2022
Dalton Cardiovascular Research Center
Committed to Interdisciplinary Collaboration in Research and Teaching
Cystic Fibrosis mouse small intestine immunofluorescent 40x image taken with a Fluoview FV1000 confocal microscope. Goblet cell-associated antigen passages (GAPS). Goblet cells labeled green (cytokeratin 18) containing the luminal antigen labeled red (10 kD dextran) are indicative GAPS. GAP are transiently opened through muscarinic neural action and present antigen to submucosal dendritic cells. Blue, Hoechst nuclear stain.

Courtesy of Sarah Young, DVM, MS from the laboratory of Resident Dalton Investigator Lane Clarke, DVM, PhD
From the Director

The Dalton Cardiovascular Research Center (DCRC) supports the objectives of the University of Missouri in its mission of teaching, research and service. Yet it is unique in its commitment to interdisciplinary collaborative research and teaching among various colleges, schools and departments across the Columbia campus. Under the auspices of DCRC, scientists from the fields of biochemistry, biological engineering, biological sciences, biomedical sciences, electrical engineering, medicine, pharmacology, physiology, physics, and veterinary medicine and surgery all come together and apply their particular expertise to research problems.

Our commitment to collaboration is grounded in the belief that interactions among scientists of diverse backgrounds will lead to multidisciplinary research producing meaningful, far-reaching results. Our commitment to collaboration is grounded in the belief that interactions among scientists of diverse backgrounds will lead to multidisciplinary research producing meaningful, far-reaching results. Research programs at DCRC include investigations into cardiac functions, cystic fibrosis, exercise, kidney failure, membrane transport, muscular dystrophy, neurohumoral control of the circulation, shock, vascular wall biology, diabetes, hypertension, biomedical engineering, protein-protein interactions, and tumor angiogenesis. Because the mission of DCRC is to promote interaction and collaboration, no single group completely defines the research activity of its members.

The center is committed to excellence in cardiovascular research and in the education of students and fellows. Our investigators provide service to the University, the State of Missouri, and the nation through memberships on committees, peer review panels and editorial boards of scientific journals.

The Dalton Cardiovascular Research Center is accredited by both the American Association for the Advancement of Laboratory Animal Care and the American Association of Laboratory Animal Sciences.

Michael A. Hill, PhD
Interim Director, Dalton Cardiovascular Research Center
Professor, Medical Pharmacology & Physiology

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Focused on Understanding the Cardiovascular System During Development, Aging, & Disease
Through Interdisciplinary Collaboration in Research and Teaching with Academic and Industry Partners
CENTER INFORMATION

CORE TECHNOLOGIES
Atomic Force microscopy
Confocal/multiphoton microscopy
In vivo video microscopy
Chronic instrumentation
Electrophysiology
Quantitative PCR
Nanofabrication
Cell tissue culture
Gene expression
Manipulation of protein expression
Fluorescence spectroscopy
Cardiovascular and microvascular models
High Frequency Ultrasound Imaging

CORE FACILITIES
Leica SP5 confocal multiphoton system
FV 1000 Olympus confocal systems
High Speed Spinning disk confocal
Atomic Force Microscopy Systems
Research grade florescence microscopes
Molecular and cellular technology core
Information technology core
Vevo LAZR Photoacoustic Imaging System
Telemetry
Laser Speckle Imaging
Any-Maze System
Ivis Imaging
Metabolic Cages
gentleMACS Octo Dissociator
Odyssey DLx
Real-Time PCR System
Agilent BioTek Synergy Multi-Mode Reader

Interdisciplinary Research
Interest Groups
Biomedical Engineering
Microcirculation
Exercise/Inactivity
Vascular Biology
Membrane Transport
Cystic Fibrosis
Tumor Angiogenesis
Neurohumoral Control of Circulation
Cardiac Muscle, Development & Disease

Facilities
Erected 1967-1969
33,456 Square Feet
21 Research Labs
Academic Partners

College of Arts and Science
  Physics & Astronomy

College of Engineering
  Bioengineering, Electrical & Computer Engineering

College of Veterinary Medicine
  Biomedical Sciences

School of Medicine
  Biochemistry
  Center for Gender Physiology
  Medical Pharmacology & Physiology
  Internal Medicine
  Pathology and Anatomical Sciences

College of Human Environmental Sciences
  Nutrition & Exercise Physiology

External Sector Collaborations

International
  Univ of Calgary (CA),
  Univ of Oxford (UK)
  National Yang Ming Chiao Tung University Taiwan
  Southwest Medical Univ(CN)
  National Taiwan University
  Univ of Guanajuato
  ABBVIE Inc

Domestic
  Novopyxis, Inc
  Case Western University
  State University of IOWA
  Tufts University
  University of IL Urbana, Champaign
  Pennington Biomed Research Ctr,
  Washington University, St. Louis
  University of IL, Chicago
  Univ of Alabama, Birmingham
  West Virginia University
  Univ of CA, San Francisco
  Stony Brook University (SUMY)
  Univ of NC, Chapel Hill
  Texas Tech University
  Yale University
  Albert Einstein College of Medicine
  Indiana University
RESIDENT INVESTIGATORS

