



18TH ANNUAL
**NORTHWESTERN
CARDIOVASCULAR**
Young Investigators' Forum

A Continuing Medical Education Program
for Junior Faculty and Fellows





Message from the Co-chairs



2023 NCYIF Young Investigators

The 18th Annual Northwestern Cardiovascular Young Investigators' Forum (NCYIF) was a tremendous success as we welcomed 34 Young Investigators from around the United States. The Young Investigators' Forum took place September 28–30, 2023, in downtown Chicago at the Omni Chicago Hotel.

At this year's forum, there were 9 Expert Faculty Judge Mentors, including specialists in cardiology, endocrinology, and nephrology; and 34 early career investigators, who successfully presented exciting late-breaking science. We were incredibly impressed with the high-quality, high-impact research that was presented. The breadth and diversity of science covered a range of topics, including cardiovascular genomics, population health, and health disparities. Six research grant awards were provided in the Junior Faculty and Fellows categories. The first place clinical research award for the Fellows category went to Jelani Grant, MD; and the first place award for the Junior Faculty category went to Kevin Southerland, MD. Also in the Junior Faculty category, Dan "Amanda" Tong, MD, PhD, was chosen for the Jeremiah Stamler Distinguished Young Investigator Research Award. These grants are awarded with the purpose of furthering research in cardiology.

In addition to the Young Investigator presentations, meeting highlights included the alumni dinner with former NCYIF awardees, Drs. Rohan Khera and Virginia Hahn, who shared the positive impact that NCYIF has had on their career development and the successes they have since experienced (as well as how they have overcome challenges). Networking with the expert faculty judges was a key focus for the attendees with structured and unstructured time. To augment the professional development aspects of NCYIF, a team of professional coaching experts from Listen Write Present returned to provide one-on-one presentation coaching sessions.

The participants identified several highlights of the 2023 forum. The feedback provided by the Expert Faculty Judges on the presentations and future directions, in addition to the mentorship during the Meet-the-Professor luncheons, was reported among the highest yield aspects of the meeting. Attendees also valued being able to meet and network with peers and near-peers. The program's success truly lies in the excellence, passion, and collegiality of the attendees.

On behalf of the NCYIF Faculty Judges, we would like to congratulate all of the participants on their accomplishments and wish them the very best for continued success in their future research and career endeavors.

Sincerely,

Donald M. Lloyd-Jones, MD ScM, FACC, FAHA (co-chair)

Sadiya S. Khan, MD, MSc, FACC, FAHA (co-chair)



CELEBRATING THE LEGACY OF Jeremiah Stamler, MD



Photo from the National Lipid Association

Dr. Jeremiah Stamler has left an ineffable legacy within cardiovascular research, pioneering many of the foundational axioms current cardiovascular research is built upon. He served as the founding chair of the Department of Preventive Medicine and Emeritus of Preventive Medicine at Northwestern Feinberg School of Medicine. Dr. Stamler is universally hailed as the “father of preventive cardiology.” His research was pivotal in establishing hypertension, smoking, diabetes, hypercholesterolemia, and high-fat diets as cardiovascular risk factors. The INTERSALT Study established the connection between increased sodium intake and hypertension. His pursuit of research was truly lifelong as he published over 670 peer-reviewed papers and 22 books and monographs, was cited more than 56,000 times, and led an NIH-funded study investigating the connection between hypertension and the human metabolome.

The NCYIF first presented the Jeremiah Stamler Distinguished Young Investigator Research Award in 2005 to honor Dr. Stamler’s tremendous influence on cardiovascular research and preventive medicine. The award is presented to junior faculty of basic science and of clinical research who demonstrate commitment to the pursuit of establishing innovative and foundational knowledge within cardiovascular health and preventive medicine.

The NCYIF will continue to honor the legacy Dr. Jeremiah Stamler has given the world of cardiovascular medicine and to memorialize his efforts by providing a platform that supports promising young investigators through mentorship, facilitation of collegial connections, and coaching to refine presentation and research defense skills, which all help promising early career scientists within cardiovascular research to exponentially increase the productivity of their research and publications.

