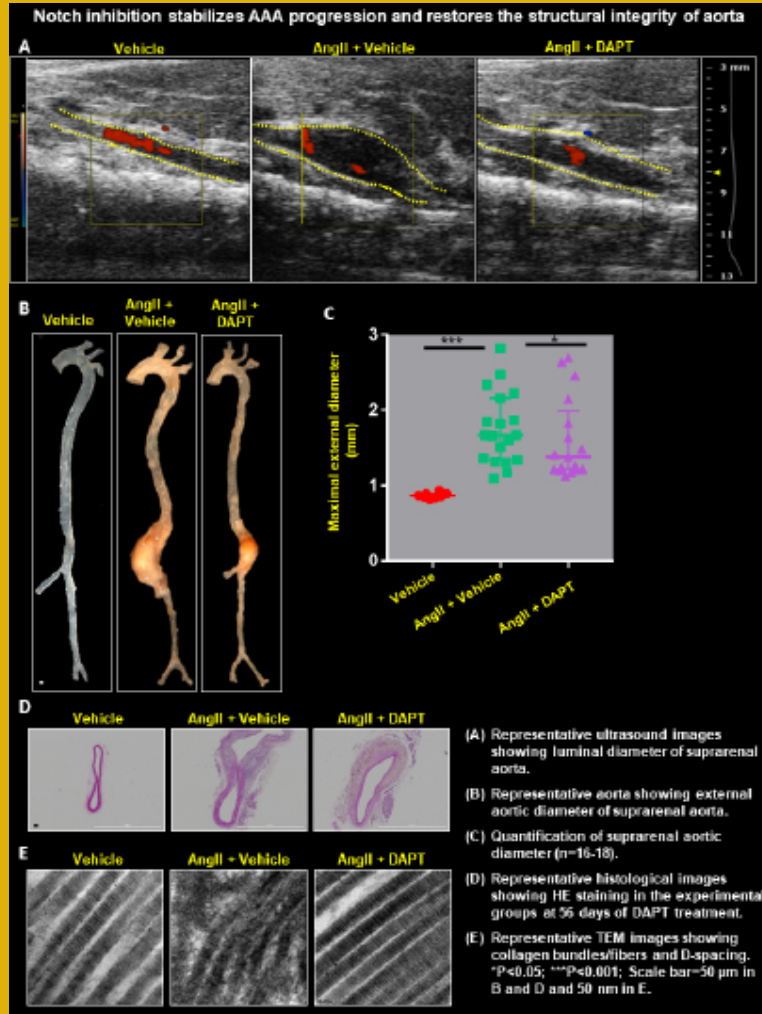




Dalton Cardiovascular
Research Center

Committed to Interdisciplinary
Collaboration in Research and Teaching

2018



DCRC

From the front cover:

Courtesy of Dr Chetan Hans Laboratory:

Our overall objective is to determine if myeloid-specific Notch1 deficiency prevents or reverses AAA progression. My central hypothesis is that deficiency of Notch1 promotes differentiation of M ϕ towards a M2-phenotype by a TGF- β 2 dependent mechanism(s), which attenuates the inflammatory response and protects against AAA development. Successful completion of this project will provide insight into the cellular and molecular mechanisms by which loss of Notch1 signaling in macrophages prevents the progression of AAA, and ultimately may provide the basis for novel therapeutic approaches based on M2 differentiation of M ϕ to treat AAA in humans.

**1500 Research Park Drive
Columbia, MO 65211
573-882-7588
dalton.missouri.edu**

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
Director, Dalton Cardiovascular Research Center
Professor, Medical Pharmacology & Physiology



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- 2. Facts and Figures
- 5. Resident Investigators
- 8. Non Resident Investigators
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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

Investigators	Resident	Non-Resident
Professors	12	18
Associate Professor	4	
Assistant Professor	3	3
Asst. Research Prof.	1	
Assoc. Research Prof.	1	
Academic Res. Scientist	4	
Other Prof.-Adjunct Emeritus, Visiting	14	
Other Personnel		
Research Staff	22	
Post-Doctoral Fellows	20	
Students-GRG/GTA	20	
Students-Undergraduate	11	
Administrative Staff	9	
Visiting Scientist	9	

