

# Anish Sanjay Shah

Cardiology Fellow

## Curriculum Vitae

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Cardiology fellow with a clinical interest in neural regulation of cardiac physiology and cardiac electrophysiology, and a research interest in epidemiology/causality, harmonic regressions, recurrent event analysis, and digital signal processing.

## Academic Qualifications and Positions

### Education

2007–2011	<b>Bachelor of Science</b> <ul style="list-style-type: none"><li>➤ Linguistics</li><li>➤ Neuroscience &amp; Behavioral Biology</li></ul>	Emory University College of Arts and Sciences
2012–2016	<b>Doctor of Medicine</b>	Texas A&M University College of Medicine
2019–2021	<b>Master of Science</b>	Emory University Laney Graduate School

### Clinical Training

2016–2019	<b>J. Willis Hurst Internal Medicine Residency</b> <ul style="list-style-type: none"><li>➤ Distinction in Teaching and Leadership</li></ul>	Emory University School of Medicine
2020–2024	<b>Cardiology Fellowship</b> <ul style="list-style-type: none"><li>➤ T32 Physician-Scientist Track</li></ul>	University of Illinois Chicago School of Medicine

### Academic Appointments

2024–2026	<b>Clinical Cardiac Electrophysiology Fellowship</b> <ul style="list-style-type: none"><li>➤ Clinical fellow at the University of Utah Hospital and VA Medical Center</li></ul>	University of Utah
2022–2024	<b>NIH-T32 Cardiology Research Fellow</b> <ul style="list-style-type: none"><li>➤ Research fellow in cardiac arrhythmias and genetics</li></ul>	University of Illinois Chicago School of Medicine
2020–2024	<b>Clinical Cardiology Fellowship</b> <ul style="list-style-type: none"><li>➤ Research-track, clinical fellow at University of Illinois Hospital and Jesse Brown VA Medical Center</li></ul>	University of Illinois Chicago School of Medicine
2019–2020	<b>Postdoctoral Fellow</b> <ul style="list-style-type: none"><li>➤ Epidemiology/biostatistical research in autonomic dysfunction</li></ul>	Department of Epidemiology, Rollins School of Public Health
2019–2020	<b>Assistant Professor of Medicine</b> <ul style="list-style-type: none"><li>➤ Hospital medicine attending</li></ul>	Division of Hospital Medicine, Emory University School of Medicine
2019–2020	<b>NIH-TL1 Postdoctoral Scholar</b> <ul style="list-style-type: none"><li>➤ Research fellow in autonomic dysfunction</li></ul>	Georgia Clinical and Translational Science Alliance
2016–2017	<b>Internship</b> <ul style="list-style-type: none"><li>➤ Internal medicine intern at Grady Memorial Hospital, Emory University Hospital, and Atlanta VA Medical Center</li></ul>	Emory University School of Medicine
2016–2020	<b>Internal Medicine Residency</b> <ul style="list-style-type: none"><li>➤ Internal medicine junior and senior resident at Grady Memorial Hospital, Emory University Hospital, and Atlanta VA Medical Center</li></ul>	Emory University School of Medicine

## Honors and Awards

2023–2024	<b>Atrial Fibrillation Genetics Fellow</b> <ul style="list-style-type: none"><li>➤ Genetics of atrial fibrillation research award</li></ul>	Atrial Fibrillation Genetics Consortium
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2019	<b>TL1 Postdoctoral Scholar</b> ➤ Georgia Translational Science Alliance	Ruth L. Kirschstein National Research Service Award
2018	<b>Top Donors Meeting Presentation</b> ➤ Special invitation to discuss research with AHA leadership and top philanthropists	American Heart Association Scientific Sessions
2017	<b>Emory Resident Team</b> ➤ Doctor's Dilemma	Georgia ACP Conference
2015	<b>Research Symposium</b> ➤ 1st Place Oral Presentation	Texas A&M University College of Medicine
2013	<b>Medical Student Research Program in Diabetes</b> ➤ National Institute of Diabetes and Digestive and Kidney Diseases	Johns Hopkins University School of Medicine
2009	<b>Delores B. Aldridge Excellence in Service to a Diverse Community Award</b>	Emory University College of Arts and Sciences
2009–2011	<b>Nu Rho Psi Honor Society</b>	Emory University College of Arts and Sciences
2009	<b>Speaker to his Holiness the XIV Dalai Lama</b> ➤ Selected to represent Emory students in a meeting with the Dalai Lama in MacLeod Gange, India.	Institute of Buddhist Dialectics
2007	<b>EMT-Basic National Competition</b> ➤ 1st Place	Health Occupation Students of America