“ [Dr. Stamler] was part of a generation of scientists who put the traditional risk factors for heart disease on the map. He did the studies to show that smoking, diabetes, obesity and cholesterol drive most heart attacks... Jerry was a giant intellect and led in defining new prevention concepts right up until his last days. He was always innovating, and he was a kind and gentle soul who believed in people.”

—Donald Lloyd-Jones, MD, ScM, FACC, FAHA

“ Dr. Stamler’s exceptional science was paralleled by his remarkable humanity. He was a champion of our best American ideals, he was fearless when facing the status quo, and he was tireless in the pursuit of what was right and just. He remains a beacon for all that is noble in medicine.”

—Clyde Yancy, MD, MSc, MACC, FAHA, MACP, FHFSa, FASPC (Hon.), FRCP



HONORING THE LEGACY OF DR. JEREMIAH STAMLER

The 2023 Jeremiah Stamler Distinguished Young Investigator Award—\$10,000 Grant

Each year, the top researcher and presenter in the Junior Faculty Basic Science and Junior Faculty Clinical Research categories is presented with this prestigious award of achievement representing excellence, commitment, and promise in the field of cardiovascular research.

2023 Jeremiah Stamler Distinguished Young Investigator Award



Dan “Amanda” Tong, MD, PhD

Assistant Professor

University of Texas Southwestern Medical Center

Dallas, Texas

TET2 Mutation-dependent Clonal Hematopoiesis Promotes Heart Failure with Preserved Ejection Fraction

Dan “Amanda” Tong, MD, PhD, is an assistant professor in the Department of Internal Medicine at UT Southwestern Medical Center and a member of its Division of Cardiology. She received her medical degree from the Tongji Medical College in China and her doctorate from the University of Western Ontario in Canada. She completed internal medicine residency training at the University of Iowa, followed by advanced training through a cardiology fellowship at UT Southwestern Medical Center. Certified by the American Board of Internal Medicine in Cardiovascular Medicine, she joined the UT Southwestern faculty in 2021.

As a physician-scientist, Dr. Tong’s research and clinical interests are focused on cardiovascular conditions that are tightly associated with metabolic diseases, particularly heart failure with preserved ejection fraction and atrial fibrillation. Her investigations have resulted in 26 publications in peer-reviewed journals and contributions to one book chapter, and she has presented her findings at scientific conferences throughout the United States and around the world. Dr. Tong is active in several professional societies, including the American Heart Association and the American College of Cardiology.

Dr. Tong’s interests outside of medicine include her family, cooking, and reading.

“This is my third time attending NCYIF, and the first time [in the junior faculty category]. I have always enjoyed the event so much and learned a ton! The interaction with these phenomenal mentors and peers is not only intellectually stimulating, but it also leads to meaningful friendships and collaborations. I also learned a lot from the focused presentations, as they are specifically tailored to our needs and address some of the most relevant issues. Of course, the grant will also foster the progress of projects ongoing in my lab!! I highly recommend NCYIF to all cardiology fellows and early-career faculty members.”

“I will use [the grant] for purchasing experimental reagents and materials.”



2023 Junior Faculty Winners—Clinical

1ST PLACE



Kevin Southerland, MD

*Assistant Professor, Department of Surgery,
Division of Vascular & Endovascular Surgery
Duke University
Durham, North Carolina*

SFRP1 Mediates Adipogenic Differentiation of VCAM1+ Fibroadipogenic Progenitors in the Ischemic Limb

“NCYIF was an invaluable professional experience. First, I was able to receive insightful feedback from the faculty judges. This will have a profound impact on the development of my translational research program. Second, I was able to connect with several of the participants that shared similar research interest. I am hopeful this will lead to future collaborative efforts.”

“I intend to use this grant award to fund a proteomics screen of tissue and plasma samples from PAD patients. Our lab aims to identify novel muscle and plasma signatures that define patients with chronic limb threatening ischemia (end-stage PAD). The ultimate goal is to develop cellular therapeutics for limb salvage.”

