# ANISH S. SHAH, MD, MS

E-mail • Website • Github • ORCID • Scholar Updated June 06, 2024

## PERSONAL INFORMATION

#### PHYSICAL ADDRESS

Office Clinic

University of Illinois Chicago Division of Cardiology 840 S Wood St Suite 920, M/C 715 Chicago, IL 60612 Jesse Brown VA Medical Center 820 S. Damen Avenue Specialty Clinic, 2nd Floor, Damen Tower Chicago, IL 60612

#### **CITIZENSHIP**

United States of America

# **EDUCATION**

#### **ACADEMIC TRAINING**

Bachelor of Science – Linguistics | Neuroscience

Emory University College of Arts and Sciences

Doctor of Medicine

Texas A&M University College of Medicine

Master of Science – Clinical Research

Emory University Laney Graduate School

### **CLINICAL TRAINING**

**Residency** – Internal Medicine 2016 – 2019

J. Willis Hurst Internal Medicine Residency, Emory University School of Medicine

· Distinction in Teaching and Leadership

**Fellowship** – Cardiovascular Medicine 2020 – 2024 University of Illinois Chicago College of Medicine

- Physician-Scientist Track
- Primary Mentor: Dawood Darbar, MD

**Fellowship** – Clinical Cardiac Electrophysiology *2024* – 2026 *University of Utah School of Medicine* 

# **SKILLS**

#### **CLINICAL SKILLS**

Point-of-care ultrasonography
Arterial line placement (radial, brachial, dorsalis pedis)
Arthrocentesis (knee, ankle, shoulder)
Central line placement (internal jugular, femoral, subclavian)
Lumbar puncture
Thoracentesis
Paracentesis
Coronary angiography

### Temporary/permanent pacemaker implantation Echocardiography - 2D/3D, transthoracic and transesophageal

#### **LANGUAGES**

- English fluent
- Gujurati fluent
- Spanish fluent

#### **TECHNICAL SKILLS**

R - programming language for statistical computing

PERL - high-level programming language for text processing and manipulation

C++ - low-level programming language for data processing

Vim - command line editing

Git - version control system

MATLAB - matrix-oriented mathematical programming language

Python - high-level programming language for data analysis

#### **CERTIFICATIONS**

Emergency Medical Technician Basic <i>National Registry of Emergency Medica</i> Technicians	al 2007 – 2010
Basic Life Support American Heart Association	2012 – Present
Advanced Cardiovascular Life Support  American Heart Association	2012 – Present
Advanced Trauma Life Support American College of Surgeons	2012 – 2016
Open Water Diver Professional Association of Diving Instructors	2015 – Present
Wilderness First Responder National Outdoor Leadership School	2016 – Present
Basic Keelboat 101 American Sailing Association	2017 – Present
Internal Medicine American Board of Internal Medicine	2019 – Present
Adult Echocardiography National Board of Echocardiography	2023 – Present
Cardiovascular Medicine American Board of Internal Medicine	2023 – Present

# **APPOINTMENTS**

Postdoctoral Research Fellow – Epidemiology	2019 – 2020
Emory University Rollins School of Public Health	
NIH-TL1 Scholar	
Primary Mentor: Amit J. Shah, MD, MS	