## Professional Memberships

2020–Present	<b>American College of Cardiology</b>
2018–Present	<b>American Heart Association</b>
2012–2016	<b>Texas Medical Association</b>
2012–Present	<b>American Medical Association</b>
2012–Present	<b>American College of Physicians</b>

## Teaching

### Teaching Positions

2020–2022	<b>Workshop Leader</b> ➤ Critical Care and Resuscitation Committee	University of Illinois Chicago School of Medicine
2019	<b>Workshop Leader</b> ➤ Physical Exam and Clinical Decision Making Course	Emory University School of Medicine
2019–2020	<b>Teaching Attending</b> ➤ Point-of-Care Ultrasonography Elective	Emory University School of Medicine
2018–2019	<b>Workshop Leader</b> ➤ M3 Ultrasound Curriculum	Emory University School of Medicine
2017–2019	<b>Faculty Preceptor</b> ➤ Physician Assistant Didact Experiential Learning Program	Emory University School of Medicine
2016	<b>Session Leader</b> ➤ Internship Bootcamp	Texas A&M University College of Medicine
2011–2012	<b>Tutor</b> ➤ Biology, Chemistry, and Physics	North Lake College
2010–2011	<b>Teaching Assistant</b> ➤ Cellular Biology	Emory University College of Arts and Sciences

## Lectures

2023	<b>Research Seminar</b> ➤ Vagolysis and Arrhythmogenesis	University of Illinois Chicago School of Medicine
2023	<b>Mortality and Morbidity Conference</b> ➤ Left Atrial Appendage Closure	University of Illinois Chicago School of Medicine
2022	<b>Electrophysiology Conference</b> ➤ Introduction to Typical AVNRT	University of Illinois Chicago School of Medicine
2021	<b>Mortality and Morbidity Conference</b> ➤ Mitral Valve Replacement in Rheumatic Heart Disease	University of Illinois Chicago School of Medicine
2021	<b>Journal Club</b> ➤ Cardiac Myosin Activation with Omecamtiv Mecarbil in Systolic Heart Failure (GALACTIC-HF)	University of Illinois Chicago School of Medicine
2020	<b>Journal Club</b> ➤ Early Rhythm-Control Therapy in Patients with Atrial Fibrillation (EAST-AFNET)	University of Illinois Chicago School of Medicine
2020	<b>Clinical Case Conference</b> ➤ Restrictive Cardiomyopathy	University of Illinois Chicago School of Medicine
2019	<b>Senior Grand Rounds</b> ➤ The History of Sudden Cardiac Death: the Role of the Autonomic Nervous System	Emory University School of Medicine
2018	<b>Bite-Sized Teaching Mode Conference</b> ➤ Lotions and Ointments and Creams, Oh My! ➤ Ironing Out Transfusions in Sickle Cell	Emory University School of Medicine
2018	<b>Distinction in Teaching and Leadership Conference</b> ➤ The Problem Learner: A history and physical for learners with difficulties	Emory University School of Medicine
2018	<b>Journal Club</b> ➤ Intervention of Ischemic Stroke: Thrombectomy in 6 to 16 Hours with Selection by Perfusion Imaging	Emory University School of Medicine
2018	<b>Ultrasound Workshop</b> ➤ Cardiac, IVC, Lung, and Abdominal Views	Southern Hospital Medicine Conference
2018	<b>8 Minutes-To-Win-It</b> ➤ Top Inpatient Teaching Sessions by Soon-To-Be-Leaders	Southern Hospital Medicine Conference
2017	<b>Point-of-Care Ultrasound</b> ➤ Parasternal Long Axis	Emory University School of Medicine

## Mentorship

### Students

2016–2019	Emory University School of Medicine ➤ Julie Sommer, PA-S ➤ John Ward, M3 ➤ Deema Elchoufi, M3 ➤ Hugo Cavalia, M4 ➤ Brian Mott, M3 ➤ Anna Coronata, M3 ➤ Eli Mlaver, M3 ➤ Grace Helen Frankel, PA-S
2020–2024	University of Illinois Chicago School of Medicine ➤ Alex Wind, M3 ➤ Esther Kim, M4 ➤ Kevin Kappenman, M4

2022–2024

University of Illinois Chicago School of Medicine

- Shashank Sadhu, M2 (James Scholar)

