio Jimeno-Largo Professor
Brianne Johnson
Academic Services Senior Professional
Laurri Jones Instructor
Peter Kabos Associate Professor
Madeleine Kane Professor
Lindsey Kemp
Research Services Senior Professional
Elizabeth Kessler
Associate Professor
Joshua Keyes Instructor
Stephen Keysar Assoc Professor
Sunnie Kim Assistant Professor
Kelsey Kines Research Assistant
Catherine Klein Professor
Wendie Knowles Program Assistant I
Scott Kono Asst Professor
Lisa Ku Instructor
Elaine Lam Associate Professor
Phuong Le Research Associate
Alexis Leal Assistant Professor
Robert Lentz Assistant Professor
Karl Lewis Endowed Chair
Christopher Lieu
Associate Professor
Stuart Lind Professor
Jing Liu
Research Services Senior Professional
Liqiong Liu Sr Research Associate
Traci Lyons Associate Professor
Morgan MacBeth
Research Services Professional
Joseph Magno Research Assistant
Anne Mailhot Instructor
Alessandra Maleddu
Associate Professor
Kristina Markey Instructor
Marina Marvin Instructor
Jose Mayordomo Professor
Jessica McDermott
Assistant Professor
Theresa Medina Assistant Professor
Wells Messersmith Professor, Division Head, Endowed Chair
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Research Services Entry Professional
Bettina Miller
Research Services Senior Professional
Eliza Miller Instructor
Cristiam Moreno Tellez
Research Associate
John Morton Assistant Professor
Anna Nguyen Instructor
Cera Marie Nieto
Postdoctoral Fellow
Brooke Parker Instructor
Hannah Parris Research Instructor
Emily Parsons Instructor
Tejas Patil Assistant Professor
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Research Services Senior Prof
Wendi Petro
Business Services Program Director
Stevie Phelabaum
Research Services Entry Professional
Sharon Pine Professor
Todd Pitts Associate Professor
Rebecca Powell Senior Instructor
Kyle Powers
Research Services Senior Professional
Gregory Reis
Research Services Senior Professional
William Robinson Professor
Candice Rossi Senior Instructor
Hatim Sabaawy Professor
Maren Salzmann-Sullivan Research Services Senior Professional
Meghan Scheid Instructor
Erin Schenk Assistant Professor
Steven Schuster Assistant Professor
Elena Shagisultanova
Assistant Professor
Melinda Simonson Instructor
Stephen Smoots
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Megan Spradlin Instructor
Michelle Springer Instructor
Alexander Stoller
Research Services Entry Professional
Ann Strange
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Jamie Studts Professor
Lih-Jen Su
Research Senior Instructor
John Tentler Associate Professor
Brian Thompson
Postdoctoral Fellow
Karley Trautman Senior Instructor
Poojitha Valasareddy
Assistant Professor
Tiffany Van Instructor
Kiran Vinod Paul
Research Services Professional
Veronica Wessells
Research Services Professional
Phaedra Whitty
Research Services Entry Professional
Breelyn Wilky Associate Professor
Marie Wood Professor
David Woods Assistant Professor
Lauren Zimmaro
Assistant Professor
Marileila Garcia Professor

Division of Pulmonary Sciences & Critical Care Medicine

Marc Moss, MD | Division Head



PSCCM members offering Pulmonary Function Tests at the 2023 Anschutz Block Party.

Marc Moss, MD

Our division focuses on the diagnosis, prevention and treatment of diseases affecting the lungs. Comprising over 160 faculty, we are located across four sites, including the University of Colorado Anschutz Medical Campus, National Jewish Health, Denver Health and the VA Eastern Colorado Health Care System. Since being ranked as a combined academic center, we have held the #1 or #2 position in the U.S. News & World Report rankings for pulmonary care.

Over the past three years, the Division of Pulmonary Sciences and Critical Care Medicine has focused on how to most effectively recover and rejuvenate our academic mission after the COVID-19 pandemic.

Our ICUs did a phenomenal job of taking care of COVID-19 patients. And our mortality rates were some of the lowest reported by the state and nation, so our patients got extremely good care with great outcomes. As the overall number of acutely ill COVID-19 patients is decreasing, we are leading the care of patients with persistent COVID-19 symptoms and functional limitations.

New Clinics

Post-ICU Care

We recently expanded our Post-ICU Clinic, where people with multiple chronic issues can continue to receive care after they leave the ICU. **Sarah Jolley**, MD, assistant professor of medicine, developed a multidisciplinary clinic for post-COVID-19 patients, bringing together clinicians in pulmonary, cardiology, integrative medicine, psychiatry and rehabilitation medicine — from physical and occupational therapy to physical medicine and rehabilitation. This clinic has been highly sought after and has seen a 75 percent year-over-year growth with a broad referral base comprising Colorado, Southern Wyoming and western Nebraska. The clinic has also received national attention and serves as a model for multiple clinics around the country.

Pulmonary Hypertension Program

Our Pulmonary Hypertension Program at CU Anschutz is the longest-standing practice of its kind in the Rocky Mountain region, and the only program with a Pulmonary Hypertension Center for Comprehensive Care accreditation. Many of the current therapies for pulmonary hypertension have originated from this program, which also offers patients opportunities to enroll in clinical trials. For example, **David Badesch**, MD, professor of medicine, senior authored a clinical trial published in the *New England Journal of Medicine* demonstrating that sotatercept resulted in a reduced pulmonary vascular resistance in patients with pulmonary arterial hypertension.

Comprehensive Lung and Breathing Program

Our Complex Lung and Breathing Center is made up of a multidisciplinary team of medical providers, led by **Todd Bull**, MD, who have extensive expertise to treat many common and not-so-common lung diseases. Patients have the peace of mind knowing a team of experts is working together to effectively treat all

pulmonary conditions. The center makes tests and appointments as convenient as possible and offers the most advanced treatments and clinical trials.

Applied Microbial Metrics

Nicholas Walter, MD, associate professor of medicine, is currently working on plans for the Center for Applied Microbial Metrics. The center is expected to revolutionize the future care and therapeutics for patients with tuberculosis. This work will transform infectious disease monitoring using novel tools for paradigm-changing insights into bacterial replication to be applied to new drug development and disease monitoring.

Novel Therapies

David Schwartz, MD, distinguished professor, has advanced understanding of new therapeutic approaches for interstitial lung diseases, specifically idiopathic pulmonary fibrosis, and the role of mucins (MUC-5B), in the pathogenesis of those diseases. This research has the potential to discover new pathways and develop novel therapies for these patients.

Wellness

Creative Arts Therapy

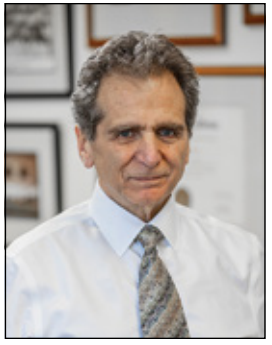
Our division is at the forefront of understanding wellness and burnout in health care professionals. We published a recent study in the *American Journal of Medicine* that has attracted great interest around the country about the role of creative arts therapy for health care professionals and their well-being.



Nicholas Walter, MD



Sarah Jolley, MD



David Schwartz, MD

Training the Next Generation

Research Training/Mentorship for Junior Faculty

The division has an active pipeline of junior faculty with multiple faculty members receiving National Institutes of Health Career Development Awards, including Ruth Kirschstein grants for individual postdoctoral fellows, and mentored patient-oriented research career development awards. Junior faculty are recruited with mentors and mentorship teams in mind so that they can get personalized attention and guidance on their academic careers and projects.

Pulmonary Critical Care Fellowship Program

For more than 50 years, we have provided a traditional research-focused fellowship program. But what we have realized is that there are other career paths that candidates are interested in, such as how to develop a career in medical education. To address this, we developed a medical education track in our fellowship program which has been very successful.



PCCM Fellowship Class of 2023 Graduation





Fellows at the 2023 PSCCM Division Hike.

We have focused on increasing the diversity of our fellows. The makeup of our fellows over the last few years has been over 50 percent female compared to the national average of one-third. Our three-year fellowship program has seven fellows a year. Fellows are able to stay for a fourth year, so we typically have 24–25 fellows.

Faculty Recruitment

Since 2019, we have hired 20 new faculty members, the majority of whom come from prestigious universities, including Duke University, Harvard University and the University of Washington. Our recruitments have spanned the range of pulmonary disorders, including critical care delivery, sleep medicine, general pulmonology and pulmonary transplant.

Research and Innovation

We are a large division, and we have a broad portfolio of funding for a variety of pulmonary critical care disorders. Currently, we have over $13 million in NIH and other funding. We have focused on emphasizing multidisciplinary research initiatives, linking our bench scientists with our clinical and health services researchers.

Lung Transplant Program



Alice Gray, MD

Since its inception in 1992, the CU Hospital Lung Transplant Program has performed more than 900 lung transplants. Led by **Alice Gray**, MD, professor of medicine, we are now on track to perform approximately 50 transplants per year. And that number is growing rapidly.

Our multidisciplinary team is made up of dedicated lung transplant surgeons, transplant pulmonologists, nurse coordinators, pharmacists, social workers, financial coordinators, dietitians, rehabilitation specialists and psychologists who ensure successful outcomes and a high-quality experience for patients. Our team also provides lifelong care to our lung transplant recipients after transplant. We believe that ongoing engagement with the lung transplant team results in better long-term survival and quality of life.

Members of the Division of Pulmonary Sciences & Critical Care Medicine

Cheryl Abbott Working ORP Retiree
Neil Aggarwal Associate Professor
Reem Al Mubarak
Research Services Senior Professional
Richard Albert Professor
Thaddeus Allen Research Services Entry Prof
Yael Aschner Assistant Professor
Rachel Ashenbremer
Business Services Professional
Alexis Assante Research Services Professional
Jake Atkins Business Services Professional
Kristen Audette Admin Assistant III
Rafaela Avallone Mantelli
Research Services Entry Professional
David Badesch Professor
Xiyuan Bai Assoc Professor
Kathleen Barnes Professor
Jennifer Bitzan
Research Services Principal Professional
Genevieve Boddie Instructor
Meher Preethi Boorgula
Research Instructor
Bryan Borg Asstistant Professor
Janna Brancato
Research Services Principal Professional
Selene Brunner Instructor
Todd Bull Professor
Ellen Burnham Professor
Blake Butler
Research Services Entry Professional
Monica Campbell Instructor
Jonathan Cardwell
Research Services Senior Professional
Ann Cartwright Instructor
Rebeka Chandler Instructor
Oscar Chavez HR Entry Professional
Shenley Colley Senior Instructor
Geoffrey Connors Associate Professor
Gabrielle Cook
Research Services Senior Professional
Riley Cooney
Research Services Entry Professional
Jamie Cronin Research Services Professional
Margaret Cruse
Research Services Senior Professional
Emily Culbertson
Research Services Senior Professional
Edward Dempsey Professor
Erika Dudley Instructor
Christopher Evans Professor
Emma Farrell
Research Services Senior Professional
Sonia Flores Professor
Anne Fuhlbrigge Associate Professor
Bifeng Gao Associate Professor
Katherine Garces Instructor
Tewodros Gebremariam
Visiting Associate Professor
Moumita Ghosh Associate Professor
Bridget Graney Assistant Professor
Alice Gray Associate Professor
Bridget Greuel Research Services Professional
Sue Gu Instructor
Arnav Gupta Assistant Professor
Michael Hanley Assistant Professor
Anna Harder
Research Services Entry Professional
Nicole Harlan Assistant Professor
Kristina Hatakka
Research Services Senior Professional
Caroline Hauer
Research Services Entry Professional
Natalie Held Assistant Professor
Corinne Hennessy
Research Services Senior Professional
Jeremy Herrera Assistant Professor
Carrie Higgins
Research Services Senior Professional
Abigail Hills
Research Services Principal Professional
Joseph Hippensteel Assistant Professor
Fernando Holguin
Professor & Endowed Chair
Peter Hountras Assistant Professor
Yan Hu Post-Doctoral Fellow
Shuang Hu
Research Services Senior Professional
Jonathan Huber Instructor
Kelli Janata Clinical Instructor
William Janssen Professor
Ana Maria Jaramillo Hernandez
Post-Doctoral Fellow
Emily Johnson
Research Services Senior Professional
Natalie Johnson
Research Services Entry Professional
Sarah Jolley Assistant Professor
Megan Joyce Temporary (Researcher)
Arun Kannappan Assistant Professor
Deanna Kapitanec
Research Services Professional
Vijayalakshmi Karoor Assistant Professor
Robert Keith Professor
Breann Keller
Research Services Senior Professional
David Keller
Research Services Principal Professional
Keegan Kincaid
Research Services Professional
Dwight Klemm Professor
Andrei Krivoi Post-Doctoral Fellow
Jonathan Kurche Assistant Professor
Neale Lange Assistant Professor
Abigail Lara
Associate Professor & Endowed Chair
James Lavelle IV
Assoc Professor Clinical Pract
Andrew Lawler
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Schuyler Lee Research Instructor
Joyce Lee Associate Professor
Haylie Lengel
Research Services Principal Professional
Nancy Lin Assistant Professor
Naoko Liu
Research Services Senior Professional
Khosbayar Lkhagvadorj
Post-Doctoral Fellow
Pilar Londono
Research Services Senior Professional
Cheryl Loudd Business Services Program Mgr
Lisa Maier Professor
James Maloney Professor
Jason Mansoori Assistant Professor
Stephanie Martinez
Research Services Professional
Anne Mathews Assistant Professor
Brandi McCall Senior Instructor
Jeffrey McKeehan Instructor
Sarah McMurtry Research Instructor
Anuj Mehta Assistant Professor
Claudia Mickael Assistant Professor
Manjula Miglani Post-Doctoral Fellow
Mark Mikkelsen Associate Professor
James Miller Professor & Endowed Chair
Christina Moldenhauer HR Manager
Peter Moore Instructor
Ashleigh Morgan Instructor
Marc Moss Professor and Endowed Chair
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Ali Musani Professor
Ikue Nakayama Assistant Professor
James Needell Research Services Professional
Anna Neumeier Assistant Professor
Melissa New Assistant Professor
Kenny Ngo
Research Services Entry Professional
Thao Nguyen
Finance/Acctg Principal Professional
Jerry Nick Assistant Professor
Lisa Nicotera
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Kelly Nielsen Instructor
Elizabeth Nugent Instructor
Patrick Offner
Research Services Entry Professional
Kaori Oshima Research Instructor
Bryan Park Assistant Professor
David Patz Senior Clinical Instructor
Frances Peacock
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Anna Peljto Assistant Professor
Jill Penafiel
Research Services Program Manager
Robert Plenter
Research Services Senior Professional
Allison Proto Instructor
Deepa Puthenvedu
Research Services Professional
Rachel Quaney Assistant Professor
Sunad Rangarajan Assistant Professor
Justin Reid
Research Services Senior Professional
Kelly Rico
Academic Services Senior Professional
Robert Roach Jr. Associate Professor
Sarah Roark Assistant Professor
Maria Rodriguez
Research Services Professional
Karen Rossmassler Research Associate
Laura Sanchez Business Services Professional
Linda Sanders Research Services Professional
Anthony Schock Instructor
David Schwartz Distinguished Professor
Sunita Sharma Associate Professor
Vibhu Sharma Associate Professor
Noah Siddiqui
Research Services Entry Professional
Jeffrey Sippel Assoc Professor Clinical Pract
Suzanne Slaughter
Research Services Senior Professional
Carissa Smith
Business Services Program Director
Vongphone Smith
Research Services Manager
Joshua Smith Assistant Professor
Peter Sottile Assistant Professor
Dawn Stanley Assoc Professor Clinical Pract
Mark Steele Professor
Trevor Steinbach Assistant Professor
Olivia Stogner Research Services Professional
Jeffrey Swigris Principal Investigator
Meredith Tennis Associate Professor
Marci Terrell Program Assistant I
Nina Thomas Assistant Professor
Rubin Tuder Professor
Emily Turner
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Katie Tuscan
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Chantal Underkofler Instructor
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Eszter Vladar Assistant Professor
Nicholas Vuong Instructor
Nicholas Walter Associate Professor
Rachel Warren
Research Services Program Manager
Jenny Williams Instructor
Daniel Winnica Assistant Professor
Sara Word Instructor
Sangya Yadav Research Services Professional
Shuyu Ye Research Services Senior Professional
Tumim Yifru Research Services Professional
Yen-Rei Yu Assistant Professor
Edward Chan Principal Investigator
James Crapo Principal Investigator
Ivor Douglas Principal Investigator
Mark Kearns Assistant Professor
Carolyn Welsh Professor
Marilee Wick Assoc Professor

