

# ANISH S. SHAH, MD, MS

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Updated June 13, 2024

## PERSONAL INFORMATION

### PHYSICAL ADDRESS

#### Office

University of Illinois Chicago  
Division of Cardiology  
840 S Wood St  
Suite 920, M/C 715  
Chicago, IL 60612

#### Clinic

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 2007 – 2011  
*Emory University College of Arts and Sciences*

**Doctor of Medicine** 2012 – 2016  
*Texas A&M University College of Medicine*

**Master of Science** – Clinical Research 2019 – 2020  
*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
- Gujarati – 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 *National Registry of Emergency Medical Technicians* 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** *Emory University Rollins School of Public Health* 2019 – 2020

- NIH-TL1 Scholar
- Primary Mentor: Amit J. Shah, MD, MS

**Assistant Professor of Medicine** *Division of Hospital Medicine, Emory University School of Medicine* 2019 – 2020

- Service Lines: Hospital Medicine, Procedure Service
- Locations: Grady Memorial Hospital, Emory University Midtown Hospital

**Instructor of Medicine** *College of Medicine, University of Illinois Chicago* 2020 – 2024

# HONORS AND AWARDS

## LOCAL

Delores B. Aldridge Excellence in Service to a Diverse Community Award 2009  
*Emory University*

Speaker to His Holiness the XIV Dalai Lama 2009  
*Emory-Tibet Science Initiative*

- Selected to represent Emory students in a meeting with the 14th Dalai Lama in MacLeod Gange, India.

Nu Rho Psi Honor Society 2009 – 2011  
*Emory University*

College of Medicine Research Symposium 2015  
*Texas A&M University*

- 1<sup>st</sup> Place Oral Presentation

## REGIONAL

Doctor's Dilemma (Medical Jeopardy) 2017  
*Georgia American College of Physician Conference*

## NATIONAL

EMT-Basic National Competition *Health Occupation Students of America* 2007

- 1<sup>st</sup> Place

Medical Student Research Program in Diabetes 2013  
*National Institute of Diabetes and Digestive and Kidney Diseases*

American Heart Association Scientific Sessions - Top Donors Meeting Presentation 2018

- Special invitation to discuss research with AHA leadership and top philanthropists

NIH-TL1 Postdoctoral Fellow 2019-2020  
*Ruth L. Kirschstein National Research Service Award*

NIH-T32 Postdoctoral Fellow 2019-2020  
*Ruth L. Kirschstein National Research Service Award*

NIH-F32 Postdoctoral Fellow 2021-2024  
*Ruth L. Kirschstein National Research Service Award*

## INTERNATIONAL

Atrial Fibrillation Genetics Consortium Fellow 2023 – 2024  
*Atrial Fibrillation Genetics Consortium*

# PROFESSIONAL ACTIVITIES

## PROFESSIONAL SOCIETIES

Texas Medical Association 2012 – 2016  
*Student Member*

American College of Physicians 2012 – Present  
*Member*

American Medical Association 2012 – Present  
*Member*

American Heart Association 2018 – Present  
*Fellow-In-Training*

American College of Cardiology 2020 – Present  
*Fellow-In-Training*

## SERVICE

### *Ad-Hoc Reviewer:*

BMJ Open Diabetes Research & Care	2019
Journal of Electroconvulsive Therapy	2020
Journal of Cardiovascular Electrophysiology	2021
BMJ Open	2021
Circulation: Arrhythmia and Electrophysiology	2023
Applied Psychophysiology and Biofeedback	2024
BMC Global and Public Health	2024

## TEACHING AND MENTORING ACTIVITIES

### PRECEPTORSHIP

Teaching Assistant – Cellular Biology <i>Department of Biology, Emory University College of Arts and Sciences</i>	2010
Tutor – Biology, Chemistry, Physics <i>Department of Physics, North Lake College</i>	2011 – 2012
Tutor – Histology <i>Texas A&amp;M University College of Medicine</i>	2013
Faculty Preceptor – Physician Assistant Program <i>Didactic Experiential Learning Program, Emory University School of Medicine</i>	2017 – 2019
Teaching Attending – Point-of-Care Ultrasound Elective <i>J. Willis Hurst Internal Medicine Residency Program, Emory University School of Medicine</i>	2019 – 2020