2023–2024

University of Illinois Chicago School of Medicine

- Darren Seaney, M1 (Craig Scholar)
- Angela Hussain, M1 (Urban Health Scholar, James Scholar)

## Residents

2016–2019

Emory University School of Medicine

- Rebecca Engels, MD
- Mangala Patil, MD
- Rebecca Neustein, MD
- Kate Measom, MD
- Kevin Luk, MD
- Eric Yao, MD
- Ross Bittman, MD
- Samuel Huxley, MD
- Arjun Athreya, MD
- Lakshmi Katta, MD
- Ryan Brown, MD

2020–2024

University of Illinois Chicago School of Medicine

- Jeffrey Rehbun, MD
- Lena Carleton, MD
- Amir Khan, DO

## Research

2019–2020

Department of Epidemiology, Rollins School of Public Health

- Shishir Gupta, M4
- Manasvi Sundar, BS
- Nimrit Kaur

## Skills

### Point-Of-Care Ultrasonography

- Assessing cardiac structure and function
- Identifying pleural and pulmonary disease
- Volume assessment
- Identifying hydronephrosis and bladder volume
- Skin and soft tissue evaluation
- Liver and gallbladder disease

### Procedures

- Arterial line placement (radial, brachial, dorsalis pedis, axillary)
- Arthrocentesis (knee, ankle, shoulder)
- Central line placement (internal jugular, femoral, subclavian)
- Lumbar puncture
- Thoracentesis
- Paracentesis

**Languages**

- English
- Gujarati
- Spanish

**Technical**

- R, RStudio - scripting language and environment for statistical computing and graphics
- PERL - high-level programming language for text processing and manipulation
- C++ - low-level programming language for data processing
- Vim - command line editing
- Markdown - syntax for formatting of writing
- Git, Github - version control system
- MATLAB - matrix-oriented mathematical programming language

**Certifications****Professional**

2019–Present	<b>American Board of Internal Medicine</b>
2007–2010	<b>Emergency Medical Technician Basic</b>
2012–2016	<b>Advanced Trauma Life Support</b>
2012–Present	<b>Advance Cardiovascular Life Support</b>

**Personal**

2015–Present	<b>PADI Open Water Diver</b>
2016–Present	<b>Wilderness First Responder</b>
2017–Present	<b>ASA 101 Basic Keelboat</b>

**Research****Grant Funding**

2022–2024	<b>NIH-T32</b> Chicago, IL	University of Illinois Chicago School of Medicine
	➤ Training in Personalized Cardiovascular Medicine [TPIPCVM]	
2020–2023	<b>NIH-F32</b>	National Heart, Lung, Blood Institute
	➤ The Association of Autonomic Dysfunction with the Relationship between Depression and Coronary Disease	
	➤ F32HL154707	
2019–2020	<b>NIH-TL1</b> Atlanta, GA	Georgia Clinical and Translational Science Alliance
	➤ Disturbances of the Neurocardiac Axis: Using Heart Rate Variability to Measure Disease in the Brain and Heart	
	➤ TL1TR002382	
	➤ UL1TR002378	

**Conferences**

1. Shah, A. S., & Sanchez, M. (2009). Cortisol Levels in Rhesus Monkeys with Maternal Separation Over Longitudinal Cohorts. *Scholarly Inquiry and Research at Emory Research Partners Symposium*.
2. Shah, A. S., & Li, Y. (2011). Influence of the Acoustic Parameter of Pitch on Emotion and Focus Location in Statements using Ditransitive Verb Manipulations. *Great Lakes Expo for Experimental and Formal Undergraduate Linguistics*.
3. Shah, A. S., & Blackman, S. M. (2013). Genetic Linkage Analysis for Cystic Fibrosis Related Diabetes. *National Institute of Diabetes and Digestive and Kidney Diseases Medical Student Research Symposium*.

4. Shah, A. S., Mrdutt, M., Sanders, E., Mallett, L., Perger, L., Mrdutt, M., Sanders, E., & Perger, L. (2016). Long-Term Outcomes of Newborns with Necrotizing Enterocolitis: A retrospective matched cohort study. *Texas A & M University College of Medicine Research Symposium*.
5. Shah, A. S., Clements, S. D., & Dudgeon, M. (2017). Three's company: Nocardiosis, neuroendocrine hyperplasia, and breast cancer. *Southern Hospital Medicine Conference*.
6. Shah, A. S., & Shah, A. J. (2018). Association of Ischemia with Heart Rate Variability. *2018 Georgia Chapter Scientific Meeting*.
7. Shah, A. S., Alonso, A., & Shah, A. J. (2020). Autonomic Dysfunction as a Marker of Depression and Coronary Artery Disease. *Southeast Regional Clinical & Translational Science Conference*.
8. Hill, M. C., Chalazan, B., Tofovic, D., Chen, Y., Shah, A., Barney, M., Diaz, A., Konda, S., & Darbar, D. (2023, March). Prevalence Of Disease-Associated Cardiomyopathy Gene Variants In Ethnic Minorities With Atrial Fibrillation. *Journal of the American College of Cardiology*.