2ND PLACE



Shreya Rao, MD, MPH

*Assistant Professor
University of Texas Health Sciences Center—San Antonio
San Antonio, Texas*

Historical Redlining, Socioeconomic Distress, and Risk of Heart Failure among Medicare Beneficiaries

“The program has been uniquely valuable in educating me about ways to navigate a clinical scientist pathway as an early career investigator. This was my third time participating and I have gained something valuable with each year I participated. I had particularly valuable conversations with faculty members at this year’s session with whom I would not have had opportunities to talk to in other forums.”

“I plan to use my funds toward research expenditures, including biostatistical support and needed equipment for future prospective studies.”



2023 Fellows Winners—Clinical

1ST PLACE



Jelani Grant, MD

*Cardiology Fellow
Johns Hopkins Hospital
Baltimore, Maryland*

From Quality Improvement to Deep Learning Implementation: Coronary Calcium Reporting on Non-contrast Chest CT Scans

“My goal is to have an academic career focused of cardiovascular epidemiology, specifically ASCVD risk prediction and health equity with a focus on implementation science. This award has provided me the inspiration and networking opportunities to take my science to the next level. I am already receiving such generous offers by academic centers to support my research interests once I graduate from my fellowship! I could not be more fortunate.”

“I will be starting a MHS in Epidemiology during my 3rd and 4th years of fellowship (2024-2026) and have decided that the first part will go towards me getting a computer and software to perform my large data analyses as part of my research and MHS training.”

2ND PLACE



Sarah Urbut, MD, PhD

*Cardiology Fellow
Massachusetts General Hospital
Boston, Massachusetts*

MSGene: Dynamic Modeling of the Lifetime Risk of Coronary Artery Disease

“I met some wonderful people and was inspired by their commitment to patients and research—terrific meeting.”

“[The grant will be used for] continued research on multistate modeling, statistical teaching for the fellowship.”



2023 Fellows Winners—Clinical

3RD PLACE



Michael Levin, MD

*Cardiology Fellow
University of Pennsylvania
Philadelphia, Pennsylvania*

Common- and Rare-variant Genetic Architecture of Heart Failure across the Allele Frequency Spectrum

“Participating in NCYIF was an incredible opportunity. Beyond the science that was presented, which spanned clinical, translational, and basic research, the forum facilitated great discussions that will lead to meaningful new collaborations. It was great to meet current and future leaders of cardiovascular medicine and develop new professional connections with peers and mentors. I also enjoyed the sessions on presentation skills and career development, which have already made a tangible impact on my career as a physician scientist.”

“This award will be used to support research studying the combined impacts of common and rare genetic variation on risk of cardiovascular diseases.”



Back row (left to right): Michael Levin, MD; Kevin Southerland, MD; Jelani Grant, MD; and Donald Lloyd-Jones, MD, ScM, FACC, FAHA (co-chair).

Front row (left to right): Shreya Rao, MD, MPH; Dan “Amanda” Tong, MD, PhD; Sadiya S. Khan, MD, MSc, FACC, FAHA (co-chair); and Sarah Urbut, MD, PhD.



2023 NCYIF Participants and Institutions



Sonu Abraham, MD

*Cardiovascular Fellow
Lahey Hospital and Medical Center
Chicago, Illinois*



Daniel Gold, MD

*Cardiology Fellow, Clinical Investigator
Track (T32)
Emory University
Atlanta, Georgia*



Ahmed Altibi, MD, MPH

*Fellow Physician, Cardiovascular Medicine
Oregon Health & Science University
Portland, Oregon*



Jelani Grant, MD

*Cardiology Fellow
Johns Hopkins Hospital
Baltimore, Maryland*



Romit Bhattacharya, MD

*Instructor in Medicine, Post-doctoral Fellow
Massachusetts General Hospital
Boston, Massachusetts*



Rajat Gupta, MD

*Assistant Professor
Brigham and Women's Hospital
Boston, Massachusetts*



Kristin Boulier, MD

*Cardiology Fellow
University of California—Los Angeles
Los Angeles, California*



J. Brett Heimlich, MD, PhD

*Fellow
Vanderbilt University Medical Center
Nashville, Tennessee*



Tiffany Brazile, MD

*Cardiology Fellow
University of Texas Southwestern
Medical Center Institute for Exercise and
Environmental Medicine
Dallas, Texas*