Patents-Applications/Issued	8/3
Invention Disclosures- Filed/Licensed	3/0

**Resident Scholarly and Professional
Service Activities
01/18-12/18**

Publications	62
Editorial Reviews	24
Grant Review Panels	14
Study Sections	9
Post Grad. Student Completions	5

**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

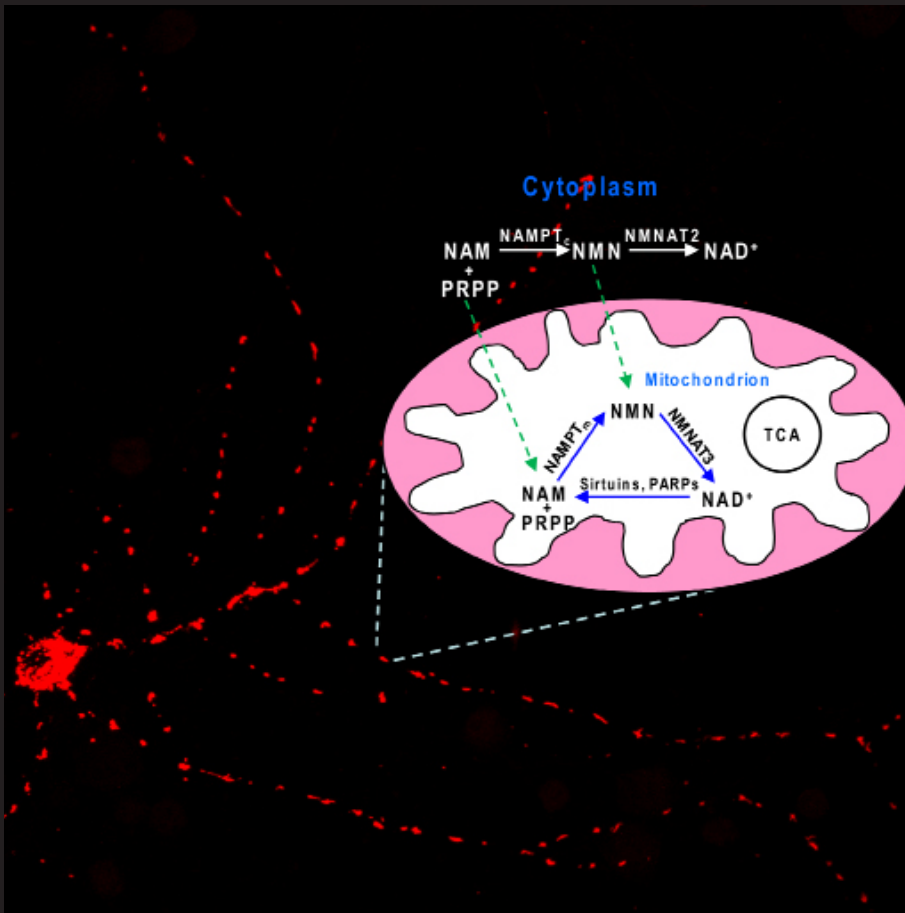


Image courtesy of **Dr Shinghua Ding** Laboratory,
Resident Dalton Investigator

"NAD⁺ salvage pathway in mitochondria in neurons. Background shows an neurons transfected with mRFP in mitochondria."