Division of Renal Diseases & Hypertension

Michel Chonchol, MD | Division Head



Michel Chonchol, MD

This year, the division continued to meet and exceed our goals in patient care, education and research while experiencing growth and achievement in our academic programs and initiatives.

We are consistently ranked among the top kidney programs in the United States. In November 2022, the Division of Renal Diseases & Hypertension was designated as a Polycystic Kidney Disease Foundation Center of Excellence in autosomal dominant polycystic kidney disease. Our nephrology faculty also specialize in treating patients with chronic kidney disease, end-stage kidney disease, kidney transplant evaluation and post-transplant care, immune-mediated kidney disease, hypertension and kidney stones.

Programs and Initiatives

Preventing Postoperative Acute Kidney Injury

Our division, in collaboration with the Division of Cardiothoracic Surgery, Department of Surgery, has implemented a major redesign to our approach for patients at risk for postoperative acute kidney injury.

Early data from this collaboration demonstrates a marked reduction in postoperative acute kidney injury requiring dialysis in patients undergoing cardiac surgery. This impressive accomplishment has led to the opening of a new clinic where we optimize patients for surgery from the renal perspective. The assistance from Nephrology and the Division of Cardiothoracic Surgery will especially help those at high risk of developing acute kidney injury who often go on to need kidney replacement therapy or experience in-hospital mortality. The clinic will also optimize cardiovascular health and examine and treat patients with difficult-to-treat hypertension.

New Clinics

We have opened new outpatient Nephrology satellite clinics in Castle Rock and Longmont. These are two areas north and south of the Denver metropolitan area that allow us to bring our superior kidney care to the community.

Virtual Care Advantage

Our division continues to use telemedicine in the areas of both kidney transplantation and general nephrology. Virtual care has been very positive for some groups in our patient population. It has made follow-up appointments and access to specialists easier for our patients.

New Centers and Institutes

Our division is currently building a new Ambulatory Surgical Center that will help us manage vascular access in chronic hemodialysis patients. This is a joint venture between the Departments of Radiology, Surgery, Anesthesiology and Medicine, and is scheduled to open in the second quarter of 2023.

Research Innovations

Detecting Inflammation

Currently, the accurate diagnosis of inflammatory kidney diseases requires a biopsy — an invasive procedure. However, our team of scientists is developing methods to detect inflammation throughout the entire body. Such methods could enable more accurate detection of disease activity and could also reduce the need for invasive biopsies. Our team continues to

conduct basic research in animal models and in vitro systems, while corroborating findings with patient-derived samples.

Our strong funding record has allowed our scientists to continue performing experiments on human samples, and to look for the same hallmarks of immune activation that they see in disease models with new cutting-edge methods, such as spatial transcriptomics.

Polycystic Kidney Disease

Our scientists have also made groundbreaking progress in the area of polycystic kidney disease. Researchers in both basic science and clinical research have demonstrated in animal models and humans the effects of dietary caloric restriction on the progression of polycystic kidney disease. These discoveries have been significant, as initial results suggest that dietary manipulations may be more effective than FDA-approved treatments for this disease state.

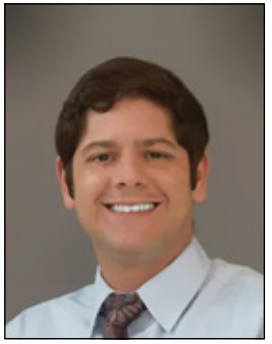
Molecular Genetics and Biology

There have been many recent advances in the understanding of the molecular genetics and biology of kidney disease, and in the diagnosis and management of its manifestations. Yet diagnosis, evaluation, prevention and treatment vary widely. And perhaps more importantly, there are barriers to translation of basic science breakthroughs to clinical care.

Evidence indicates that these barriers may be overcome by a multidisciplinary team approach to discovery, with all relevant basic and clinical scientists in one center. Because we have all of these key ingredients at CU, we have an ambitious vision of becoming one of the top kidney research centers in the U.S. We are uniquely positioned with an infrastructure capable of translating important basic scientific discoveries into improvement of clinical outcomes in patients with a variety of kidney disease.



Ruth Campbell, DO



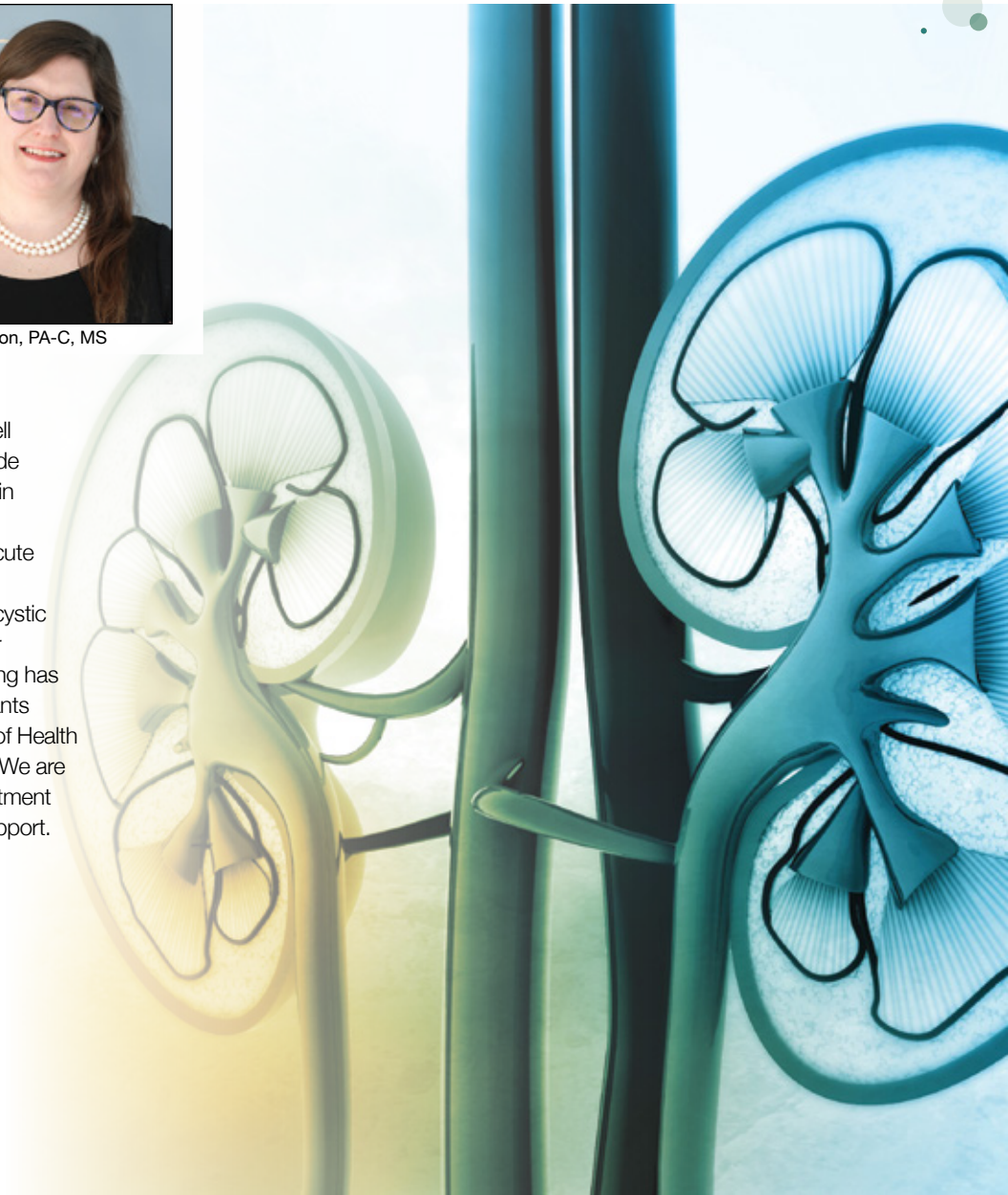
Sixto Giusti Torres, MD



Erin Lennon, PA-C, MS

Funding

We have done extremely well in obtaining funding for a wide spectrum of research, both in basic science and in clinical investigations focused on acute kidney injury, chronic kidney disease, hypertension, polycystic kidney disease and vascular disease. Our research funding has surpassed $14 million in grants from the National Institutes of Health and other federal agencies. We are ranked second in the department for research funding and support.







Stefanie Maloney, DNP, NP-C



Maria Kaplan, PA-C



Ashley Quidaciolu, NP, MSN

Research Training/Mentorship for Junior Faculty

Our division remains committed to training and mentoring junior faculty to become successful academicians. This year, one of our junior faculty members will successfully transition from a K to an R01 award, becoming an independent investigator. The division also has a vibrant and successful T32 training grant which has supported many postdoctoral fellows and physician-scientists in securing time, resources and funding for their careers.

Faculty Recruitment

In 2022, our division hired **Ruth Campbell**, DO, assistant professor of medicine, and **Sixto Giusti Torres**, MD, assistant professor of medicine. In addition, we hired four new advanced practice practitioners: **Erin Lennon**, PA-C, MS, senior instructor, **Stefanie Maloney**, DNP, NP-C, instructor, **Maria Kaplan**, PA-C, instructor and **Ashley Quidaciolu**, NP, MSN, instructor.

Training the Next Generation

Education Day

We have recently applied new approaches to our medical education strategy. We now have dedicated specific days as 'Education Days' for the renal fellows, allowing them to meet one-on-one with faculty members with different areas of expertise. While we have transitioned to a hybrid approach, we now ask renal fellows in training to present their research or grand rounds in person to foster community and dynamic learning.

Nephrology Clinical Fellowship Program

We have a robust Nephrology Fellowship Program that trains fellows in a wide variety of kidney, hypertension, transplant and fluid and electrolyte disorders alongside faculty dedicated to fellow education. Our program remains highly competitive, and we continue to match top candidates and fill all of our positions for training.