2019 - 2020

# Assistant Professor of Medicine Division of Hospital Medicine, Emory University School of Medicine

Service Lines: Hospital Medicine, Procedure Service

• Locations: Grady Memorial Hospital, Emory University Midtown Hospital

Instructor of Medicine 2020 – 2024

College of Medicine, University of Illinois Chicago

# **HONORS AND AWARDS**

# **LOCAL**

Delores B. Aldridge Excellence in Service to a Diverse Community Award Emory University	2009
Speaker to His Holiness the XIV Dalai Lama Emory-Tibet Science Initiative	2009
<ul> <li>Selected to represent Emory students in a meeting with the 14th Dalai Lai Gange, India.</li> </ul>	ma in MacLeod
Nu Rho Psi Honor Society Emory University	2009 – 2011
College of Medicine Research Symposium  Texas A&M University	2015
• 1 <sup>st</sup> Place Oral Presentation	
REGIONAL	
Doctor's Dilemma (Medical Jeopardy) Georgia American College of Physician Conference	2017
NATIONAL	
EMT-Basic National Competition Health Occupation Students of America	2007
• 1 <sup>st</sup> Place	
Medical Student Research Program in Diabetes National Institute of Diabetes and Digestive and Kidney Diseases	2013
American Heart Association Scientific Sessions - Top Donors Meeting Pre	esentation 2018
<ul> <li>Special invitation to discuss research with AHA leadership and top philantle</li> </ul>	hropists
NIH-TL1 Postdoctoral Fellow	2019-2020
Ruth L. Kirschtein National Research Service Award	2013-2020
Ruth L. Kirschtein National Research Service Award  NIH-T32 Postdoctoral Fellow  Ruth L. Kirschtein National Research Service Award	2019-2020
NIH-T32 Postdoctoral Fellow	
NIH-T32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award NIH-F32 Postdoctoral Fellow	2019-2020
NIH-T32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award NIH-F32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award	2019-2020
NIH-T32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  NIH-F32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  INTERNATIONAL  Atrial Fibrillation Genetics Consortium Fellow	2019-2020 2021-2024
NIH-T32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  NIH-F32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  INTERNATIONAL  Atrial Fibrillation Genetics Consortium Fellow Atrial Fibrillation Genetics Consortium	2019-2020 2021-2024
NIH-T32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  NIH-F32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  INTERNATIONAL  Atrial Fibrillation Genetics Consortium Fellow Atrial Fibrillation Genetics Consortium  PROFESSIONAL ACTIVITIES	2019-2020 2021-2024
NIH-T32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  NIH-F32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  INTERNATIONAL  Atrial Fibrillation Genetics Consortium Fellow Atrial Fibrillation Genetics Consortium  PROFESSIONAL ACTIVITIES  PROFESSIONAL SOCIETIES  Texas Medical Association	2019-2020 2021-2024 2023 – 2024
NIH-T32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  NIH-F32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  INTERNATIONAL  Atrial Fibrillation Genetics Consortium Fellow Atrial Fibrillation Genetics Consortium  PROFESSIONAL ACTIVITIES  PROFESSIONAL SOCIETIES  Texas Medical Association Student Member  American College of Physicians	2019-2020 2021-2024 2023 - 2024 2012 - 2016
NIH-T32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  NIH-F32 Postdoctoral Fellow Ruth L. Kirschtein National Research Service Award  INTERNATIONAL  Atrial Fibrillation Genetics Consortium Fellow Atrial Fibrillation Genetics Consortium  PROFESSIONAL ACTIVITIES  PROFESSIONAL SOCIETIES  Texas Medical Association Student Member  American College of Physicians Member  American Medical Aossciation	2019-2020 2021-2024 2023 – 2024 2012 – 2016 2012 – Present

Heart Rhythm Society Fellow-In-Training	2023 – Present
SERVICE	
Ad-Hoc Reviewer:	
BMJ Open Diabetes Research & Care Journal of Electroconvulsive Therapy Journal of Cardiovascular Electrophysiology BMJ Open Circulation: Arrhythmia and Electrophysiology Applied Psychophysiology and Biofeedback BMC Global and Public Health	2019 2020 2021 2021 2023 2024 2024
TEACHING AND MENTORING ACTIVITIES	
PRECEPTORSHIP	
Teaching Assistant – Cellular Biology Department of Biology, Emory University College of Arts and Sciences	2010
Tutor – Biology, Chemistry, Physics Department of Physics, North Lake College	2011 – 2012
Tutor – Histology Texas A&M University College of Medicine	2013
Faculty Preceptor – Physician Assistant Program  Didactic Experiential Learning Program, Emory University School of Medi	2017 – 2019 icine
Teaching Attending – Point-of-Care Ultrasound Elective J. Willis Hurst Inte Medicine Residency Program, Emory University School of Medicine	ernal 2019 – 2020
WORKSHOPS	
Session Leader – Internship Bootcamp Texas A&M University College of Medicine	2016
Workshop Leader – M3 Ultrasound Workshop  Emory University School of Medicine	2018 – 2019
Workshop Leader – Physical Exam and Clinical Decision Making Emory University School of Medicine	2019
Workshop Leader – Point-of-Care Ultrasound Workshop Southern Hospital Medicine Conference	2018
CLINICAL PRESENTATIONS	
Emory University:	
Bite-Sized Teaching Mode: Lotions, Ointments, and Creams, Oh My!  Journal Club: Intervention for Ischemic Stroke  Bite-Sized Teaching Mode: Ironing Out Transfusions in Sickle Cell	February 28, 2018 March 21, 2018 September 26, 2018
University of Illinois Chicago:	
Journal Club: GALACTIC-HF	December 20, 2020 February 1, 2021 November 16, 2021 December 7, 2022 February 23, 2023 April 8, 2024