### Software

1. Shah, A. S. (2020). *Card: Cardiovascular and Autonomic Research Design*. R package v0.1.0. <https://cran.r-project.org/package=card>

### Publications

1. Shah, A. S. A. J., Lampert, R., Goldberg, J., Bremner, J. D., Vaccarino, V., & Shah, A. S. A. J. (2018). Abstract 15216: Circadian Autonomic Inflexibility: A Marker of Ischemic Heart Disease. *Circulation*, 138. [https://doi.org/10.1161/circ.138.suppl\\_1.15216](https://doi.org/10.1161/circ.138.suppl_1.15216)
2. Shah, A. S., Alonso, A., Whitsel, E. A., Soliman, E. Z., Vaccarino, V., & Shah, A. J. (2020). Abstract P542: Association of Psychosocial Factors With Heart Rate Variability: The Atherosclerosis Risk in Communities Study. *Circulation*, 141. [https://doi.org/10.1161/circ.141.suppl\\_1.p542](https://doi.org/10.1161/circ.141.suppl_1.p542)
3. Shah, A. S., Shah, A. J., Lampert, R., Goldberg, J., Bremner, J. D., Li, L., Thames, M. D., Vaccarino, V., & Shah, A. S. A. J. (2020). Alterations in heart rate variability are associated with abnormal myocardial perfusion. *International Journal of Cardiology*, 305. <https://doi.org/10.1016/j.ijcard.2020.01.069>
4. Shah, A. S. (2020). 4581 Autonomic Dysfunction as a Marker of Depression and Coronary Artery Disease. *Journal of Clinical and Translational Science*, 4(s1). <https://doi.org/10.1017/cts.2020.291>
5. Shah, A. S., Alonso, A., Whitsel, E. A., Soliman, E. Z., Vaccarino, V., & Shah, A. J. (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). <https://doi.org/10.1161/JAHA.120.017172>
6. Vaccarino, V., Almuwaqqat, Z., Kim, J. H., Hammadah, M., Shah, A. J. A., Ko, Y. A., Elon, L., Sullivan, S., Shah, A. J. A., Alkhoder, A., Lima, B. B., Pearce, B., Ward, L., Kutner, M., Hu, Y., Lewis, T. T., Garcia, E. V., Nye, J., Sheps, D. S., ... Quyyumi, A. A. (2021). Association of Mental Stress-Induced Myocardial Ischemia with Cardiovascular Events in Patients with Coronary Heart Disease. *JAMA - Journal of the American Medical Association*, 326(18). <https://doi.org/10.1001/jama.2021.17649>
7. Shah, A. S., Vaccarino, V., Ko, Y.-A., Almuwaqqat, Z., Garcia, M., Moazzami, K., Wang, M., Levantsevych, O., young, an, Ward, L., Nye, J., Raggi, P., Sheps, D. S., Lampert, R. J., Bremner, D., Sun, Y., Garcia, E. V., Quyyumi, A. A., & Shah, A. J. (2023). Mental Stress-Induced Autonomic Dysfunction Is Associated With Cardiovascular Mortality. *Journal of the American College of Cardiology*, 81(8). [https://doi.org/10.1016/s0735-1097\(23\)01590-5](https://doi.org/10.1016/s0735-1097(23)01590-5)
8. Wang, M., Liu, C., Shah, A. S., Ko, Y.-A., Sun, Y., Lampert, R. J., Garcia, M., Moazzami, K., Almuwaqqat, Z., Ward, L., Sullivan, S., Raggi, P., Bremner, D., Quyyumi, A. A., Vaccarino, V., Morris, A. A., & Shah, A. J. (2023). Heart Rate Variability During Mental Stress Predicts Heart Failure Outcomes In Patients With Stable Coronary Artery Disease. *Journal of the American College of Cardiology*, 81(8). [https://doi.org/10.1016/s0735-1097\(23\)00913-0](https://doi.org/10.1016/s0735-1097(23)00913-0)