Members of the Division of Renal Diseases & Hypertension

Sophia Ambruso Assistant Professor
Emily Andrews Research Services Manager
Jenna Angerstein Instructor
Daniel Atwood
Research Services Senior Professional
Anip Bansal Associate Professor
Michael Berger
Research Services Entry Professional
Birgit Bispham Senior Instructor
Judith Blaine Professor
Rebecca Borja
Business Services Senior Professional
Kathleen Brady Assistant Professor
Betsy Britz Instructor
Vienna Brunt Assistant Professor
Ruth Campbell Assistant Professor
Teresa Campbell
Research Services Principal Professional
Laurence Chan Professor
Cara Chao Senior Instructor
Anjana Chaudhary
Research Services Entry Professional
Annie Chen Assistant Professor
Erin Coleman
Research Services Senior Professional
James Cooper Professor
Katie Cornish
Academic Services Principal Professional
Katie Cruz Instructor
Nidhi Dwivedi Instructor
James Dylewski Assistant Professor
Charles Edelstein Professor
Aubrey Evans
Research Services Entry Professional
Beverly Farmer Research Services Manager
Heather Farmer-Bailey Instructor
Sarah Faubel Professor
Seth Furgeson Associate Professor
Elizabeth Flanigan Assistant Professor
Ryan Flood Assistant Professor
Gabriela Garcia Associate Professor
Philippe Gauthier Assistant Professor
Diana George
Research Services Senior Professional
Berenie Gitomer Professor
Sixto Giusti Assistant Professor
Carol Greenwald Professional Research Asst
Robel Habte
Business Services Program Director
George Haddad Research Associate
Zhibin He Research Services Senior Professional
Jill Herch Research Services Senior Professional
Katharina Hopp Assistant Professor
Swati Jain Research Senior Instructor
Alkesh Jani Professor
Richard Johnson Professor & Endowed Chair
Anna Jovanovich Associate Professor
Maria Kaplan Instructor
Madison Kachel
Research Services Entry Professional
Bruce Kaplan Professor
Audrey Keenan
Research Services Senior Professional
Jessica Kendrick Professor
Lisa Kornfeld
Research Services Program Manager
Krystal Kramer
Business Services Senior Professional
Tyler Hinthorn
Research Services Entry Professional
Jennifer Laskowski
Research Services Principal Professional
Erin Lennon Senior Instructor
Linda Lewis
Research Services Senior Professional
Stuart Linas Professor & Endowed Chair
Li Lu Research Services Senior Professional
Sizhao Lu Instructor
Stefanie Maloney Instructor
Gladiz Martinez Clinical Instructor
Marleen Miller
Business Services Senior Professional
Makoto Miyazaki Professor
Shinobu Miyazaki-Anzai
Research Services Senior Professional
John Montford Assistant Professor
Marie-Louise Monaghan
Postdoctoral Fellow
Andre Navarro
Research Services Senior Professional
Raphael Nemenoff Professor
Dustin Nguyen
Research Services Senior Professional
Tysen Noble
Research Services Entry Professional
Kristen Nowak Associate Professor
Yves Ochoumare
Research Services Principal Professional
Franklin O'Donnell Instructor
Ester Oh Postdoctoral Fellow
Kayo Okamura
Research Services Senior Professional
Connor O'Leary
Research Services Entry Professional
Vojtech Petr Postdoctoral Fellow
Betsy Pike HR Principal Professional
Amber Podoll Associate Professor
Felix Poppelaars Instructor
Ashley Quidaciolu Instructor
Kathryn Rafferty Senior Instructor
Rachael Reddin
Research Services Professional
Brandon Renner
Research Services Program Manager
Carlos Roncal Associate Professor
Rachel Rucker Instructor
Cortney Steele Postdoctoral Fellow
Jane Stephens Research Services Professional
Erik Stites Associate Professor
Taylor Struemph
Research Services Senior Professional
Isaac Teitelbaum Professor
Joshua Thurman Professor & Endowed Chair
Mary Vierthaler Assistant Professor
Elizabeth Wagner
Research Services Professional
Wei Wang Research Instructor
Mary Weiser-Evans
Professor & Endowed Chair
Claire Winslow
Research Services Entry Professional
Zhiying You Associate Professor
Sarah Young Associate Professor
Michel Chonchol
Division Head & Endowed Chair
Charles Wright
Research Services Senior Professional

Faculty Highlights

Jessica Kendrick, MD, professor of medicine and fellowship program director, has completely revamped our educational program which has made it very successful for attracting new talent to the nephrology fellowship.

Anip Bansal, MD, associate professor of medicine, received a teaching award from the Department of Anesthesiology.

Sophia Ambruso, DO, assistant professor of medicine, received funding from the PACE program for her project: ABC Kidney PhysioSim - Development, Implementation and Assessment of an Interactive Kidney Physiology Tutorial for Undergraduate Medical Education.

Basic and Clinical Research

The mission of our division's research area is to expand cutting-edge basic and clinical investigation in nephrology.

Our basic science research efforts focus on acute kidney injury, chronic kidney disease, diabetic kidney disease, polycystic kidney disease, glomerular disease, vascular biology, cell biology, vascular calcification, transplantation, hypertension, obesity and kidney fibrosis.

Our clinical research includes trials on polycystic kidney disease pathophysiology and treatment, vascular function in patients with acute and chronic kidney disease and kidney transplantation, mineral metabolism, fluid and electrolyte disorders and dialysis.

Division of Rheumatology

Kristine Kuhn, MD, PHD | Division Head





Kristine Kuhn, MD, PhD

Our division is dedicated to improving patient outcomes, educating the next generation of rheumatologists and changing the future of rheumatic and autoimmune disease care through discovery and innovation. As part of our multidisciplinary model, we connect rheumatology providers with ophthalmologists, dermatologists, nephrologists and pulmonologists to provide optimal care for patients with rheumatologic disease.

Multiple members of the Division of Rheumatology are active in the American College of Rheumatology (ACR), which has identified critical shortages of rheumatologic care in different regions of the country. We are located in one of these regions.

Denver itself is not underserved in rheumatologic care, but once you leave the front range region, there is a deficit. In collaboration with the ACR, we are working on projects to extend virtual care and telemedicine models to increase access to areas that would not otherwise have it.

Our division also continues to be active in community outreach with the Aspen Valley Hospital, where **Duane Pearson**, MD, professor of medicine, visits once every two months to see patients for a period of two days. These efforts are integrated within our clinical practice and increase access to rheumatologic care for an underserved area of the state.

Dr. Pearson and **Melissa Griffith**, MD, assistant professor of medicine, are part of a new project called “Extension for Community Health Outcomes,” a platform for sharing critical, timely, lifesaving information and data with health care workers at different geographical locations.

Our faculty, who are directors of this project, routinely bring in other subspecialties to this effort. We see this as an opportunity to help our providers in rural areas who do not have access to subspecialty care, especially in rheumatology. This way, we can provide education and review patient cases with the providers, giving them access to a subspecialist that can help them take care of their patients.

Faculty Highlights

Master Designation

In November 2022, **Larry Moreland**, MD, professor of medicine, was awarded the Master Designation by the American College of Rheumatology, one of the highest honors the college bestows to members who have made outstanding contributions to the field of rheumatology through scholarly achievement and/or service to their patients, students and profession. Dr. Moreland’s recognition brings the total number of our faculty with this prestigious distinction to four. Additional designees are **Dennis Boyle**, MD, professor emeritus, **V. Michael Holers**, MD, professor of medicine and immunology and **Sterling West**, MD, professor emeritus.

Memorial Symposium

In October 2022, we honored **William Arend**, MD, former division head, with a memorial symposium featuring guest speakers who highlighted his contributions to the field of rheumatology. A pioneer investigator in the underlying biologic mechanisms of rheumatoid arthritis, Dr. Arend dedicated his life to teaching, research and care for patients with arthritis and other inflammatory diseases. During his 17-year tenure at the University of Colorado School of Medicine, he shared his focus on investigating the roles of inflammatory cells, particularly monocytes and macrophages. His research led to the identification and commercialization of the IL-1 receptor antagonist (anakinra), which revolutionized the treatment of many autoinflammatory diseases. Dr. Arend retired as professor emeritus in 2013.

Advancing Research

Center for Mucosal Immunobiology of Rheumatologic Disease Pathogenesis

In September 2021, our division was awarded a $3.7 million, five-year P30 grant from the National Institutes of Health to support the creation of a center that specializes in the study of the causes of rheumatoid arthritis, spondyloarthritis and other autoimmune diseases.

The Center for Mucosal Immunobiology of Rheumatologic Disease Pathogenesis will coordinate and build upon the work of more than 40 researchers who receive total annual funding of $77 million for their projects.

Our mission is to help trainees, early-career investigators and established investigators advance their capacity to conduct this type of research, with the goal of intercepting and preventing disease and identifying new treatments. We have been able to provide micro-grants and pilot grant funding to campus investigators, which has resulted in impactful publications identifying how mucosal bacteria could contribute to the development of rheumatoid arthritis.

NIH Accelerating Medicines Partnership

Dr. Moreland is the principal investigator of a subcontract with the National Institutes of Health Accelerating Medicines Partnership Autoimmune and Immune-Mediated Diseases.

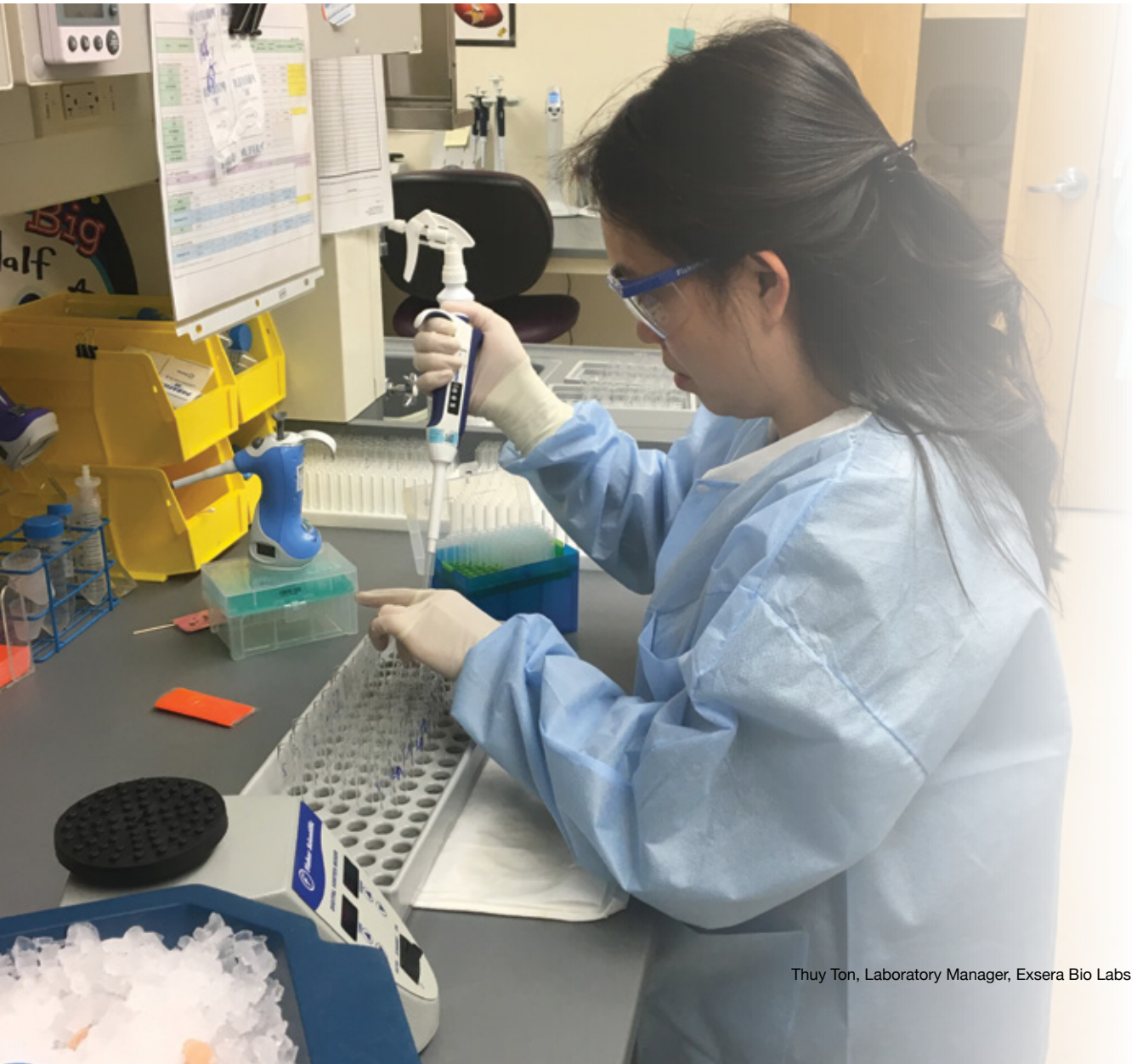
Launched in 2021 to deepen our understanding of the cellular and molecular interactions that lead to inflammation and autoimmune diseases, the subcontract will extend our involvement in this innovative program. And it will allow us to study the molecular features of inflamed tissues of the joint in individuals with rheumatoid arthritis and psoriatic arthritis to better understand such diseases, and to initiate precision medicine to match the patient with the right therapeutic.

Spondyloarthritis

This year, we had some exciting news. The Shear Family Foundation has committed a gift of $900,000 over the next three years to support research in spondyloarthritis, a type of arthritis that attacks the spine and, in some people, the joints of the arms and legs. Our division, which houses the University of Colorado Program for Advancing Spondyloarthritis Treatment, is committed to identifying individuals at risk for developing spondyloarthritis, determining the best treatment plan and prevention of the disease.



Melver Anderson, MD, at the 2nd Annual Sterling G. West Symposia.



Thuy Ton, Laboratory Manager, Exsera Bio Labs

StopRA

A study, called StopRA, led by **Kevin Deane**, MD, professor of medicine and endowed chair, is the first prevention research study for rheumatoid arthritis conducted in the United States. Findings of this highly anticipated study were presented at the American College of Rheumatology Convergence in November 2022. This work has provided more information about who is at risk for developing rheumatoid arthritis and will inform future prevention studies.

Research Funding

We have renewed our NIH T32 training grant, which means we will have consecutive T32 funding for 40 years. Dr. Holers is the principal investigator of this grant which enables research training for pre- and postdoctoral PhD scientists, medical students and rheumatology fellows.