#### **MENTORSHIP**

Shishir Gupta 2019 – 2020

Medical Student at Department of Epidemiology, Rollins School of Public Health, Emory University

· Research mentorship

Shashank Sadhu 2022 – Present

Medical Student at College of Medicine, University of Illinois Chicago

• Mentor for James Cook Scholarship

Darren Seaney 2023 – Present

Medical Student at College of Medicine, University of Illinois Chicago

 Mentor for Craig Scholarship Mentor for NIDDK-T35 on Diabetes and Atrial Fibrillation

Angela Hussain 2023 – 2024

Medical Student at College of Medicine, University of Illinois Chicago

 Mentor for Urban Health Scholarship Mentor for James Cook Scholarship

## **INVITED PRESENTATIONS**

#### **LOCAL**

Point-of-Care Ultrasound: Parasternal Long Axis

November 16, 2017

Division of General Medicine and Geriatrics

Emory University School of Medicine

The Problem Learner: A History and Physical for Learners with Difficulties March 15, 2018

J. Willis Hurst Internal Medicine Residency Program

Emory University School of Medicine

The History of Sudden Cardiac Death: the Role of the Autonomic Nervous System

J. Willis Hurst Internal Medicine Residency Program

February 18, 2019

Emory University School of Medicine

· Senior Grand Rounds

Vagolysis and Arrhythmogenesis *University of Illinois Chicago Department February* 12, 2023 of Medicine

Autonomic and Structural Mechanisms in Atrial Fibrillation University of Illinois Chicago Department of Medicine December 18, 2023

#### **REGIONAL**

"8 Minutes-to-Win-It": Top Inpatient Teaching Sessions by Soon-To-Be-Leaders

Southern Hospital Medicine Conference

October 4, 2018

#### NATIONAL

Circadian Autonomic Inflexibility: A Marker of Ischemic Heart Disease November 6, 2018

American Heart Association Scientific Sessions

• Top Donors Meeting Presentation

ECG Prediction of Loss-of-Function TTN Variants

March 27, 2024

AFGen Consortium Fellowship Meeting

Mendelian Randomization in Practice AFGen Consortium Fellows Meeting

April 24, 2024

#### **FUNDING**

NIH-T32 Postdoctoral Scholar

2019 – 2020

Disturbances of the Neurocardiac Axis: Using Heart Rate Variability to Measure Disease in

the Brain and Heart NHLBI Training Grant

- TL1-TR002382
- UL1-TR002378

#### NIH-T32 Postdoctoral Fellow

2022 - 2024

Training Program in Personalized Cardiovascular Medicine (TPIPCVM) NHLBI Training Grant

• T32-HL139439

NIH-F32 Principal Investigator Association of Autonomic Dysfunction with the 2021 – 2024 Relationship between Depression and Coronary Disease NHLBI Training Grant