Elizabeth Hutchins, MD, MS

*Cardiology Fellow
University of California—Los Angeles
Los Angeles, California*



**Jonathan Cunningham,
MD, MPH**

*Instructor in Medicine
Brigham and Women's Hospital, Harvard
Medical School, Broad Institute
Boston, Massachusetts*



Vardhmaan Jain, MD

*Fellow in Cardiovascular Medicine
Emory University School of Medicine
Atlanta, Georgia*



Ijeoma Eleazu, MD

*Cardiology Fellow
University of Texas Southwestern
Medical Center
Dallas, Texas*



Veraprapas Kittipibul, MD

*Cardiology Fellow
Duke University Medical Center
Durham, North Carolina*



2023 NCYIF Participants and Institutions



Ahmed Kolkailah, MD, MSc

*Cardiovascular Medicine,
T32 Research Fellow
University of Texas Southwestern
Medical Center
Dallas, Texas*



Farhan Raza, MD

*Assistant Professor of Medicine
University of Wisconsin–Madison
Madison, Wisconsin*



Michael Levin, MD

*Cardiology Fellow
University of Pennsylvania
Philadelphia, Pennsylvania*



Anna Rosenblatt, MD

*Cardiac Electrophysiology Fellow
University of Texas Southwestern
Dallas, Texas*



**Cian McCarthy, MB,
BCh, BAO, SM**

*Cardiovascular Disease Fellow
Massachusetts General Hospital
Boston, Massachusetts*



Yasser Sammour, MD, MSc

*Cardiology Fellow
Houston Methodist DeBakey Heart and
Vascular Center
Houston, Texas*



Amitabh C. Pandey, MD

*Assistant Professor
Tulane University
New Orleans, Louisiana*



Balimkiz Senman, MD

*General Cardiology Fellow
Duke University Medical Center
Durham, North Carolina*



Kaavya Paruchuri, MD

*Instructor in Medicine
Massachusetts General Hospital
Boston, Massachusetts*



Samuel Slavin, MD

*Clinical and Research Fellow,
Cardiovascular Medicine
Brigham and Women's Hospital,
Harvard T.H. Chan School of Public Health
Boston, Massachusetts*



Aniruddh Patel, MD

*Instructor in Medicine
Massachusetts General Hospital
Boston, Massachusetts*



Kevin Southerland, MD

*Assistant Professor, Department of Surgery,
Division of Vascular &
Endovascular Surgery
Duke University
Durham, North Carolina*



Shreya Rao, MD, MPH

*Assistant Professor
University of Texas Health Sciences
Center–San Antonio
San Antonio, Texas*



Wei Sun, MD

*Assistant Professor of Medicine
University of Pittsburgh
Pittsburgh, Pennsylvania*



2023 NCYIF Participants and Institutions



Dan "Amanda" Tong, MD, PhD

*Assistant Professor
University of Texas Southwestern
Medical Center
Dallas, Texas*



