

Basic Science Research Track Cardiovascular Diseases Fellowship Emory University School of Medicine

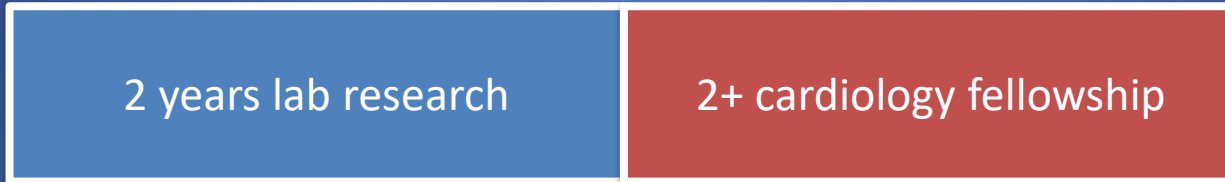


Rebecca Levit, MD
Associate Program Director

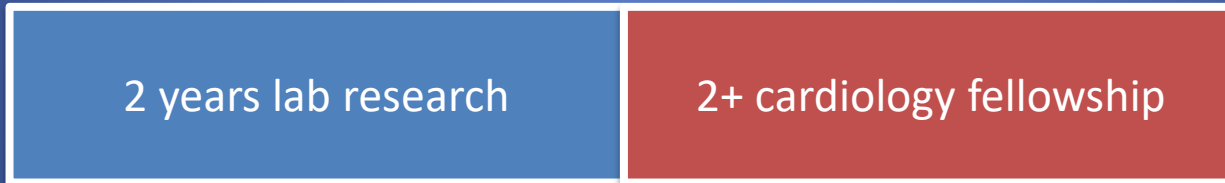


Emory Cardiovascular Fellowship

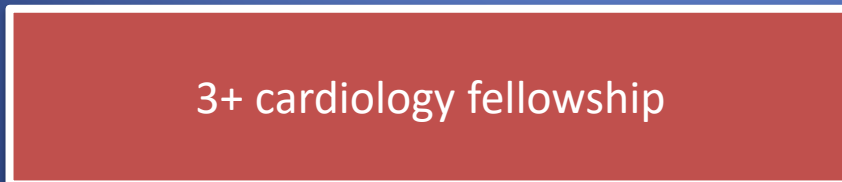
Basic Science Research Track



Clinical Research Track



Clinical Fellowship



Basic Science Research Track

Mission:

To train and prepare physician-scientists for careers in research



Basic Science Research Track

Method:

- 1) Personalized and focused laboratory research
- 2) Research and career mentorship
- 3) Rigorous clinical training



Leadership



W. Robert Taylor, MD PhD
Division Director, Cardiology
Clinician Scientist

Support and mentorship of research careers



Robbie Williams, MD
Program Director, Cardiovascular Disease Fellowship

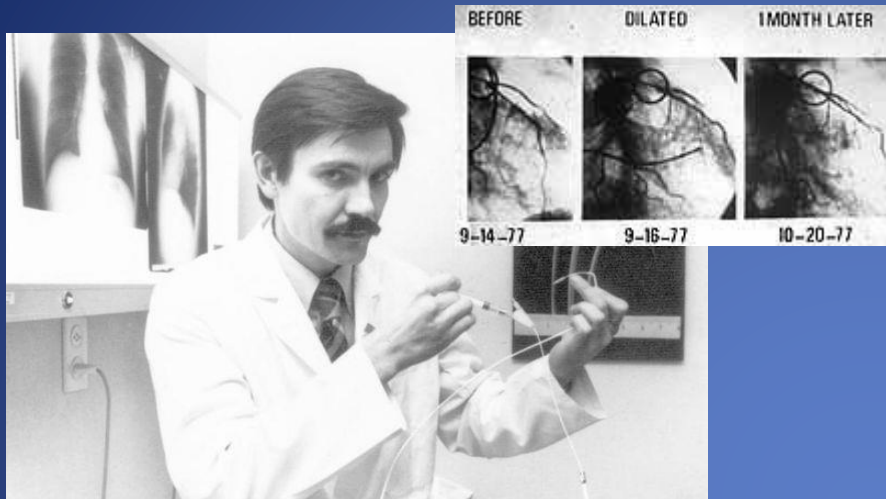
Clinical training



DIVISION OF CARDIOLOGY



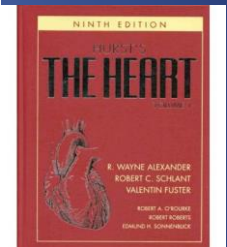
History of innovation and worldwide leadership