• F32-HL154707

# **PUBLICATIONS**

#### PEER-REVIEWED PUBLICATIONS

- Shah, AS, Lampert, R, Goldberg, J, Bremner, JD, Li, L, Thames, MD, Vaccarino, V, Shah, AJ (2020). Alterations in heart rate variability are associated with abnormal myocardial perfusion. International Journal of Cardiology 305, 99-105. doi:10.1016/j.ijcard.2020.01.069
- Shah, AS, Alonso, A, Whitsel, EA, Soliman, EZ, Vaccarino, V, Shah, AJ (2021). Association of Psychosocial Factors With Short-Term Resting Heart Rate Variability: The Atherosclerosis Risk in Communities Study. Journal of the American Heart Association 10(5), e017172. doi:10.1161/ JAHA.120.017172
- 3. Vaccarino, V, Almuwaqqat, Z, Kim, JH, Hammadah, M, Shah, AJ, Ko, YA, Elon, L, Sullivan, S, Shah, A, Alkhoder, A, Lima, BB, Pearce, B, Ward, L, Kutner, M, Hu, Y, Lewis, TT, Garcia, EV, Nye, J, Sheps, DS, Raggi, P, Bremner, JD, Quyyumi, AA (2021). Association of Mental Stress–Induced Myocardial Ischemia With Cardiovascular Events in Patients With Coronary Heart Disease. JAMA 326(18), 1818-1828. doi:10.1001/jama.2021.17649
- Moazzami, K, Cheung, B, Sullivan, S, Shah, AS, Almuwaqqat, Z, Alkhoder, A, Mehta, PK, Pearce, BD, Shah, AJ, Martini, A, Obideen, M, Nye, J, Bremner, JD, Vaccarino, V, Quyyumi, AA (2023). Hemodynamic Reactivity to Mental Stress in Patients With Coronary Artery Disease. JAMA Network Open 6(10), e2338060. doi:10.1001/jamanetworkopen.2023.38060
- Huang, M, Shah, AJ, Lampert, R, Bliwise, DL, Johnson, DA, Clifford, GD, Sloan, R, Goldberg, J, Ko, YA, Da Poian, G, Perez-Alday, EA, Almuwaqqat, Z, **Shah, AS**, Garcia, M, Young, A, Moazzami, K, Bremner, JD, Vaccarino, V (2024). Heart Rate Variability, Deceleration Capacity of Heart Rate, and Death: A Veteran Twins Study. Journal of the American Heart Association 13(7), e032740. doi:10.1161/JAHA.123.032740
- Shah, AS, Ongtengco, A, Qiao, V, Chen, Y, Diaz, A, Hill, M, Bhan, A, Tofovic, DS, Darbar, D (2024). Association Between Family History and Early-Onset Atrial Flutter Across Racial and Ethnic Groups. Journal of the American Heart Association 13(10), e032320. doi:10.1161/JAHA. 123.032320

#### **WORKING MANUSCRIPTS**

- 1. Shah, AJ, **Shah, AS** (2020). Cardiotoxic Effects of Diabetes Mellitus in South Asians.
- 2. **Shah, AS**, Vaccarino, V, Moazzami, K, Almuwaqqat, Z, Garcia, M, Ward, L, Elon, L, Ko, YA, Sun, Y, Pearce, BD, Raggi, P, Bremner, JD, Lampert, R, Quyyumi, AA, Shah, AJ (2024). Autonomic Reactivity to Mental Stress is Associated with Cardiovascular Mortality.
- 3. **Shah, AS**, Alonso, A, Sweis, J, Chen, Y, Griza, S, Barney, M, Diaz, A, Al-Azzam, B, Ornelas-Loredo, A, Ziccardi, MR, Darbar, FA, Shah, AJ, Benjamin, EJ, Darbar, D (2024). Association of Atrial Fibrillation Symptom Burden with Social Determinants of Health.

#### **RESEARCH-IN-PROGRESS**

- 1. **Shah, AS**, Poian, GD, Shah, AJ (2020). Psychological Effects on Autonomic Variability in Circadian Rhythm.
- 2. **Shah, AS**, Shah, AJ, Choi, SH, Benjamin, E, Darbar, D (2024). Electrical Phenotypes of Genetic Risk for Atrial Fibrillation.