Developing Educational Programs

Rheumatology Fellowship Program

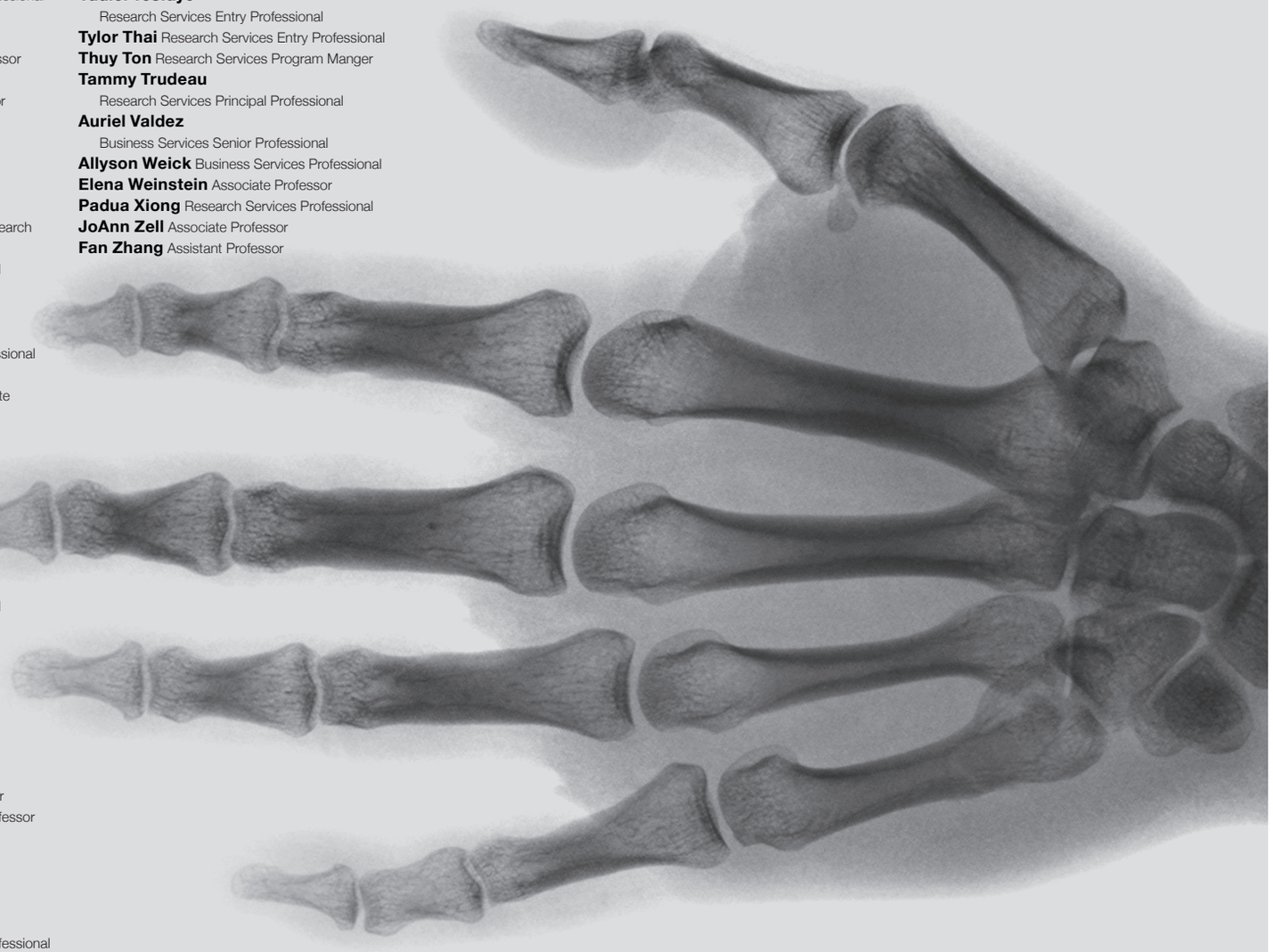
Our division has welcomed three new fellows to our Rheumatology Fellowship Program, which continues to educate the next generation of rheumatologists and researchers through interactions with the Department of Medicine Residency Program and the University of Colorado School of Medicine. Our clinical training opportunities exist at three separate hospitals: the University of Colorado Hospital, Denver Health Medical Center and the Denver VA Medical Center, exposing our trainees to a wide range of inflammatory and non-inflammatory rheumatic conditions.

Jason Kolfenbach, MD, fellowship program director and associate professor of medicine, is involved in an educational grant from the Rheumatology Research Foundation. A recipient of the Clinician Scholar Educator Award, he is developing a formal education program encompassing virtual and video clinical visits, e-consults and tele-education to improve training knowledge and skills in these areas.

Looking ahead, we plan to focus our efforts on addressing regional needs to provide more access to rheumatologic care through expansion of clinical offerings, growing our research program and continuing to provide outstanding clinical and research training in rheumatology.

Members of the Division of Rheumatology

Brendan Allen
Research Services Entry Professional
Kristen Allison
Research Services Senior Professional
Justin August
Research Services Senior Professional
Nirmal Banda Professor-Research
Mandi Burcl
Research Services Entry Professional
Liron Caplan Associate Professor
Ruth Carver Bondurant
Research Services Professional
Toshia Chavez Research Services Senior Professional
Susan Boackle Professor
Andrew Clauw Research Services Professional
Bethany Coppley
Research Services Senior Professional
Megan Criley Research Services Entry Professional
Lisa Davis Associate Professor
Kevin Deane Professor & Endowed Chair
Kristen Demoruelle Associate Professor
Marie Feser
Research Services Program Manager
Carissa Figal Business Services Program Dir
Karen Franklin
Research Services Senior Professional
Ashley Frazer-Abel Assistant Professor
Rachael Fuhrman
Business Services Senior Professional
Thomas Galway
Research Services Principal Professional
Barbara Goldstein
Assistant Clinical Professor
Jody Gould
Research Services Principal Professional
Connor Graber
Research Services Senior Professional
Melissa Griffith Assistant Professor
Alyssa Haberle
Research Services Program Manger
Isaac Harley Assistant Professor
Brian Hattel
Research Services Senior Professional
Joel Hirsh Associate Professor
V. Michael Holers Professor & Endowed Chair
Jun Inamo Postdoctoral Fellow
Jaida Johnson Business Services Professional
Prakriti Joshee
Research Services Senior Professional
Liudmila Kastsianok Assistant Professor
Ferougg Khaaliq Instructor
Jason Kolfenbach Associate Professor
Tyler Kim
Clinical Instructor
Revanth Krishna IT Professional
Kristine Kuhn
Associate Professor & Division Head
Liudmila Kulik Assistant Professor-Research
Paige Lacysevera
Research Services Principal Professional
Cassandra Levens
Research Services Senior Professional
Sucai Liu Research Associate
Claudia Lugo Research Services Professional
Meredith Marcos Assistant Professor
Valerie Minarchick Research Associate
Larry Moreland Professor
Laurie Moss
Research Services Senior Professional
Marcella Pacheco
Research Services Senior Professional
Mark Parish
Research Services Senior Professional
Duane Pearson Professor
Chong Pedrick
Research Services Principal Professional
Itziar Quinzanos alonso Instructor
Linda Rodamaker Senior Instructor
Jennifer Seifert
Research Services Program Manager
Marguerite Siedschlag
Research Services Entry Professional
Andrew Stahly
Research Services Senior Professional
Jennifer Stichman Assistant Professor
Christopher Striebich Associate Professor
Kasha Strong Research Services Entry Professional
Kristin Sturm
Research Services Program Manager
Yui Sugawara Postdoctoral Fellow
Celi Sun Research Services Principal Professional
Hideto Takada Postdoctoral Fellow
Yadiel Tesfaye
Research Services Entry Professional
Tylor Thai Research Services Entry Professional
Thuy Ton Research Services Program Manger
Tammy Trudeau
Research Services Principal Professional
Auriel Valdez
Business Services Senior Professional
Allyson Weick Business Services Professional
Elena Weinstein Associate Professor
Padua Xiong Research Services Professional
JoAnn Zell Associate Professor
Fan Zhang Assistant Professor




UNIVERSITY of COLORADO HOSPITAL
ANSCHUTZ INPATIENT PAVILION
UNIVERSITY of COLORADO HOSPITAL

Department of Medicine

Vice Chairs

Clinical Affairs

Richard Albert, MD | Vice Chair





Richard Albert, MD



Eddie Stenehjem, MD

The Office of the Vice Chair of Clinical Affairs has focused this past year on efforts aimed at improving access to the primary care and medicine subspecialty clinics in the Department of Medicine. This work began by first understanding what a faculty member's clinical obligations were and whether there were gaps, and if not, how we could recruit additional providers to support clinical needs.

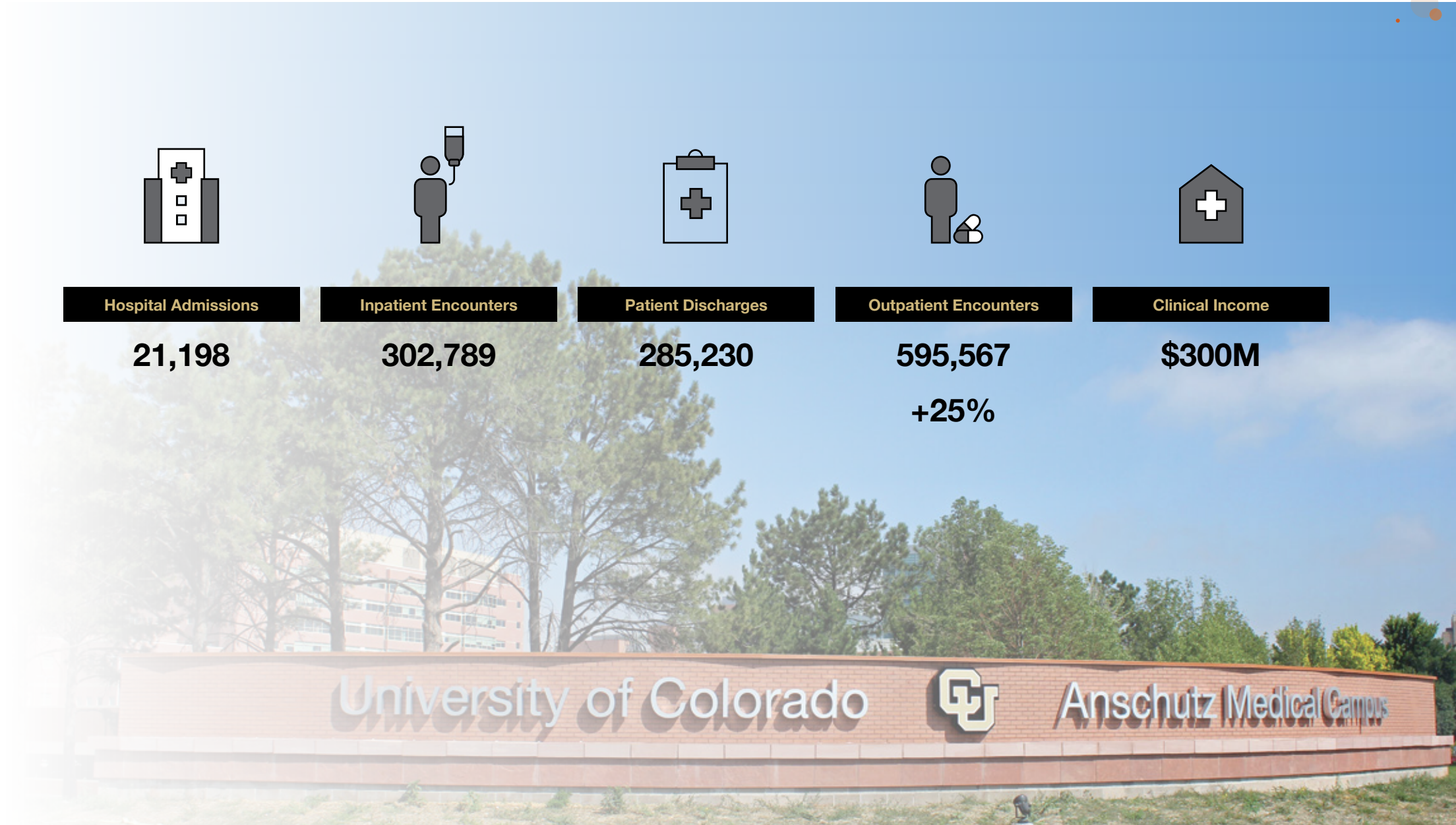
We have developed new guidelines and expectations in the form of departmental policies and have also revised our offer templates to be more transparent about such expectations. As a result, we have been able to improve access to most of our clinics within 14-days. These efforts represent closer alignment and activities with UCHealth and the School of Medicine, for which the Department was proud to lead.

Together with **Michael Ho**, MD, PhD, professor of medicine and vice chair of quality, we have focused on improving patient flow and metrics related to inpatient care. For example, we are aiming to increase the fraction of subspecialty consultations addressed the same day as requested. We have worked closely with UCHealth to better design this metric and the divisions to modify clinical workflows.

The University Hospital has remained at 105 percent to 115 percent capacity daily for over a year. This has resulted in many patients having extended wait time in the Emergency Department after being admitted. Hospital administration has tried various approaches to facilitating earlier discharges. A recently published randomized trial by the Division of Hospital Medicine found that altering morning rounding schedules, such that patients ready for discharge were seen first had no effect on discharge times. Subsequent efforts are aimed at determining if discharge time is linked to a yet-to-be-defined optimal workload.

Our faculty continue to garner exceptional local, regional and national awards. We celebrated many of these individuals at our Faculty Recognition Event, where innovators, outstanding educators, scholars, rising stars and exceptional service to the department and beyond were recognized. This remains a special evening and celebration, and we were happy to be able to convene in person in 2022 for this event.

We look forward to welcoming **Eddie Stenehjem**, MD, Professor of Medicine from Intermountain Health, as incoming Executive Vice Chair who will oversee Clinical Affairs in the Department of Medicine moving forward.



Hospital Admissions	Inpatient Encounters	Patient Discharges	Outpatient Encounters	Clinical Income
21,198	302,789	285,230	595,567	$300M
			+25%	

Quality & Safety

Michael Ho, MD | Vice Chair



Michael Ho, MD, PhD

The mission of the Department of Medicine Quality Patient Safety Program is to promote a culture of patient safety, quality improvement and systems innovation among department faculty, trainees and staff through data-driven support and patient-centered high-value care. To achieve these aims we offer several quality and patient safety programs, including the Quality Council; Leaders of Informatics, Quality and Systems (LINQS) Fellowship; Systems Improvement Conference; Shark Tank Competition; and Research Day.

Quality Council

This year the department formed the Quality Council, bringing representatives from each of our clinical divisions who lead quality efforts into a central body. Quality Council members are appointed by the division head and the clinical directors for each division. Their focus is on addressing and improving quality metrics defined each year by the University of Colorado Hospital and the School of Medicine. These metrics are broken down by gateway metrics and performance metrics, and each department is required to meet its gateway metrics in order to receive incentive dollars for quality, which is based on performance metrics.