Andreas Gruentzig, MD



J. Willis Hurst, MD



R. Wayne Alexander, MD, PhD



Nanette K. Wenger, MD

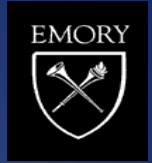


Emory Cardiology

- 100+ fulltime faculty members in the Division of Cardiology
- Annual Research Grants of over \$30 Million Dollars
- Research Faculty at forefront of cardiovascular investigation
 - Guideline authorship
 - AHA leadership
 - National advocacy
- Members of the Editorial Boards of:
Circulation, Circulation Research, ATVB, Hypertension, Journal of Clinical Investigation, American Journal of Physiology, Journal of the American College of Cardiology, and The American Journal of Cardiology.



Emory Cardiology Research Faculty



Basic Science

W. Robert Taylor, MD, PhD

Michael Burke, MD

Michael E. Davis, PhD

Kathy K. Griendling, PhD

Marina Sorrentino Hernandez, PhD

Ahsan Husain, PhD

Hanjoong Jo, PhD

Rebecca Levit, MD

Zhiyong Lin, PhD

Nawazish Naqvi, PhD

Alejandra San Martin, PhD

Charlie Searles, MD

Kiyoko Takemiya, MD

Jinhu Wang, PhD

Young-sup Yoon, MD, PhD

Hee Cheol Cho, PhD

Goal: Match mentor with mentee



Basic Research Faculty

- Mike Davis, PhD – Myocardial biology, reparative/regenerative medicine
- Michael Burke, MD – Epigenetics and genetics of heart failure using animal models
- Kathy Griendling, PhD – NADPH oxidases in vascular biology and disease
- Marina Sorrentino Hernandez, PhD – Poldip2 in ischemic stroke; blood-brain barrier permeability
- Ahsan Husain, PhD – Cardiac regeneration and cardiac renin-angiotensin system
- Hanjoong Jo, PhD – Mechanobiology and nanomedicine
- Rebecca Levit, MD - Innate inflammation in CVD; cell based strategies for ischemic reperfusion injury
- Zhiyong Lin, PhD – Roles of matricellular family of proteins in aortic atherosclerosis and aneurysm
- Marina Sorrentino, PhD - neuroinflammation
- Nawazish Naqvi, PhD – Impact of preadolescent malnutrition on long-term cardiac function.
- Alejandra San Martin, PhD – Regulation of vascular smooth muscle cytoskeleton in CVD
- Charlie Searles, MD – Mechanism of endothelial gene expression; intra- and extracellular microRNAs
- Kiyoko Takemiya, MD – Development of nanoprobes for imaging valve degeneration and infection
- **W. Robert Taylor, MD, PhD** – Animal models of vascular inflammation, aneurysm
- Jinhu Wang, PhD – Regenerative biology of major adult cardiac tissues
- Young-sup Yoon, MD, PhD – Bone marrow derived progenitor cells for repair of heart and vessels



Division of Cardiology

Research strengths:

- Vascular biology, sheer stress
- Endothelial and vascular smooth muscle cells
- Myocardial regenerative medicine
- Stem cell, iPS cells
- Biomedical Engineering – Emory/GA Tech
- miRNA
- Clinical trials: 142 active studies with approx. 6000 participants

Support:

- Federal Grants and contracts
 - PPG, BRP, R01
 - CTSA
- AHA grants
- Fellowship Awards - T32, F32, NIH Fellowship Supplement, AHA



Division of Cardiology: Facilities

- Woodruff memorial research building
 - 12 PI labs
 - 1 'incubator lab' for K funded PIs
 - Imaging core – 2 confocal microscopes, slide scanner
 - Rodent physiology core – ventilators/surgical suite, Vivo transthoracic echo
 - Automated PCR, Western blot, fluorescent plate reader
- Health Science Research Building I
 - Emory home of the Coulter Biomedical Engineering department
 - State of the art labs, equipment facilities
- Health Science Research Building II
 - Under construction – scheduled completion 2021