Christopher P. Baines, PhD  
Associate Professor, Department of Biomedical Sciences

Lane L. Clarke, DVM, PhD  
Professor, Department of Biomedical Sciences

Kevin J. Cummings, PhD  
Assistant Professor, Department of Biomedical Sciences

Shinghua Ding, PhD  
Associate Professor, Biological Engineering

Kevin D. Gillis, DSc, PhD  
Professor Biological Engineering

Olga Glinskii, MD  
Assistant Research Professor
RESIDENT INVESTIGATORS

Vladislav Glinskii, MD
Pathology and Anatomical Sciences

Li-Qun (Andrew) Gu, PhD
Associate Professor, Bioengineering

Chetan P. Hans, PhD
Assistant Professor, Department of Medicine-Cardiology

Eileen M. Hasser, PhD
Professor, Department of Biomedical Sciences
Adjunct Professor, Medical Pharmacology and Physiology

Michael A. Hill, PhD
Interim Director, Dalton Cardiovascular Research Center
Professor, Department of Medical Pharmacology and Physiology

Tzyh-Chang Hwang, PhD
Professor, Department of Medical Pharmacology and Physiology
RESIDENT INVESTIGATORS

Salman M. Hyder, PhD
Zalk Missouri Professor of Tumor Angiogenesis
Professor, Department of Biomedical Sciences

David D. Kline, PhD
Associate Professor, Department of Biomedical Sciences

Maike Krenz, MD
Associate Professor, Department of Medical Pharmacology and Physiology

Luis Polo-Parada, PhD
Associate Professor, Department of Medical Pharmacology and Physiology

Zhe Sun, PhD
Assistant Research Professor, Dalton Cardiovascular Research Center

Xiaoqin Zou, PhD
Professor, Department of Physics and Department of Biochemistry
EMERITUS DALTON INVESTIGATORS

Edward H. Blaine, PhD, DSc(Hon), Emeritus Professor
Professor, Department of Medical Pharmacology & Physiology
Former Director, Dalton Cardiovascular Research Center 1990-2005
"Hypertension, heart failure, and salt and water balance."

*Discovery of Angiotensin converting enzyme inhibitor*

1962 NFL Draft, Offensive Line Green Bay Packers, retired after 5th season with the Philadelphia Eagles to come back to Mizzou for his doctorate.( 5 years, a promise to mentor, Clint Conaway)
Distinguished Eagle Scout by the Boy Scouts of America, 2009
Missouri Sports Hall of Fame, 2011

Gerald A. Meininger, PhD, Emeritus Professor
Margaret Proctor Mulligan Professor in Medical Research
Professor, Department of Medical Pharmacology and Physiology
Former Director, Dalton Cardiovascular Research Center 2005-2015
Adjunct Professor, Department of Biomedical Sciences
Adjunct Professor, Department of Biological Engineering
Non- Resident Investigators

Shawn B. Bender, PhD
Assistant Professor, Department of Biomedical Sciences

Frank W. Booth, PhD
Professor, Department of Biomedical Sciences

Douglas K. Bowles, PhD
Professor, Department of Biomedical Sciences
Adjunct Professor, Department of Medical Pharmacology and Physiology

Chandrasekar Bysani, DVM, PhD
Margaret Proctor Mulligan Endowed Professor

Michael J. Davis, PhD
Professor and Associate Department Head, Department of Medical Pharmacology and Physiology
Non-Resident Investigators

William P. Fay, MD
Professor of Internal Medicine and Medical Pharmacology & Physiology

Kenneth A. Gruber, PhD
Adjunct Professor, Department of Medical Pharmacology and Physiology

Jacqueline Limberg, PhD
Assistant Professor, Nutrition and Exercise Physiology

Camila Manrique Acevedo, MD
Associate Professor, Endocrinology/Metabolism/Diabetes, Internal Medicine

Luis Martinez-Lemus, PhD, DVM
Associate Professor, Department of Medical Pharmacology and Physiology
Non-Resident Investigators

Nicole L. Nichols, PhD  
Assistant Professor, Department of Biomedical Sciences

Jaume Padilla, PhD  
Associate Professor Nutrition & Exercise Physiology

Lakshmidevi Pulakat, PhD  
Professor, Department of Medicine - Cardiology

Steven S. Segal, PhD  
Professor of Medical Pharmacology and Physiology

James R Sowers, MD  
Adjunct Professor of Clinical Medicine
Publications


Publications


Publications


Publications


Giving to Dalton

Investigators at Dalton Cardiovascular Research Center seek understanding and information about some of the most prevalent health issues of the day - hypertension; heart disease; adult-onset (Type II) diabetes; obesity; muscular dystrophy; cystic fibrosis; and breast, uterine and prostate cancer. Teams of investigators from medicine, engineering, biomedical sciences, veterinary medicine, physiology and other disciplines work together to find answers to questions that will directly affect the understanding of disease prevention and treatment. Your contribution to Dalton supports this work.

You can now give directly to Dalton Cardiovascular Research Center and the Franklin Lecture Endowment by going to our Giving to Mizzou page.

Dalton welcomes partnerships with the private sector. Please contact Dr. Michael Hill at hillmi@missouri.edu or 573-882-9482 to learn more.