Systems Improvement & Collaborative Case Review Conference

The mission of our department's Systems Improvement & Collaborative Case Review Conference is to establish an academic venue to identify areas for improvement in patient care, while promoting professionalism, integrity and transparency. This conference has long been a step above the traditional M&M model, which focuses on error identification without the lens of just culture to address opportunities for system changes, rather than individual failures.

The conference occurs on the second Tuesday of every month, beginning in July of each academic year. Typically, we have a trainee present the case, and then volunteer faculty members walk through the case and lead the discussion about potential systems issues. From there, we focus on opportunities for improvement. And once that discussion is complete, our team sets out to remedy systems issues, together with the hospital quality team to develop solutions.

Leaders of Informatics, Quality and Systems Fellowship

The Informatics, Quality and Systems (LInQS) Fellowship program aims to develop department fellows and junior faculty members into academic leaders in quality improvement, clinical system design, complex learning health care systems, clinical informatics and patient safety. The fellowship is a two-year program in which we provide didactics, longitudinal mentorship and hands-on training from faculty mentors with diverse expertise.

To date, 10 fellows have completed the program: four have submitted manuscripts for publication; five have completed the Epic Physician Builder course; one has applied for informatics board certification; another has applied for the National Specialty Society award; and 13 have participated in the Institute for Healthcare Quality, Safety and Efficiency (IHQSE) Foundations in the Healthcare Leadership course.

Shark Tank Competition

The annual Shark Tank Competition was initiated in 2016 to identify quality improvement projects led by departmental faculty and trainees that promote high-value care. High-value care is evidence-based, and comprises clinical practices that improve patient outcomes while reducing costs of care.

For each competition, we select four to five finalists to share their 'pitch' with an esteemed panel of sharks. The sharks, a group of quality leaders from the University of Colorado Hospital, affiliated hospitals and SOM, choose the winning project, which then receives support for one year from the department's quality team. This support includes coaching, data prioritization, analytics development, visibility within UCHospital as well as possession of the coveted shark tank trophy.

The 2021–22 winner was Standardizing OPAT Discharge Process for Patients Leaving with IV Antibiotics. **Lorna Allen**, FNP-C, is leading this project to create an OPAT-specific note template to eliminate inefficiency and inaccuracies while streamlining the discharge process.

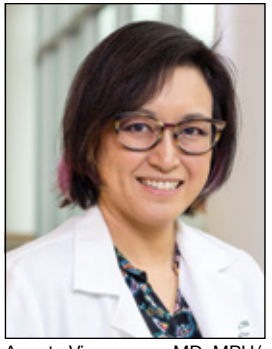
Quality in Research Day

We emphasize the presentation of quality improvement work within the department's research day. Themes include COVID-19 vaccine disparities, clinical decision support, transitions of care, post-discharge follow-up and advanced care planning.

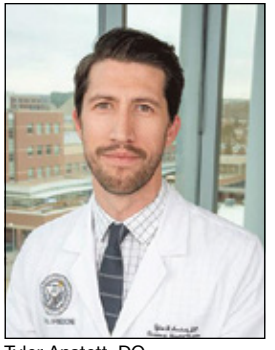
Looking Forward

One of the greatest opportunities in the department is to develop more faculty members who are interested in quality improvement as a career destination. This includes developing their skills in quality, as well as developing leadership and organizational skills. We also aim to increase the visibility of our work in scholarly journals by publishing our successes and lessons learned in various settings. In the next five years, we aim to become a national beacon for quality and safety and the pre-eminent department for training future quality leaders.

Associate Vice Chairs of Quality



Anunta Virapongse, MD, MPH/MSPH



Tyler Anstett, DO



2023 Shark Tank Panel set up and ready to hear lightning talks from finalists and select the winner!

Research & Innovation

Janine Higgins, MD | Vice Chair



Janine Higgins, PhD

By the Numbers

$356.9M
Total Research Funding

2,482
Peer-Reviewed Articles

23rd
National Blue Ridge Ranking

1,339
Active Clinical Trials

795
Individual NIH Awards

37
Invention Disclosures

384
Investigators

18
Patents Pending

The Department of Medicine Research and Innovation team comprises **Janine Higgins**, PhD, vice chair for research; **Mary Weiser-Evans**, PhD, associate vice chair for research, focusing on T0-T1 research; **Fernando Holguin**, MD, associate vice chair for research, focusing on T2-T4 research; **Jenny Kemp**, PhD, research office director; and **Alesia El Ali**, research office program and grants manager.

Our goal is to become a national leader and model across the entire research spectrum within the next five years. To achieve this transformational milestone, we embarked on an extensive listening tour during the months of November and December 2022, with faculty and staff engaged in research across all divisions within the department. This effort was specifically designed to allow us to identify and address barriers to optimal productivity for our investigators, and to ultimately increase collaborative, team-based research between divisions and other CU Anschutz Campus departments.

Thanks to enthusiastic engagement from our research community, we received over 1,000 comments, which fell into five major themes: research infrastructure, funding, connectedness and communication, career development, researcher morale and value of research. These themes are now being used to develop the department's Research Strategic Plan.

By defining successful elements as well as major drivers of dissatisfaction in the current research enterprise, the department aims to increase the productivity and satisfaction of our investigators so as to allow them to make new scientific discoveries, increase our research portfolio and national research rankings.

Innovation in Research

Translational Research

We have an exceptional cadre of researchers working across the translational research spectrum. Our investigators span T0-T4 research — from basic research at the bench to preclinical work using animal models of disease to clinical research to identify the underlying disease mechanisms, therapeutics and cures.

We have a growing and rising cadre of health services researchers, or T3/4 research, who bring information from preclinical and clinical research to the patient and community. Because we have this wealth of valuable research across the entire translational research enterprise, we have a continuous pipeline of questions we're all striving to answer. The more science we do, the more our research can impact day-to-day lives of those we care for, which is a priority for research and innovation within the department.

Research Funding

The department currently has 795 NIH-funded research projects, and 1,339 clinical trials sponsored by drug or biomedical startup companies. Some of these companies are started by our own researchers in-house to develop products they think can help patients or the community. Our current NIH research funding places us 23rd in the nation according to the Blue Ridge Institute rankings for clinical departments of medicine. Our goal is to increase our national ranking by growing all areas of external funding in the future.

Focus on Research Teams

People always think of the medical doctor in the clinic with the white coat trialing a new vaccine or drug with a patient. But behind that clinical interaction are large, multidisciplinary research teams who cannot make these discoveries without the expertise of each team member. Similarly, in the department, we are fortunate to have MD and PhD faculty who come up with the research questions: everything from basic research on the bench to implementation and assessment of the cost benefit of new therapies.

We have highly specialized biostatisticians and bioinformaticists who facilitate the analysis of all the data we generate from our research and use large datasets to reveal new areas of investigation. We also have clinical and laboratory research professionals who critically assess the data behind the scenes, organize everything needed for an experiment to happen, and recruit participants for studies, scheduling and conducting study visits. Added to this, we have research administrators who work with our faculty on funding applications and then administer the finances once grants are funded. Collectively, we are a research community. It is important to our future goals to keep this community thriving and growing by investing in the entire research ecosystem.



Research Day 2023



Faculty Affairs & Mentorship

Sunita Sharma, MD | Vice Chair



Sunita Sharma, MD



Vice Chairs Sunita Sharma, MD, Christine Jones, MD, MS, and Gregory Austin, MD, MPH, acting as panelist for the 2023 Mentorship Academy, a partnership between the University of Colorado and University of Michigan

In July 2022, Sunita Sharma was appointed vice chair for faculty development and mentorship for the Department of Medicine. "I am excited to work with our leadership and our incredible faculty to develop programs to enhance faculty development and mentorship across the department," says Dr. Sharma. "Our team, which includes Lynette Brandon, PHR, SHRM-CP, our department's human resources program director, and Eleanor Olthoff, MS, Organizational Leadership, is focused on developing innovative faculty development programs, defining optimal mentorship strategies and creating pathways for faculty recognition and leadership development."

Promotion Process

The academic promotion and tenure process seeks to recognize an individual faculty member's contribution to the profession of medicine. Given the importance of promotions and tenure, the department has focused on developing a more streamlined process for the department. The goal of these activities is to demystify the promotion process for our faculty, with a variety of educational resources aimed at making it more transparent and efficient.

Comprehensive Midcourse Review

A comprehensive midcourse review is conducted in year three or four of a faculty member's assistant professorship. This process includes a review of academic productivity, feedback on readiness for promotion and discussions with a group of senior faculty who provide guidance regarding advancement to associate professor. The goal of the midcourse review is to understand what an individual's career development goals are, and what they envision for themselves in terms of their advancement in academic medicine.

Faculty Recognition Awards

The Faculty Recognition Awards are an annual opportunity to recognize the exceptional talent of the faculty in the Department of Medicine. This past year, faculty were honored with a variety of clinical and research awards.

DOM Rising Star Award

The Rising Star Award recognizes outstanding early-career faculty members who exemplify the department's core values of excellence in patient care, research, education and community outreach and are dedicated to service and citizenship.

Recent awardees have been recognized for their innovative approach to curriculum design and scholarly work in medical education; advances in clinical, basic and translational sciences related to infectious diseases; endocrine disorders; critical care sciences; and bioethics, among others.

Advanced Practice Provider Award

The Advanced Practice Provider Award recognizes individuals who have done innovative clinical work in their respective divisions that has furthered the impact of the department. This is an opportunity for both nurse practitioners and physician assistants to be celebrated for their tremendous efforts. This year's awardees demonstrated true excellence in clinical care of patients with complex cardiac diseases and in the care of patients with cancer.

Faculty Innovator Awards

These awards recognize faculty who have demonstrated

outstanding innovation in clinical care and research. This year's awardees have had tremendous impact on the department through their initiatives focused on the development of therapies for patients with HIV, improving metabolic outcomes in older adults through exercise and improving quality of life through innovative home health initiatives.

Volunteer Faculty Recognition Award

The department is fortunate to have a large group of volunteer clinical faculty who demonstrate excellence in clinical work and make ongoing and significant contributions to the mission of the department. The annual faculty recognition event is one opportunity to recognize these incredible clinicians.

Programs and Initiatives

The Career Cornerstones Program provides a number of faculty development offerings for early-career faculty.

The Program to Advance Gender Equity is a career development initiative for women that are mid-career.

The Junior Mentorship Initiative is focused on providing the skills individuals need to achieve the types of careers they want.

Advancing Careers Through Mentorship

Mentorship is essential to professional development and the achievement of individual career goals. Considerable effort is being put into the concept of consistent mentorship for department faculty. In addition to ideas such as launch teams for new and early-career faculty, content is being developed to improve skills for mentors and mentees across the department.

Mentorship Academy

The department is focused on developing innovative programs that enhance mentee and mentor skills across the department, and co-lead the CU/UM Mentorship Academy, a joint venture with the University of Michigan Department of Surgery.

The academy features experts who, through TED-style talks, highlight strategies and skills for exemplary mentorship and menteeship. The goal is to provide mentorship strategies and tools that will help develop a new generation of mentors in leading academic medicine into the future.

MENTORSHIP ACADEMY

The theme for this year's academy, held in October 2023, is "Moving Together: Climbing the Mentorship Mountain." The program will emphasize the importance of teamwork in achieving academic success and examine how to create the optimal mentoring team and how best to harness the benefits of team-based mentorship.

Faculty

2,240

Faculty Across All Affiliates

73

Faculty Promotions, Appointments & Tenure



Rising Stars, Staff and Faculty Innovator awardees at the 2022 Faculty and Staff Recognition Celebration.

Education

Geoffrey Connors, MD | Vice Chair



Geoffrey Connors, MD

By the Numbers

188
Residents

156
Graduate Fellows

The Department of Medicine encompasses a wide-ranging undergraduate and graduate medical educational mission. Roughly one-quarter of the graduating University of Colorado Medical School class goes into the field of internal medicine every year.

The core of our educational mission is rooted in the three-hospital model. This includes training at Denver Health and Hospital, a national top-10 safety net institution; UCHealth, the large quaternary referral center serving Colorado and eight neighboring states; and the experience of working with veterans through the Rocky Mountain Regional VA Medical Center.

Undergraduate Medical Education

Longitudinal Integrated Curriculum

The University of Colorado School of Medicine became the first in the nation to use an all-longitudinal integrated curriculum model to train its students. This design features a mix of immersive medicine experiences and longitudinal preceptorships to create the 'modern physician' — doctors who are not only excellent bedside clinicians, but also well-versed in drivers of health and well-being.

Graduate Medical Education

Internal Medicine Residency Program

One of the largest in the nation, the department's Internal Medicine Residency Program focuses on the four pillars of health care at the University of Colorado: the advancement of the biomedical sciences, educational innovation, excellence in patient care and physician advocacy. Approximately 172 doctors in the field of internal medicine are trained every year, across a three-year residency training program. The department has the unique ability to train residents at all three main clinical sites, seven associated clinics across metropolitan Denver and at affiliated partner National Jewish Health.

The training program is unique, both in the way residents are scheduled and in the curriculum provided. The goal of the residency program is to move beyond the traditional apprenticeship model so as to create a well-rounded, highly capable physician. Residents thus excel not only in clinical care, but also in medical education, research and scholarship, quality and safety, health care delivery, health policy and patient advocacy.

Residency Tracks

The residency program consists of four different tracks. There is a categorical training track, which is a traditional residency experience and a primary care track that develops primary care doctors for both urban and rural patient care experiences. The department is also home to the nation's very first hospital medicine track that trains physicians to work as hospitalists or subspecialists who focus on inpatient care. There is a physician-scientist training program, which is for MD-PhDs who plan to combine clinical careers with careers in basic science. And the MD-PhD training is complemented by an NIH-funded R38 program for those who become interested in careers as physician-scientists later in residency training.

Residency Pathways

Residents also have the opportunity to choose deep-dive educational experiences in medical education, research and investigation, medical leadership, global health and health equity and policy. All five

pathways are open to all four tracks, creating a matrix of 20 personalized educational experiences available to each trainee.