Division of Cardiology : Resources

- Department of Animal Resources
- Yerkes
- Interdepartment collaborations – e.g. BME
- Interdivision collaborations
- Inter-Institution collaborations
 - Ga Tech, Morehouse School of Medicine
- Partnerships
 - Grady, Ga Tech, CHoA, CDC, Rollins



Emory Resources: Core Labs

- Biomedical Imaging and Technology Center (BITC)
- Emory Center for Systems Imaging
- Emory Personalized Immunotherapy Center (EPIC)
- Emory Integrated Genomics Core (EIGC)
- Flow Cytometry
- Integrated Cellular Imaging
- Integrated Electron Microscopy Core
- Proteomics Core
- Rodent Behavioral Core
- Transgenic Mouse and Gene Targeting Core
- Service Centers



Division of Cardiology

- Fellows Attend AHA or ACC to Present the Results of their Research
- 25 presentations at the 2017 AHA Scientific Sessions
- 15 presentations at the 2018 ACC Annual Meeting



Nanette Wenger to Headline ACC's Opening Showcase Session



ACC President **Mary Norine Walsh, MD, FACC**, will open ACC.18 at Saturday's Opening Showcase Session, where she will deliver her presidential address. **Nanette Kass Wenger, MD, MACC**, a pioneer in

cardiovascular medicine, will set the pace with her 2018 Simon Dack Keynote. Once a student of Dr. Dack, Wenger's address is titled "Understanding the Journey: The Past, Present and Future of CVD in Women."



RESEARCH TRAINING



Research Training: Mentorship

- Weekly mentor meetings – focus on research progress
- Twice yearling associate PD meetings – focus on career
- Twice a year mentorship committee

- Publication goals
- Grantsmanship
- Clinical progress



Research Training: Seminars and Development Opportunities

- Cardiovascular Biology Seminar Series
- Divisional Lab Meeting
- Annual Emory Postdoctoral Research Symposium
- Annual Cardiology Research Symposium
- Molecular Medicine Course
- Biomedical Statistics Lecture Series
- Department of Medicine K-Club
- Atlanta Clinical and Translational Science Institute
- Office of Postdoctoral Education
 - Ethics
 - Grant writing



Research Training: Seminars and Development Opportunities

Hospital-Based Conferences

Internal medicine Grand Rounds

Morbidity & Mortality

Journal Club

Cath/Nuclear Correlation

ECG & Arrhythmia

Cath/Clinical Correlation

Morbidity & Mortality

Echocardiography

Adult Congenital Heart Disease

HF/Transplantation

Clinical Cardiology

Multi-Modality Imaging



Annual Research Symposium

- All Fellows and Postdocs present
- Visiting Professor and Keynote Speaker
- Awards given to best oral and poster presentations



Additional information about research training

- **Office of Postdoctoral Education**
 - <https://med.emory.edu/postdoc/CurPostdoc/index.cfm>
- **Department of Medicine**
 - http://medicine.emory.edu/about_us/index.html
- **Weekly DOM Newsletter**
 - <http://medicine.emory.edu/research/whats-up/newsletter.html>
- **DOM Newsletter – Vitals**
 - <http://medicine.emory.edu/vitals/>
- **Division of Cardiology**
 - <http://medicine.emory.edu/divisions/cardiology/index.html>
- **Cardiology Newsletter**
 - http://medicine.emory.edu/divisions/cardiology/news_pages/current/Jul2013_DivNews.htm
- **K – club – Pediatrics, Medicine and ACTSI**
 - <http://actsi.org/areas/retcd/K-Club.html>
- **Atlanta Clinical and Translational Science Institute (ACTSI)**
 - <http://actsi.org>



EMORY AND ATLANTA



Emory University

- Premier research University in the south
- Largest healthcare system in Georgia
- 16th Largest endowment
- \$350 Million in federal funding
- Nation and international collaborations