### WORKSHOPS

Session Leader – Internship Bootcamp <i>Texas A&amp;M University College of Medicine</i>	2016
Workshop Leader – M3 Ultrasound Workshop <i>Emory University School of Medicine</i>	2018 – 2019
Workshop Leader – Physical Exam and Clinical Decision Making <i>Emory University School of Medicine</i>	2019
Workshop Leader – Point-of-Care Ultrasound Workshop <i>Southern Hospital Medicine Conference</i>	2018

### CLINICAL PRESENTATIONS

#### *Emory University:*

Bite-Sized Teaching Mode: Lotions, Ointments, and Creams, Oh My!	February 28, 2018
Journal Club: Intervention for Ischemic Stroke	March 21, 2018
Bite-Sized Teaching Mode: Ironing Out Transfusions in Sickle Cell	September 26, 2018

#### *University of Illinois Chicago:*

Clinical Case Conference: Restrictive Cardiomyopathy	December 20, 2020
Journal Club: GALACTIC-HF	February 1, 2021
Cardiac Catheterization Conference: Antiplatelet Agents	November 16, 2021
Electrophysiology Conference: Typical AVNRT	December 7, 2022
Echocardiography Conference: Hypertrophic Cardiomyopathy	February 23, 2023
Clinical Case Conference: Dilated Cardiomyopathy	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 of Medicine* February 12, 2023

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

### 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 April 24, 2024  
*AFGen Consortium Fellows Meeting*

## 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 Relationship between Depression and Coronary Disease* 2021 – 2024  
*NHLBI Training Grant*

- F32-HL154707

## PUBLICATIONS

### PEER-REVIEWED PUBLICATIONS

1. **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](https://doi.org/10.1016/j.ijcard.2020.01.069)
2. **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](https://doi.org/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](https://doi.org/10.1001/jama.2021.17649)
4. 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](https://doi.org/10.1001/jamanetworkopen.2023.38060)
5. 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](https://doi.org/10.1161/JAHA.123.032740)
6. **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](https://doi.org/10.1161/JAHA.123.032320)
7. Osei, J, Vaccarino, V, Wang, M, **Shah, AS**, Lampert, R, Li, LY, Ko, YA, Pearce, BD, Kutner, M, Garcia, EV, Piccinelli, M, Raggi, P, Bremner, JD, Quyyumi, AA, Sun, YV, Ahmed, H, Haddad, G, Daaboul, O, Roberts, T, Stefanos, L, Correia, L, Shah, AJ (2024). Stress-Induced Autonomic Dysfunction is Associated With Mental Stress-Induced Myocardial Ischemia in Patients With Coronary Artery Disease. *Circulation. Cardiovascular Imaging* NA, e016596. doi:[10.1161/CIRCIMAGING.124.016596](https://doi.org/10.1161/CIRCIMAGING.124.016596)

### WORKING MANUSCRIPTS

1. Shah, AJ, **Shah, AS** (2020). Cardiotoxic Effects of Diabetes Mellitus in South Asians.
2. **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.
3. **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.

### 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/tx31qj818>

## SOFTWARE

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

## CONFERENCE PROCEEDINGS

1. 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](https://doi.org/10.1161/circ.138.suppl_1.15216)
2. 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](https://doi.org/10.1161/circ.141.suppl_1.P542)
3. **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](https://doi.org/10.1017/cts.2020.291)
4. 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](https://doi.org/10.1016/S0735-1097(23)00465-5)
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](https://doi.org/10.1016/S0735-1097(23)01590-5)
6. 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](https://doi.org/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](https://doi.org/10.1161/circ.149.suppl_1.P241)