Chief Medical Residents

The department appoints seven chief medical residents per year, including six traditional chiefs, as well as a chief resident in quality and safety. A diverse group of residents in all ways, they represent the future of medicine and embody the best of what Colorado does.

Fellowship Programs

The department annually trains approximately 150 graduate fellows across all the subspecialty disciplines of internal medicine. Fellowship programs also leverage the many training sites across Denver and focus not only on excellence in patient care, but also research, development and educational innovation. Graduates in training programs hail from nearly all 50 states and many nations across the world.

Adjunctive Educational Experiences

In addition to traditional fellowship programs, several adjunctive educational experiences are also available. These include non-ACGME accredited fellowships in information sciences, quality and safety, medical education, evidence-based medicine, point of care ultrasound, global health, interventional pulmonology, transplant infectious diseases and more.

Diversity, Equity and Inclusion

Diversity, equity and inclusion is embedded in the work of the department for two main reasons: First, it's clear that patients get better care when they're attended to by doctors who look like they do or who fundamentally understand their lived experiences. It is important to help create those doctors in order to improve the health of society. Second, it is equally important that residents and fellows are part of a diverse student body, so that while they're learning medicine, they are also able to learn from one another and grow.

A holistic review process is employed in recruiting for all of residency and fellowship positions, which means looking to understand a trainee's lived work and experiences. Diversity in race, ethnicity, gender or sexual orientation is only the beginning; the department is looking to train doctors with disabilities, doctors from diverse cultures and socioeconomic backgrounds who are often the first in their families to go to college or medical school.

The department prides itself on being at the forefront of medical education and physician training nationally. Colorado can be educational leaders and model for the country how to train physicians in a way that values exceptional inpatient and outpatient care, as well as the need to create smart, kind, caring and well-rounded doctors.



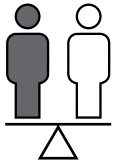
Residents and David Schwartz, MD, MPH engaging in conversation at Careers in Academic Medicine (CAM) Nights hosted by Dr. Schwartz.



Fellows during a hands-on learning session

Diversity, Equity, Inclusion & Justice

Sonia Flores, PhD | Vice Chair



Diversity, Equity, Inclusion & Justice

20+%

Residents identify as URIM

30%

Fellows identify as URIM



Sonia Flores, PhD

Diverse voices among faculty, trainees and staff promote cultural competency throughout the department, help care for our patients, support research impacting underrepresented populations and encourage trainees and faculty to find ways to reduce health disparities. More importantly, diverse voices make doctors better clinicians, educators and investigators, and allow us to build meaningful bridges with the surrounding community.

When Dr. Sonia Flores was appointed vice chair for Diversity, Equity, Inclusion and Justice (DEIJ) in the Department of Medicine in 2016, her mission was to do away with using diverse individuals as tokens or for just checking boxes, and make DEIJ part of the departmental DNA.

At that time, there was very little being done department-wide, and even less within the divisions. “Today,” Dr. Flores says, “as I look at our 14 divisions, I know that has changed. All of our divisions are committed to diversity and understand its importance. We have gone from something that wasn’t on anyone’s radar, to something that everyone is now actively practicing or thinking about.”

Reducing Bias

The department is currently conducting a series of workshops with faculty, staff and fellows across the divisions that focus on bias in the workspace and how to mitigate those biases. This work also includes efforts to educate faculty on how to speak up whenever one witnesses microaggressions or biased behaviors from patients or colleagues.

In December 2018, the department began participating in the Bias Reduction in Medicine (BRIM) program. The program includes an evidence-based workshop about how to recognize and define biases, and how to intervene with the goal of improving the climate.

After participation by half of the divisions, the pandemic forced a change from in-person to virtual meetings. It was difficult for the divisions to participate during the middle of the pandemic — certainly not as easy as it was prior to that time, primarily because many faculty were hard at work in the hospital caring for patients hospitalized with COVID-19. This prolonged the duration of the program from the typical two years to three years, and involved a great deal of coordination, to deliver these workshops to the rest of the divisions.

The BRIM program was completed in September 2021; significant improvements in climate were found through surveys performed across divisions: a monumental amount of work. Today, the department can compare data across all the participating institutions and learn best practices from each other.

Diversity Council

An important area of growth for the department is to infuse principles of DEIJ into every aspect of research, education, citizenship, service and clinical activity. Equally important is to define a way to assess the impact of the programs developed.

New this year was the formation of the Diversity Council, which includes representation from faculty and staff across all sites. The council is tasked with designing and leading efforts, including those internal to the department such as environmental scans and hiring practices and those external such as new programs and engaging communities. Among the reasons for the formation of the council was to create bi-directional communication and coordination between divisions and the department.

The council is doing a tremendous job. One of the subcommittees is gathering data from surveys so that new policies can be implemented based on survey findings. Also, based on the survey, a lot of work has been done in the wellness space around burnout, with a special focus on how some of these issues have disproportionately affected women and individuals who are underrepresented in medicine.

Moving forward, the department will strive to be more systematic in terms of documentation of the programs delivered and the workshops facilitated so impact can be empirically evaluated. Having the council now provides a venue and opportunity to do this by engaging numerous voices and stakeholders.

DEIJ is no longer just a concept, but has become infused into everything the divisions do.

Residency and Fellowship Programs

Diversity, equity, inclusion and justice are not just important at the faculty level, but at staff and trainee levels as well. The residency program and subspecialty fellowships in various divisions are increasingly following best practices for recruitment. We are all paying more attention to having a diverse pool of candidates and selecting diverse trainees across all divisions.



Sonia Flores, PhD alongside participants in the Graduate Experiences for Multicultural Students at the end of the 2022 summer program.

Community Practice

Gregory Austin, MD | Vice Chair



Gregory Austin, MD



As vice chair for community practice in the Department of Medicine, Gregory Austin is charged with coordinating and expanding the provision of services outside the UCHealth Anschutz Medical Campus. Over the past five years, this has been the clinical area that has grown the most. For example, services were expanded in two major locations: the Highlands Ranch Hospital (HRH) in the south Denver metropolitan area, and the Cherry Creek Medical Center, which is halfway between the Anschutz Medical Campus and downtown Denver.

Range of Services

The expanded services offered at these two sites are broad and include gastroenterology, cardiology, medical oncology, hematology, endocrinology, pulmonary, nephrology and palliative care. Despite the pandemic, there has been robust and growing clinical activity at both sites.

Additionally, there is a freestanding general internal medicine clinic in the Cherry Creek area, and two freestanding nephrology practices in Longmont and Castle Rock. The goal over the next three to five years is to strengthen the department's presence in the community and strategically grow practices off the Anschutz Medical Campus.

Growing Highlands Ranch

The most immediate expansion of these existing services will occur at HRH. The inpatient capacity will be increased by approximately 50 percent in the fall of 2023, and the Cancer Center at that site will soon have expanded its infusion capacity.

The medical oncology and hematology programs, led by Wells Messersmith, MD, professor of medicine, and Craig Jordan, PhD, professor of medicine, respectively, are already seeing a record number of patients at this location. The additional space and capacity will likely serve to keep up with the strong demand in these areas.

Planning for additional medical office space and a freestanding ambulatory surgical center for gastrointestinal procedures at HRH is also underway. This new facility is expected to open in early 2025, with planning already initiated, and the department expects to be a key player in this environment.

Additionally, HRH is currently building what will be a state-of-the-art facility for advanced interventional and electrophysiology cardiology procedures, expected to open in mid-2025. In partnership with the Division of Cardiology, the department plans to add physicians and advanced practice providers to this site to take advantage of these new facilities. Most of the advanced electrophysiology services available on our main campus will also be available to patients at this new location in both the ambulatory and inpatient settings.

Strengthening Our Community Presence

In partnership with CU Medicine and UCHealth, the vision is to expand the department's expertise throughout the Denver metropolitan area across all medicine subspecialties, including rheumatology, geriatrics, allergy/immunology and infectious diseases.

The goal is to introduce these specialties that are not currently offered in the community, both in person in the Denver metropolitan area and via telehealth for more remote areas across the Rocky Mountain region. Discussions with health system partners are ongoing with respect to the

appropriate location and scope of these expansions. There is a huge unmet need for these types of providers in Colorado.

Community Practice Directors

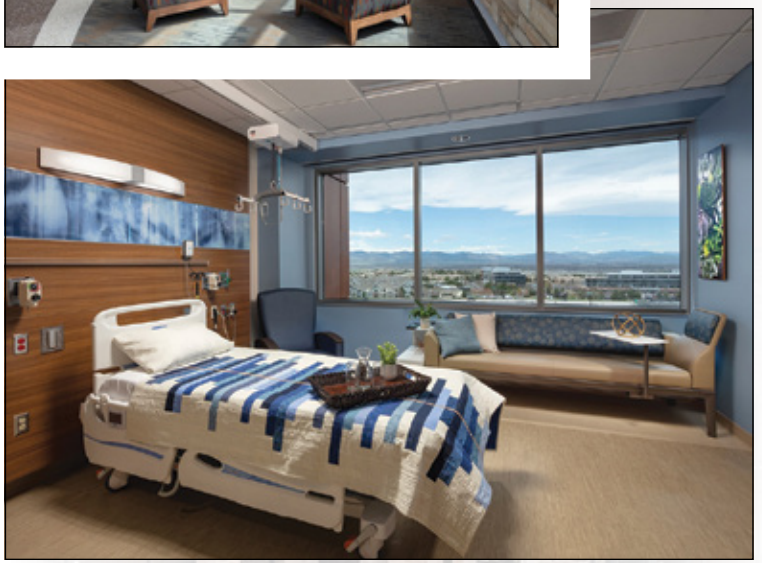
In early 2022, the department reorganized the community practice mission so that each division now has a community practice director. From an organizational standpoint, Dr. Austin oversees each of the individual divisions and their community practice directors, coordinating with their division leaders.

Together, the department collaborates with UCHealth and CU Medicine to gain the appropriate support to execute the vision of delivering care in the community. The community practice directors oversee and work with their respective community providers to optimize clinical productivity and quality, access and patient experience. Dr. Austin works with the directors to identify solutions to challenges that could have an impact on these objectives.

Meeting Challenges and Looking Forward

Currently, few divisions are in a financial position to go into the community on their own. Extending the department's expertise and providing access to the clinically integrated network for patient care in the Denver metropolitan area and the greater Rocky Mountain region thus requires a high degree of collaboration with UCHealth and CU Medicine. Fortunately, discussions have already begun about joint ventures with UCHealth for additional expansions that may take place over the next two years. The hope is that these ventures would accelerate the clinical expansion into the community.





Highlands Ranch Hospital

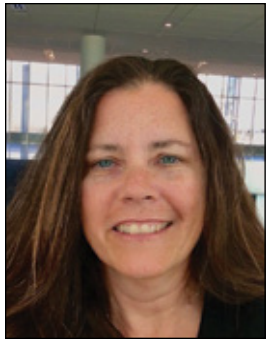


Department of Medicine

Faculty & Staff Wellness: WellDOM

Faculty & Staff Wellness: WellDOM

Katherine Morrison, MD | Director, Welldom Initiative



Katherine Morrison, MD



Community

50+

WellDom Champions

26

Social Programs

The Department of Medicine Wellness Committee (WellDOM) has been in place since 2019. It began with **CT Lin**, MD, professor of medicine and chief information officer, UCHealth; **Roxana Naderi**, MD, assistant clinical professor of medicine; and myself. We have grown to include **Katie Dickerman**, ANP, associate director of APPs; **Cheryl Loudd**, associate director of staff mentoring; **Jordan Hirsch**, associate director of staff data and education; and **Kristin Jensen**, MD, associate director of data and measurement. Our goals are simple: reduce burnout, go beyond personal resilience strategies, collaborate with other campus efforts, be inclusive of all members of the department and create an environment where faculty, staff and trainees can thrive.

Welldom Strategic Pillars

WellDOM focuses efforts in four strategic areas: behavioral health support, building community, monitoring climate, and personal well-being.

Behavioral Health Support

When the pandemic hit, a greater sense of urgency around taking care of mental health and support of healthy coping strategies for our faculty and staff emerged. We conducted surveys and focus groups and ramped up our well-being work even more.

Wellness Wednesdays, Monthly Newsletters and the Pop-Up Cart

We developed a WellDOM 'pop-up cart,' which visits teams of researchers, staff and clinicians equipped with aromatherapy and bubbly water. Since its inception, the WellDOM pop-up cart has served over 2,000 people and is highly popular among surveyed department members. We also developed weekly emails focused on wellness, called Wellness Wednesdays, providing summaries of campus resources, tips on coping and opinion pieces, as well as monthly publications.

Stress Continuum Badge Cards

The Stress Continuum is a self-assessment tool that facilitates a moment of self-reflection, printed on cards that are color-coded. We started using this assessment with providers as a means to check in. The beauty of these cards is that they de-stigmatize wellness check ins and allow for conversations to happen without prejudice.

Community

WellDOM Champions

Given the size of the department and our desire to be inclusive, 'champions' representing faculty and staff were recruited from each division to help disseminate information and bring feedback to the WellDOM team.

WellDOM champions have stepped up to create 26 different social programs across divisions. Now 50+ members strong, the champions continue to serve their peers by creating division wellness initiatives, acting as local experts on well-being topics and bringing the WellDOM cart to their peers, among other initiatives.

Balint Groups

Balint groups were started in the 1970s to help clinicians process relationships with patients to increase clinician empathy, improve communication and decrease clinician burnout. We now hold five different groups on campus, including two for advanced practice providers.

WellDOM @ the Table

WellDOM @ the Table, which is modeled after the COMPASS Groups at the Mayo Clinic, feature

self-formed groups of six to seven participants who meet monthly to discuss well-being topics developed for the groups. The meetings have led to a shared purpose and community.

Wellness Mini Grants

This year, we instituted a pilot mini-grant program for faculty, trainees and staff. Four grants of $2,500 each will be offered. Twelve projects have been submitted, ranging from improving provider connection, resident and trainee wellness and support for invited speakers and programs.