Emory Main Campus

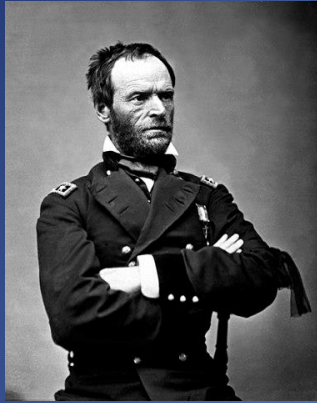
Emory Midtown

Grady





Atlanta: founded 1837 at the terminus of Western & Atlantic railroad



Site of important Civil War Battle
William Sherman, Union General
1861-1865



Founded in Atlanta
Woodruff Family and Foundation
1886

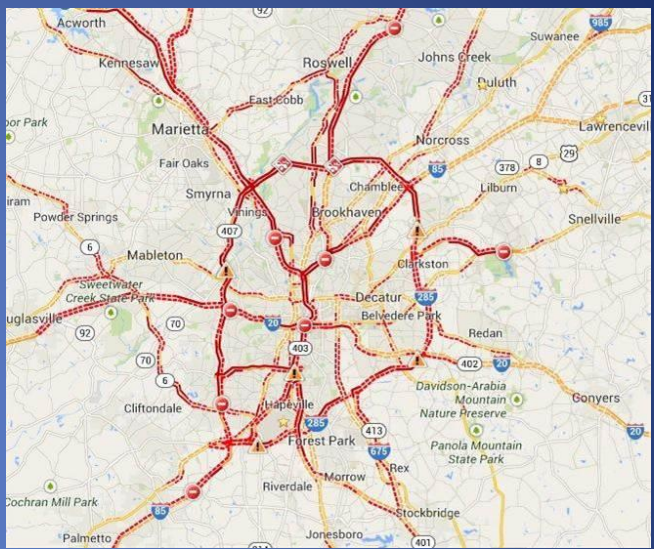


Segregation, Jim Crow Laws
Center of Civil Rights Movement
Dr. Martin Luther King, Jr.
1929-1968



Population exodus in 1960's-1980s to outer suburbs

Shopping malls, commuter culture, traffic



1996 Olympics
Change in
mentality of the
city

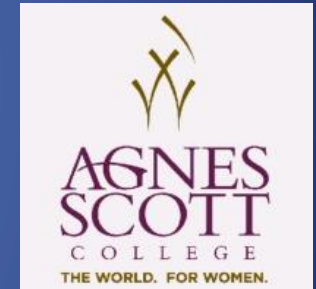
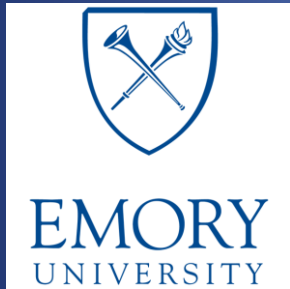


Commercial hub



Home to 15 Fortune 500 Companies

Major Universities



Capital of the Southeast
420,000 residents ITP
4.1 million total in metro area



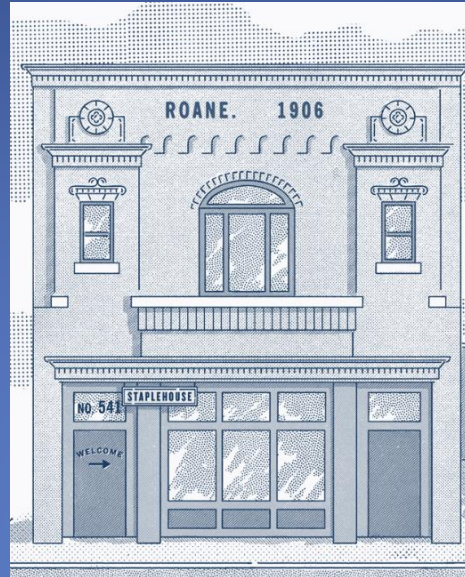
Atlanta Beltline



Music and Culture



Food and restaurants



Usher, Jeff Foxworthy,
Brittney Murphy, Julia
Roberts, Tyler Perry, Ryan
Seacrest, Kenan Thompson,
Ted Turner, T.I., Whitney
Houston & Bobby Brown

455



Interview day schedule

8-9: Introduction

9-10: Cardiovascular Biology Seminar Series

10-12: Interviews with faculty

12-1: Lunch

1-5: Interviews with faculty

6: Dinner with faculty and fellows

Late October, early November: offer letters outside the match



Mission:

To train and prepare physician-scientists for careers in research

Method:

- 1) Personalized and focused laboratory research**
- 2) Research and career mentorship**
- 3) Rigorous clinical training**

Questions?

rlevit@emory.edu

404-457-6540

@emory_heart