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

Nutrition & Exercise Physiology

External Sector Collaborations

Domestic

Cornell University
Tensive Controls, Inc
Exocytronics, LLC
Case Western Univ.
ABBVIE Inc.
Washington University, St Louis
Univ. of IL Urbana, Champaign
TX A&M Engineering Experiment Station
Vertex Pharmaceuticals, Inc.
Gilead Sci, Inc.
Tufts University
Flatley Discovery Lab
Univ. of IL, Chicago
Proteostasis Therapeutics, Inc

International

Univ. of Oxford (UK)
Southwest Medical University(CN)
Univ. of Calgary (CA)
Univ. of Sheffield (UK)

RESIDENT INVESTIGATORS



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



Edward H. Blaine - Emeritus Professor
Department of Medical Pharmacology and Physiology



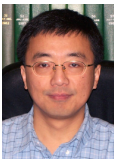
Lane L. Clarke, DVM, PhD, Professor
Department of Biomedical Sciences



Shinghua Ding, PhD
Associate Professor, Biological Engineering



Kevin D. Gillis, DSc, Professor
Biological Engineering
Professor Medical Pharmacology and Physiology



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



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

RESIDENT INVESTIGATORS



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



Cheryl M. Heesch, PhD,
Department of Biomedical Sciences



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



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



Maïke Krenz, M.D.
Associate Professor, Department of Medical Pharmacology and
Physiology

RESIDENT INVESTIGATORS



Yayun Liang, PhD

Research Associate Professor, Department of Biomedical Sciences, Investigator, Dalton Cardiovascular Research Center



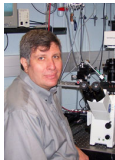
Luis Martinez-Lemus, PhD, DVM

Associate Professor, Department of Medical Pharmacology and Physiology



Gerald A. Meininger, PhD, Emeritus Professor

Margaret Proctor Mulligan Professor in Medical Research
Professor, Department of Medical Pharmacology and Physiology
Adjunct Professor, Department of Biomedical Sciences
Adjunct Professor, Department of Biological Engineering



Luis Polo-Parada, PhD

Associate Professor, Department of Medical Pharmacology and Physiology



Lakshmi Pulakat, PhD, M.Phil

Professor of Medicine/NEP/Internal Medicine



Zhe Sun, PhD

Assistant Research Professor, Dalton Cardiovascular Research Center



Xiaoqin Zou, PhD

Professor, Department of Physics and Department of Biochemistry

Non- Resident Investigators



Shawn B. Bender, Ph.D.
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



Nicola J. Brown, Ph.D.
Adjunct Dalton Investigator
Sheffield Cancer Research Centre



Chandrasekar Bysani, D.V.M., Ph.D.
Margaret Proctor Mulligan Endowed Professor

Non- Resident Investigators



Kevin J. Cummings, Ph.D.
Assistant Professor, Department of Biomedical Sciences



George E. Davis, MD, PhD
Professor of Medical Pharmacology and Physiology
Margaret Proctor Mulligan Professor in Medical Research



Michael J. Davis, PhD
Professor and Associate Department Head, Department of Medical Pharmacology and Physiology



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



Shubra Gangopadhyay, PhD
LaPierre Chair and Joint Professor, Departments of Electrical Engineering, Biological Engineering and Physics



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

Non- Resident Investigators



Virginia H. Huxley, PhD
Director, National Center for Gender Physiology
Professor, Department of Medical Pharmacology and Physiology
Adjunct Professor, Department of Biomedical Sciences



Ronald J. Korthuis, PhD
Bolm Distinguished Professor
Chairman, Department of Medical Pharmacology and Physiology



M. Harold Laughlin, PhD
Professor and Chair, Department of Biomedical Sciences
Adjunct Professor, Department of Medical Pharmacology and Physiology



Mark A. Milanick, PhD
Professor, Department of Medical Pharmacology and Physiology



Nicole L. Nichols, Ph.D.
Assistant Professor, Department of Biomedical Sciences



Jaume Padilla, Ph.D.
Assistant Professor Nutrition & Exercise Physiology

Non- Resident Investigators



Leona J. Rubin, PhD
Associate Professor, Department of Biomedical Sciences
Adjunct Professor, Department of Medical Pharmacology and
Physiology



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



Yoshiro Sohma, MD, PhD
Visiting Professor, Dalton Cardiovascular Research Center



James R Sowers, M.D.
Vice Chair, Professor of Medicine

Publications

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Dalton Cardiovascular Research Center
1500 Research Park Drive
Columbia, MO 65211

573-882-7588
dalton.missouri.edu



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