Climate

Staff Mentorship Program

Cheryl Loudd, associate director of staff mentoring, and **Jordan Hirsch**, associate director of staff data and education, created a successful Staff Mentorship Program. Using a hybrid model of traditional mentorship and peer-facilitated mentorship, 23 mentees and 12 mentors participated in the first year and it has been an incredible success.

Valuing Each Other Program

Feeling appreciated at work is so closely tied with wellness, so we launched the Valuing Each Other in the Workplace Program. The program includes an 'all-hands' workshop as well as a leader lecture to develop a common language, knowledge and skill set around valuing each other. All divisions including staff, clinicians and leadership will participate.

Personal Well-Being

Resources to Support Members

The WellDOM leadership team frequently speaks at division meetings and community events and helps to hold retreats. We created a division chief playbook that includes speaker resources, mental health and campus resources and postvention materials.

Biofeedback Pilot Program: HeartMath + Muse Mindfulness Coaching

We offer the opportunity to use biofeedback devices to enhance relaxation and mindfulness for departmental employees who can sign up for a six-week pilot and use this technology-based biofeedback tool.

Caregiver Program

Like many other departments, we saw how our people were getting caught between being a caregiver to children or elderly parents at home and keeping up with their normal workload. To address this, **Marisha Burden**, MD, division head of Hospital Medicine, partnered with a range of campus stakeholders to create resources around how to access child or adult care.

Nature and Forest Therapy

The department's Nature and Forest Therapy Program is in its infancy, but early feedback is promising. Led by two nature and forest therapy guides, the program has worked with residents and fellows, and there are plans to expand it to all faculty and staff.

Toward The Future

Looking forward, we hope to continue to create a culture and a workplace where everyone is thriving and engaged. Surveying and interviewing our members, we are able to identify barriers to this vision. Responding to this information informs our programs and efforts, and our measurements and evaluations tell us that we are on the right track.



The WellDOM cart makes rounds at all CU Anschutz DOM locations – administrative, research, educational, and clinical. We are thankful to our volunteers who help support this popular initiative!



Department of Medicine

Affiliates

Veterans Affairs

Alkesh Jani, MD | Interim Chief, Department of Medicine, Rocky Mountain Regional VA Medical Center, U.S. Department of Veterans Affairs



Alkesh Jani, MD

Research

$14.5M

Funded (HSRD, CSRD, BLRD)

48

Active Projects

28

PIs from DOM

For the past two years, the Rocky Mountain Regional VA Medical Center (RMR VAMC), U.S. Department of Veterans Affairs (VA), has been focused on the COVID-19 pandemic.

Throughout the pandemic we experienced surges in the number of patients in both the inpatient and outpatient arenas, and we had to make adjustments to meet this increased demand and comply with quarantine requirements. The latter ultimately led to staffing shortages, which challenged our ability to maintain patient quality, research operations, education and administrative functioning. It was a struggle at times, but the RMR VAMC and the CU Department of Medicine pulled together in an amazing way. Despite the challenges of the COVID-19 pandemic, we were able to provide services to all of our Veterans, who always come first.

Post Deployment Cardiopulmonary Evaluation Network

The Rocky Mountain Regional Post Deployment Cardiopulmonary Evaluation Network (RMR PDCEN) is located at the RMR VAMC, which is home to one of 18 national health service research and development Centers of Innovation (COIN) that promote Veteran-centered care.

The RMR VAMC provides standardized and comprehensive clinical evaluations performed by VA physicians with expertise in pulmonary and occupational medicine for Veterans enrolled in the Airborne Hazards and Open Burn Pits Registry.

Telehealth

During the pandemic, we expanded our telehealth reach, as it enabled us to see patients at different parts of their visit, and under the quarantine and pandemic restrictions. We were able to minimize the travel needs of the Veterans and still provide them the care they needed.

We also developed telehealth clinics for Montana, southern Colorado and Wyoming. Our endocrinology service used telehealth, as did the nephrology and renal services. These telehealth programs remain a key part of our clinical operations today.

Broadening Our Reach

Our cardiology service has expanded its offerings into the Colorado Springs area, and collaborated with the Department of Defense (DOD) to see patients at DOD facilities in this area. We also developed new satellite clinics with cardiology that include electrophysiology services.

Research Enterprise

The RMR VAMC continues to focus on our core vision: ensuring that we pursue our academic research mission and that investigators are able to do the research that is needed.

The CU School of Medicine and the RMR VAMC are tightly aligned, and even to this day, have a large number of faculty who serve at both facilities. All faculty in the Department of Medicine at the RMR VAMC have an appointment with the school. A large number of our faculty perform research at both institutions. We also have faculty who use the research cores at both institutions to cross-feed into their research endeavors.

The RMR VAMC chief of medicine is included in vice chair and departmental division meetings to ensure that our missions are

aligned, and that we're providing the best education, patient care and research experience to both patients and faculty. Without question, we are much stronger together.

Diversity Summer Research Program

Through the 10-week Diversity Summer Research Program, the VA Rocky Mountain Mental Illness Research Education and Clinical Center (MIRECC) mentors aspiring new scientists, practitioners and advocates who reflect the diversity of communities we serve. We also strive to offer early-career scientists meaningful experiences in suicide prevention research. Together, we are building an inclusive workforce better equipped to tackle suicide and support health.

Funding

Our departmental faculty at the RMR VAMC have earned 79 merit review awards with six pending, along with four research career scientists and 19 funded CDAs. There are currently 470 total open studies, with 406 of those involving human subjects, 40 involving animals and 24 in basic laboratory science. Our FY22 annual research funding is approximately $20 million and we also bring in $16 million for research infrastructure support. Our contributions to the research mission of the department and the RMR VAMC are therefore significant.

Network of Dedicated Enrollment Sites

The RMR VAMC is part of the Network of Dedicated Enrollment Sites (NODES), a consortium of VA medical centers with teams dedicated to conducting cooperative studies programs (CSP) to enhance the overall performance, compliance and management of CSP multi-site research.

NODES work together to share best practices and provide local insights to the CSP central office and CSP centers on study design and related considerations that can help with study management and conduct. Each node helps to create a stronger local community of clinical research, allowing enrollment of Veterans in national VA studies.

Advancing Education

We are closely aligned with the department in our educational mission. We have a number of faculty who educate residents, house staff, medical students and fellows, both at the RMR VAMC, and at the CU School of Medicine.

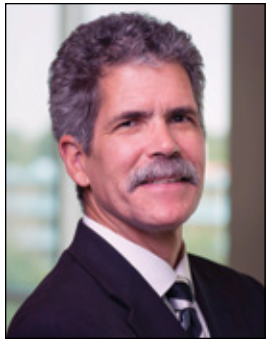
Longitudinal Integrated Clerkship Program

In coordination with the new Longitudinal Integrated Clerkships, we now give medical students a panel of patients to follow at the RMR VAMC throughout the course of the year. Medical students go to every appointment with the patient and often visit them in their homes to observe their living conditions. They also visit patients if they are hospitalized at the main campus or at our VA. We have created and developed curricula in collaboration with the department which has led to outstanding teaching evaluations for our faculty.



National Jewish Health

Kevin Brown, MD | Chair



Kevin Brown, MD

National Jewish Health is a leading respiratory hospital in the United States, and the only health care organization with a major focus on respiratory-related illnesses. We are recognized for this expertise through a variety of measures and have been ranked #1 or #2 in pulmonology by U.S. News & World Report for 26 consecutive years. We share a long-standing, deep and mutually nourishing relationship with the University of Colorado School of Medicine, with most of our physicians and scientists having full faculty appointments.

Research

$92.5M

Funded

372

Grants/Contracts

72

PIs from DOM

This past year has seen us emerge from the COVID-19 pandemic. During the peak of the pandemic, we focused our attention on acute critical care needs, care for patients with exacerbations of underlying chronic conditions, preventive care and remote support of our patients and provider colleagues.

We now have a major role in the care of patients who are suffering with long COVID. As a collaborative endeavor with the University of Colorado and across the state, we continue to make progress in how to treat the underlying signs, symptoms and functional impairments associated with long COVID.

Clinical Care

With major divisions across the medical spectrum we focus on interdisciplinary care of complex patients. We've seen significant growth in cystic fibrosis (CF), chronic obstructive pulmonary disease, nontuberculous mycobacterial disease, interstitial lung disease, severe asthma and neurology programs.

As the largest adult CF center in the United States, National Jewish Health provides ongoing treatment for hundreds of adults. Improved treatment for children with CF and better diagnostic testing for adults with unusual expressions of CF will continue to increase the number of individuals who need our specialized care. As an integral part of the Cystic Fibrosis Therapeutics Development Network, we have multiple ongoing clinical trials that evaluate the safety and effectiveness of novel CF therapies.

Research Focus

National Jewish Health and the University of Colorado have an enduring and long-standing research relationship, with over 50 shared research grants. With our total research funding budget currently hovering around $100 million a year, we've launched the Office of Research Innovation (ORI) to improve intramural and extramural research collaborations. We jointly sponsor the weekly Pulmonary Division Seminar Series, and the weekly regular city-wide Research in Progress Seminars. Our recurring series of Research Happy-Hours have highlighted UCD/NJH collaborations with a recent focus on core resources, including: 1) metabolomics core; 2) mitochondrial metabolism; and 3) proteomics core.

Innovation in Education

National Jewish Health is an accredited teaching affiliate of the University of Colorado School of Medicine, with CU medical students, residents and fellows training. We are the primary training site for four of our combined fellowship programs with **Tristan J. Huie**, MD, director, University of Colorado Pulmonary and Critical Care Fellowship Program; **Flavia**

Hoyte, MD, director, Allergy and Clinical Immunology Fellowship Program; **Sheila C. Tsai**, MD, program director, Sleep Medicine Fellowship; and **Ellen Volker**, MD, director, Interventional Pulmonary Program.

On the Horizon

Moving forward, we will continue to expand our relationship with the University of Colorado School of Medicine, particularly in the Department of Medicine, around our education and research missions.

Awards and Honors

Gregory Downey, MD, a pulmonologist at National Jewish Health, serves as the executive vice president of academic affairs in the Department of Medicine, and is currently the president of the American Thoracic Society.

Irina Petrache, MD, is a pulmonologist at National Jewish Health. Dr. Petrache serves as chief of the Division of Pulmonary, Critical Care and Sleep Medicine, and associate vice president for faculty development. She also serves as secretary, and will assume the role of president in 2024-25



Denver Health

Edward Havranek, MD | Chair



Edward Havranek, MD

Denver Health has been serving the health care needs of the Denver community for more than 160 years since its founding in 1860. As a comprehensive, integrated health system, we provide primary, hospital and emergency care to our patients.

This integration promotes continuity of care for each patient and assures health care that is delivered in the most efficient, cost-effective setting. As Denver's primary safety-net institution, Denver Health has provided billions of dollars in uncompensated care and serves as a model for other safety-net institutions across the nation.

Our most important achievement this past year has been returning to some sense of normalcy after three years of the COVID-19 pandemic, and more importantly, keeping our doors open. In March 2022, we saw the last inpatient surge of patients with COVID-19 pneumonia beginning to leave the hospital.

Due to the disruptive nature of the pandemic, the last few years have resulted in unique challenges in the health care labor market leading to unprecedented financial stress.

The pandemic also took a toll on our providers, and we began to seriously acknowledge the enormous burden on our teams, focusing our efforts on recovery. Thankfully, only a small number of providers left the organization. Despite limited resources, I think we did a very good job of keeping things together.

Collaboration

At Denver Health, a strong partnership exists among our cardiology, interventional radiology and vascular surgery services. To address the overlap in what these services do, we saw the need to sit down and work together toward solutions. One of the developments that resulted is that we now have our vascular surgeons working in catheterization labs with the cardiologists.

Outpatient Endoscopy

Coming out of the pandemic, we had a large backlog of patients needing endoscopy, which was a particular challenge because it's an expensive service to provide. We've been able to make significant headway clearing the backlog; this was an important achievement.

Virtual Care Offerings

Our virtual care and telemedicine offerings have been very active, although we didn't really get up to speed with video to the degree we wanted. Some of this is due to the educational level of our patients, and challenges in connecting with technology.

Innovation in Research

Clinical Research Infrastructure

Clinical research remains an area of strength for us, particularly with our infectious disease and critical care groups. They participated meaningfully in several NIH multi-center COVID-19 trials.

Most of the challenges in clinical research during the pandemic were for early- career researchers. They had real trouble keeping their programs going, and many of them are now three years behind in terms of their research career development.

Health Services Research

Romana Hasnain-Wynia, PhD, chief academic officer, Denver Health, is a strong health services

Research

$12.5M

Funded

59

Active Projects

21

PIs from DOM

researcher who has applied for funding to develop a training program in health services. The Department of Medicine will be participants rather than drivers of that effort.

Advancing Education

Residency Program

The foundation of our collaboration with the University of Colorado is in the area of medical education, as we share residents and fellows. We work very closely with **Geoffrey Connors**, MD, professor of medicine and vice chair of education, and have good relationships with leaders in the CU School of Medicine who drive medical student teaching.

Denver Health remains a desired place for residents to rotate through, as it is known for being excellent and pragmatic in clinical care. We take care of underserved, vulnerable populations, and the residents respond well to that. Overall, we feel good about the job we're doing at teaching; it's a point of pride and is something that draws a lot of faculty here. All of the CU Department of Medicine fellowship programs rotate fellows through Denver Health.

Longitudinal Integrated Curriculum

The first longitudinal integrated curriculum program for the University of Colorado was established at Denver Health. One of our general internists developed the program with a pilot for eight students. It was very successful and became the model for how the initial clinical year is run throughout the CU School of Medicine. The program at Denver Health has now expanded from 10 to 40 students, and involves a larger portion of the department's faculty.

Students in the longitudinal third-year clerkship develop a cohort of patients from all specialties that they follow through primary care, subspecialty clinics, inpatient and emergency settings. They work with preceptors in each specialty providing longitudinal teaching, mentorship and evaluation. Students develop a learning community with a stable peer group over the course of the year. Curricular focus is on underserved, vulnerable populations, community health, advocacy, equity and social justice.