#### **MONOGRAPHS**

1. **Shah, AS** (2021). 'Stress Reactivity: Disturbances of the Neurocardiac Axis'. Master's Thesis. Emory University. https://etd.library.emory.edu/concern/etds/tx31qi818

#### **SOFTWARE**

- Shah, AS (2020). card: Cardiovascular Applications in Research Data, Version: NA. https://cran.r-project.org/package=card
- Shah, AS (2024). rmdl: Language to Manage Many Models, Version: 0.1.0. https://cran.rproject.org/package=rmdl
- Shah, AS (2024). EGM: Evaluating Cardiac Electrophysiology Signals, Version: 0.1.0. https://cran.r-project.org/package=EGM

#### **CONFERENCE PROCEEDINGS**

- Shah, A, Lampert, R, Goldberg, J, Bremner, JD, Vaccarino, V, Shah, A (2018). Circadian Autonomic Inflexibility: A Marker of Ischemic Heart Disease. AHA Scientific Sessions 2018, 2018-11-06, NA. In: Circulation 138, A15216-A15216. doi:doi:10.1161/circ.138.suppl 1.15216
- Shah, A, Alonso, A, Whitsel, EA, Soliman, EZ, Vaccarino, V, Shah, AJ (2020). Association of Psychosocial Factors With Heart Rate Variability: The Atherosclerosis Risk in Communities Study. AHA Scientific Sessions 2020, 2020-03-03, Chicago, IL. In: Circulation 141, AP542-AP542. doi:doi:10.1161/circ.141.suppl 1.P542
- Shah, AS (2020). Autonomic Dysfunction as a Marker of Depression and Coronary Artery Disease. Translational Science 2020, 2020-06-01, Virtual. In: Journal of Clinical and Translational Science 4, 93-93. doi:doi:10.1017/cts.2020.291
- Hill, MC, Chalazan, B, Tofovic, D, Chen, Y, Shah, A, Barney, M, Diaz, A, Konda, S, Darbar, D (2023). Prevalence of disease-associated cardiomyopathy gene variants in ethnic minorities with atrial fibrillation. ACC.23, 2023-03-07, New Orleans, LA. In: Journal of the American College of Cardiology 81, 21-21. doi:doi:10.1016/S0735-1097(23)00465-5
- Shah, AS, Vaccarino, V, Ko, YA, Almuwaqqat, Z, Garcia, M, Moazzami, K, Wang, M, Levantsevych, O, young, a, Ward, L, Nye, J, Raggi, P, Sheps, DS, Lampert, RJ, Bremner, D, Sun, Y, Garcia, EV, Quyyumi, AA, Shah, AJ (2023). Mental stress-induced autonomic dysfunction is associated with cardiovascular mortality. ACC.23, 2023-03-07, New Orleans, LA. In: Journal of the American College of Cardiology 81, 1146-1146. doi:doi:10.1016/ S0735-1097(23)01590-5
- Wang, M, Liu, C, Shah, AS, Ko, YA, Sun, Y, Lampert, RJ, Garcia, M, Moazzami, K, Almuwaqqat, Z, Ward, L, Sullivan, S, Raggi, P, Bremner, D, Quyyumi, AA, Vaccarino, V, Morris, AA, Shah, AJ (2023). Heart Rate Variability During Mental Stress Predicts Heart Failure Outcomes In Patients With Stable Coronary Artery Disease. ACC.23, 2023-03-07, New Orleans, LA. In: Journal of the American College of Cardiology 81, 469. doi:doi:10.1016/ S0735-1097(23)00913-0
- 7. Osei, J, Vaccarino, V, Wang, M, Shah, AS, Lampert, RJ, Ko, YA, Pearce, B, Kutner, M, Garcia, EV, Piccinelli, M, Raggi, P, Bremner, J, Quyyumi, AA, Sun, Y, Haddad, G, Li, L, Correia, L, Roberts, TE, Stefanos, L, Ahmed, H, Shah, AJ (2024). Stress-Induced Autonomic Dysfunction is Associated With Mental Stress-Induced Myocardial Ischemia in Patients With Coronary Artery Disease. AHA EPI|Lifestyle Scientific Sessions 2024, 2024-03-19, Chicago, IL. In: Circulation 149, AP241-AP241. doi:doi:10.1161/circ.149.suppl 1.P241