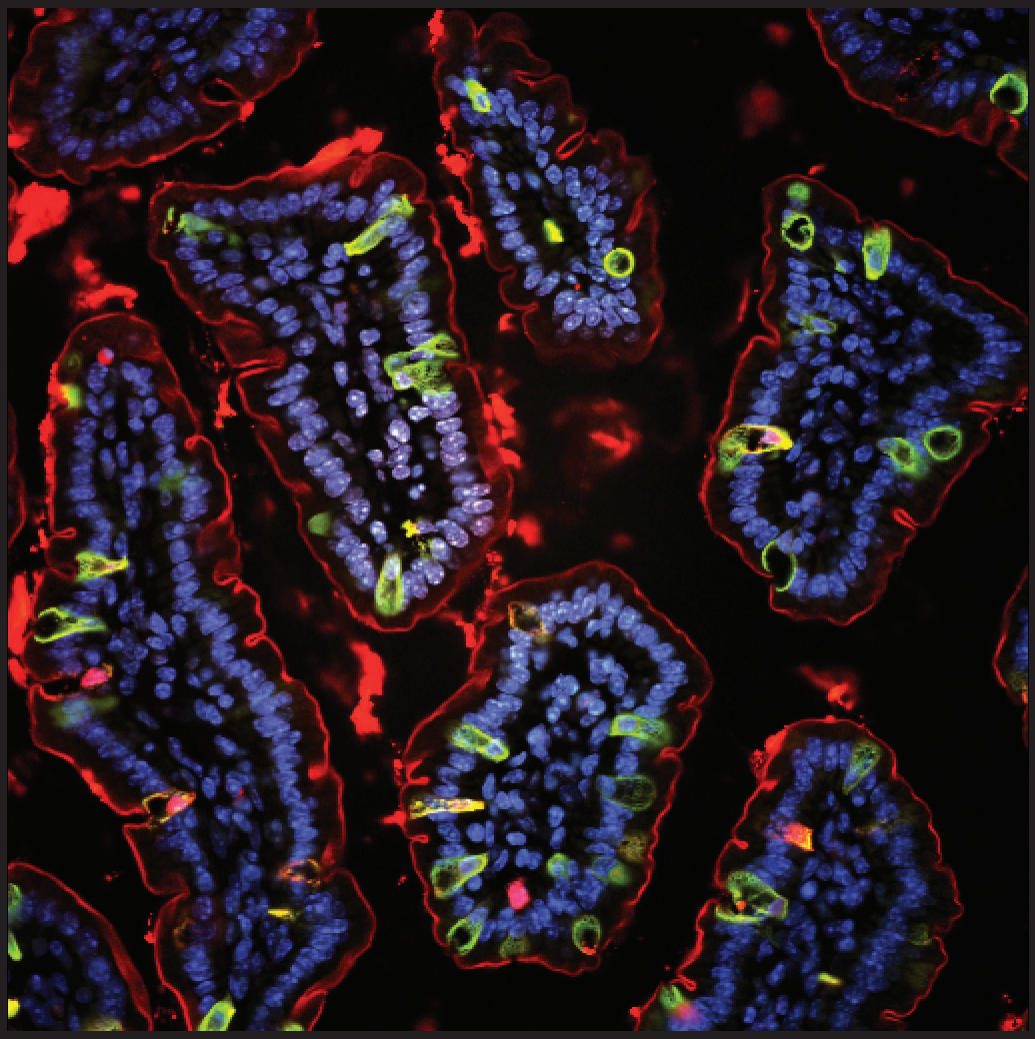

2022
Dalton Cardiovascular Research Center
Committed to Interdisciplinary Collaboration in Research and Teaching

Image on front cover:

Cystic Fibrosis mouse small intestineimmunofluorescent 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

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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

.....CONTENTS.....

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

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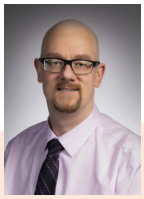

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Discovery of Angiotensin coverting enzyme inhibitor

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Missouri Sports Hall of Fame, 2011

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James R Sowers, MD
Adjunct Professor of Clinical Medicine

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