Faculty Highlights

In May 2023, **Anuradha Paranjape**, MD, MPH, FACP, became the new director of service for the Department of Medicine at Denver Health, as I stepped down in November 2022, after being in the role for seven and a half years. Dr. Paranjape brings new ideas, fresh energy and plans to move Denver Health more strongly into the ambulatory care arena.

Moving Forward

The pandemic was hugely challenging for everyone in health care in this country. It was particularly challenging for us because we are a low-resource institution. I am incredibly proud of how we rose and met this challenge.






New Horizons

New Horizons

Four new leaders in the Department of Medicine share their vision for the year ahead and highlight new initiatives and programs on the horizon.

Fernando Holguin, MD | Associate Vice Chair for Clinical and Translational Research



The Department of Medicine has several new initiatives aimed at helping faculty navigate research resources. For example, we are working to improve our web format capability and increase connectivity.

Research Progress Conference

In a department of our size, we experience siloes among investigators across our 14 divisions. To address this, we are now holding a weekly Research Progress Conference. We have reformatted this conference to bring investigators from basic and clinical science together for cutting-edge presentations and debates. The goal is to create a space where people can congregate, interact and talk about their science.

Multi-Disciplinary Seed Grant Program

Helping our faculty create new collaborations across divisions needs support. To that end, we are launching a Seed Grant Program for interdisciplinary research with the department. Researchers will be given support to develop a team, and then if the teams have ideas that can move forward, they will receive additional financial support. We are particularly interested in proposals that couldn't be achieved without a multidisciplinary team. Each team will consist of three members with primary appointments with the department, including at least one junior faculty member.

Clinical Outcomes Program

We also hope to develop a Clinical Outcomes Research Program across the department. This will allow us to have a better way to conduct quality and implementation research. We want to understand the data reflecting patient care and make modifications for improvement.

Cari Levy, MD, PhD | Division Head, Division of Geriatrics



I am particularly excited about the Post-Acute and Long-Term Care Knowledge Network for Older Adults and Workforce (PALTC-KNOW), a research network model that has been very successful in the Netherlands. The model is designed to be a community-based network of individuals from nursing homes, assisted living facilities, hospitals and home care who are partnering in research.

Individuals living and working in long-term care settings, particularly nursing homes, have valuable lessons to teach us about caring well for people with highly complex medical and psychosocial needs. As was abundantly clear during the COVID-19 pandemic, nursing homes are often under-resourced and without strong community connections.

The National Academies of Sciences, Engineering and Medicine released a report in 2022 titled, 'The National Imperative to Improve Nursing Home Quality.' The report calls for coordinated efforts to identify care models that reduce disparities in care and strengthen connections among nursing homes, the communities they serve and the broader health care system.

Identification of solutions will require partnerships between frontline staff and researchers, but we currently have a great deal of difficulty recruiting people to participate in research within these communities. The Dutch model creates a 'Living Lab' in which partnerships are created between academic institutions and nursing homes with 'linking pins' – with faculty from the universities and staff from long-term care to serve as liaisons. In this model, vexing problems are identified by frontline staff; researchers then design an appropriate study addressing the problem and the two entities partner to learn together as the research is conducted. Our vision is to create a similar partnership as a knowledge network to support person-centered care and workforce development.

Sunita Sharma, MD | Vice Chair for Faculty Development and Mentorship



Creating a Generation of Mentors

One of the growth areas on the horizon for the Department of Medicine will be to develop additional programs for faculty development and enhanced mentorship skills. This year, we will create a new departmental mentorship launch team requirement, where every faculty member hired will have an identified set of mentors for their first year.

Launch teams will be led by the new faculty member, convene at least quarterly and will follow a defined format. In addition, we hope to monitor the quality of these meetings by asking mentors and mentees to provide anonymous feedback on these sessions. Using these data, we hope to link faculty so that we can better address career development and opportunities for advancement. These initiatives will be developed in conjunction with the Mentorship Academy to create a generation of future leaders and mentors in academic medicine.

The COVID-19 pandemic of the last several years has meant that we have not had the opportunity to be together in the same place at the same time. Our focus in faculty development will be centered on building this sense of community and collegiality across the department. We intend to do this across all divisions, our affiliates and even those outside of these arenas who may wish to be more included in our development processes.

Kristine Kuhn, MD | Division Head, Division of Rheumatology



The Division of Rheumatology recently completed a strategic plan that is focused on four key priority areas: 1) expanding clinical access; 2) research innovation; 3) workforce pipeline; and 4) diversity, equity, inclusion and justice (DEIJ).

Expanding Clinical Access

We will be expanding access to rheumatologic clinical care into the community space. We'd like to establish satellite clinics within the Denver Metro region as well as explore how to expand access to patients in the 'high country' located in our mountain areas. Some of that outreach will incorporate models of telehealth.

Innovation

We are creating innovative opportunities to integrate research and clinical care more efficiently to ensure that our research is human disease-focused, and that what we learn can then be disseminated back into our patient communities.

Building our Pipeline

We currently have an exceptional clinical pipeline. In fact, the division has become more competitive for its subspecialty fellowship over the last 10 years. Not everyone who wants to go into rheumatology can match into the field now. But we still don't have a pipeline of physician-scientists. While we're getting good fellows, not many are going into research. We want to fix this leaky pipeline to retain our trainees in academic careers.

Diversity, Equity, Inclusion and Justice

We are working to understand how to best serve our entire community, looking not only internally at health disparities and outcomes, but also reflecting on our division as a whole and how to become more inclusive to increase diversity across all aspects of the division.



Cultivating Philanthropy

Cultivating Philanthropy



The Radys

A key strategic goal for the Department of Medicine under the leadership of **Vineet Chopra**, MBBS, MD, MSc, is growth in philanthropic dollars to support each of our various academic missions. The Department is well positioned to become the go-to destination for developing bold ideas, addressing myriad clinical needs facing the people of Colorado and creating the best experience for our patients. The Department is also focused on investing in ideas and programs to train the next generation of health care leaders. Philanthropy is the 'rocket fuel' that will allow the department to invest in these areas.

The department has an ambitious goal of doubling the total number of endowed chairs it currently holds over the next five years. An endowed chair is a named position funded by an endowment that provides the chairholder with sustainable financial resources, allowing them to continue efforts in a specified area knowing they will have funds from the endowment to use each year. In FY18, 48 endowed chairs benefited faculty in the department. In FY23, this has increased to 65. We have made strong strides toward our goal of increasing philanthropic dollars coming to the department.

At the Forefront of Innovation in Esophageal Cancer Research Care

In 2015, Katy Rady lost her brother, Paul R. O'Hara II, to esophageal cancer. She created a lasting tribute to his memory with the establishment of the Paul R. O'Hara II Endowed Chair in Esophageal Cancer at the CU Cancer Center. Further building on this support, in 2022, the Katy O. and Paul M. Rady Esophageal and Gastric Center of Excellence was established to elevate the University of Colorado Cancer Center among the nation's top cancer research and care destinations. Made possible by a $20M philanthropic investment from Katy and Paul Rady, this gift will fund initiatives to advance esophageal and gastric cancer research, develop and expand clinical trials and bolster existing screening and surveillance programs that will lead to better patient results and fewer deaths from esophageal and gastric cancers.

"We are honored and grateful for this generous gift from the Radys," says **Sachin Wani**, MD, professor of medicine, Division of Gastroenterology and Hepatology, and the inaugural director of the Katy O. and Paul M. Rady Esophageal and Gastric Center of Excellence. "This gift allows us to change the paradigm and offer patients diagnosed with these complex cancers a higher survival rate. By changing screening models and expanding outreach efforts, we can identify those with precancerous conditions such as Barrett's esophagus earlier and help ensure that they never progress to esophageal cancer. This will enable skilled physicians and researchers to explore new approaches to treatment and will put the CU Cancer Center at the forefront of innovation in the field of esophageal cancer research."

Katy explains, "When my brother was seen at the CU Cancer Center, we knew this place was different. That was partly due to their multidisciplinary approach in treating cancer and the experts that provided him advanced care. We want others to receive this same care by acting as a vessel that will spur breakthroughs and create new therapies. We hope this gift will continue to help make a difference for families facing this cancer."

Endowed Chairs in the Department of Medicine

The late **Robert Allen**, MD, was recruited to the University of Colorado in 1977 as chief of the Division of Hematology. Dr. Allen served in this role for nearly 40 years, establishing the academic foundation that would lead to a division of over 100 faculty and staff. His discoveries are now taught as standard medical practice in textbooks and clinical practice guides.

Dr. Allen recruited his wife, Nancy Carol Allen, to CU with him, where she made significant contributions in his laboratory. This unique partnership produced major breakthroughs for the field of hematology.

The Allen family has fully funded four endowed chairs at the CU School of Medicine, and contributed to two others, something unmatched by any other faculty member past or present across the university. Not only did Robert and Nancy devote their careers to improving care, pioneering research and training the next generation, they have forever tied their legacy to the same through these endowed chairs.

Endowed Chairs

Ruth and Ralph Seligman Endowed Chair in Hematology

Recipient: **Clay Smith**, MD

David, Sam and Gabrielle Seligman Endowed Chair in Hematology

Recipient: **Brandon McMahan**, MD

Cleo Meador and George R. Scott Endowed Chair in Hematology

Recipient: **Eric Pietras**, PhD

Cleo Scott and Mitchell Vincent Allen Endowed Chair of Medicine in Hematology Research

Recipient: **Sally Stabler**, MD

Nancy Carroll Allen Endowed Chair in Hematology Research

Recipient: **Craig Jordan**, PhD

Robert H. Allen, MD, Endowed Chair in Hematology Research

Recipient: **Dan Pollyea**, MD, MS



The Allen Family



Robert Allen, MD



George and Mary Sissel with inaugural Sissel Family Endowed Distinguished Clinician Chair, Ronald Colson, MD.



The McNeilly family pictured with Breelyn Wilky, MD.

Innovation in Clinical Excellence Program

Clinical faculty spend the majority of their time caring for patients at CU Anschutz, our offsite locations and at our affiliates. Despite their critical role in patient care and the success of the department at large, opportunities to highlight the work they do — or the best among them — remain limited.

To meet this need, the department has established the Innovation in Clinical Excellence Program. The mission of the program is to recognize faculty who are judged 'excellent' by their peers and leaders in their work with both patients and colleagues. The program is supported by a generous gift from an anonymous donor who supports the vision of recognizing outstanding clinicians in our department.

The program will comprise physicians who are the 'Doctors' Doctors' – physicians we would entrust with the care of our own lives and those of our families. Induction into the program will occur annually. Nominations will be sought from each clinical division in the department.

Induction into the program is considered an honor for a faculty member, and once inducted, each individual will remain a lifelong member of the Innovation in Clinical Excellence Program.

Reimagining Primary Care

A Distinguished Clinician Chair in the Division of General Internal Medicine was endowed through a generous gift from George and Mary Sissel, longstanding philanthropic partners of the University of Colorado, who were grateful for the patient-centered care they received at the CU Anschutz Medical Campus from **Ronald Colson**, MD, assistant professor of medicine, Division of General Internal Medicine.

The Sissel Family Endowed Distinguished Clinician Chair will provide flexible resources to the Division of General Internal Medicine to advance the teaching and delivery of world-class patient care. This thoughtful investment will also provide financial support to students and fellows in addition to advancing curriculum development. Dr. Colson has been named as the inaugural Endowed Distinguished Clinician Chair.

Accelerating Sarcoma Research

The Cheryl Bennett and McNeilly Family Endowed Chair in Sarcoma Research was made possible by gifts from an anonymous donor, Ward and Eugenia McNeilly, the CU School of Medicine, the Division of Medical Oncology and the CU Cancer Center. This chair will provide resources for translational research projects that aim to bring findings from the research bench to the patient bedside at an accelerated pace to improve and create new therapeutic options for sarcoma patients. The inaugural chair holder is **Breelyn Wilky**, MD, associate professor of medicine, Division of Medical Oncology, an expert in rare sarcomas.

Focusing on Pulmonary Hypertension

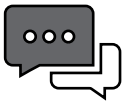
The Kerry and Megan Hicks Endowed Chair in Pulmonary Hypertension provides support for a faculty chair in the division. The inaugural chair holder, **David Badesch**, MD, is the clinical director of the Pulmonary Hypertension Center and chair of the Pharmacy and Therapeutics Committee. Dr. Badesch is a dedicated professor within the Division of Pulmonary Sciences and Critical Care Medicine. He currently leads the division as interim head.

Having spent a career pioneering innovative health care businesses, including being the founder and CEO of HealthGrades, Kerry Hicks is proud to support world-leading pulmonary hypertension research at the University of Colorado Anschutz Medical Campus. The support of Kerry and his wife Megan is specifically designed to enhance the campus' ability to provide the very best care available for its patients, conduct leading-edge research, educate young physicians and scientists and build for the future.

The Hicks also established the Kerry and Megan Hicks Endowed Lectureship in Pulmonary Hypertension to provide support for a lectureship series targeted at students in the division. The annual lecture will focus on pulmonary hypertension. The inaugural lecturer was Deepa Gopalan, MD, FRCP, FRCR, associate professor, University of Cambridge, and honorary senior clinical lecturer, Imperial College London, UK.

Advancing Cardiac Imaging

The Cardiology Imaging Programmatic Fund was created in 2020 by a $5M gift from a generous benefactor who had received exceptional patient-centered care at the CU Anschutz Medical Campus. Most recently, the same benefactor has committed another $15M to provide additional resources for the programmatic and research needs of the entire cardiac imaging unit. **Robert Quaife**, MD, professor of medicine and director of advanced cardiac imaging in the Division of Cardiology, is the inaugural endowed chair and will use these resources to advance cardiac imaging techniques and educational opportunities for trainees.



Growing Together

92

Philanthropic Conversations ($10K+) in which DOM faculty members played a significant role

$5M–$20M

Gifts range



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