Sarah Urbut, MD, PhD

*Cardiology Fellow
Massachusetts General Hospital
Boston, Massachusetts*



Michael Wilkinson, MD

*Assistant Professor
University of California–San Diego
San Diego, California*



Edwin Yoo, MD, PhD

*Cardiology Fellow
Johns Hopkins Hospital
Baltimore, Maryland*

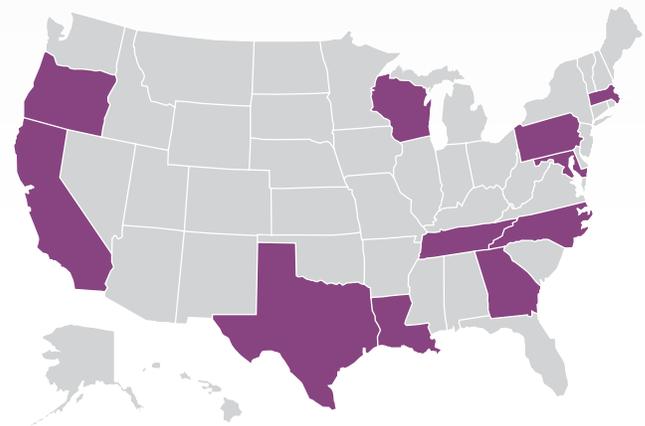


Daniel Zlotoff, MD, PhD

*Instructor of Medicine
Massachusetts General Hospital
Boston, Massachusetts*

19 INSTITUTIONS REPRESENTED

- Brigham and Women's Hospital
- Duke University Medical Center
- Emory University
- Harvard Medical School
- Harvard T.H. Chan School of Public Health
- Houston Methodist DeBakey Heart and Vascular Center
- Johns Hopkins Hospital
- Lahey Hospital and Medical Center
- Massachusetts General Hospital
- Oregon Health & Science University
- Tulane University
- University of California–Los Angeles
- University of California–San Diego
- University of Pennsylvania
- University of Pittsburgh
- University of Texas Health Science Center–San Antonio
- University of Texas Southwestern Medical Center
- University of Wisconsin–Madison
- Vanderbilt University Medical Center





2023 Expert Faculty Judges



Back row (left to right): Joshua J. Joseph, MD, MPH, FAHA, MSc; Pradeep Natarajan, MD, MMSc; Donald M. Lloyd-Jones, MD, ScM, FACC, FAHA; Larry A. Allen, MD, MHS; and Chiadi Ndumele, MD, PhD, MHS. **Front row** (left to right): Holly Kramer, MD, MPH; Sadiya S. Khan, MD, MSc, FACC, FAHA; Tracy Y. Wang, MD, MHS, MSc; and Svati H. Shah, MD, MS, MHS.

Donald M. Lloyd-Jones, MD, SCM, FACC, FAHA (co-chair)

*Eileen M. Foell Professor of Heart Research
Chair, Department of Preventive Medicine
Professor of Preventive Medicine, Medicine, and Pediatrics
Northwestern University Feinberg School of Medicine
Chicago, Illinois*

Sadiya S. Khan, MD, MSc, FACC, FAHA (co-chair)

*Assistant Professor of Medicine and Preventive Medicine
NUFSM Division of Cardiology Departments of Medicine
and Preventive Medicine
Northwestern University Feinberg School of Medicine
Chicago, Illinois*

Larry A. Allen, MD, MHS

*Professor of Medicine, Kenneth Poirier Endowed Chair
Interim Head for Cardiology
Medical Director, Advanced Heart Failure
University of Colorado, School of Medicine
Aurora, Colorado*

Joshua J. Joseph, MD, MPH, FAHA

*Associate Professor of Internal Medicine
Endowed Professor for Research in Internal Medicine
Division of Endocrinology, Diabetes, and Metabolism
The Ohio State University Wexner Medical Center
Columbus, Ohio*

Holly Kramer, MD, MPH

*Professor of Public Health Sciences and Medicine
Division of Nephrology and Hypertension Loyola University Chicago
Chicago, Illinois*

Pradeep Natarajan, MD, MMSc

*Director of Preventive Cardiology
Paul and Phyllis Fireman Endowed Chair in Vascular Medicine
Mass General Hospital
Associate Professor of Medicine
Harvard Medical School
Associate Member
Broad Institute of Harvard and
Massachusetts Institute of Technology
Cambridge, Massachusetts*

Chiadi Ndumele, MD, PhD, MHS

*Associate Professor
Johns Hopkins University
Baltimore, Maryland*

Svati H. Shah, MD, MS, MHS

*Professor of Medicine
Associate Dean for Genomics
Director, Precision Genomics Collaboratory
Director, Adult Cardiovascular Genetics Clinic
Division of Cardiology, Department of Medicine
Duke Molecular Physiology Institute
Duke University School of Medicine
Durham, North Carolina*

Tracy Y. Wang, MD, MHS, MSc

*Chief of Comparative Clinical Effectiveness Research
Patient-Centered Outcomes Research Institute (PCORI)
Washington, DC
Former Professor of Medicine, Duke University
Durham, North Carolina*



Keynote Speakers



Robert O. Bonow, MD, MS

*Goldberg Distinguished Professor of Cardiology
Northwestern University Feinberg School of Medicine
Chicago, Illinois*

Plenary: Publishing



Sanjiv J. Shah, MD, FAHA, FACC, FASE

*Stone Endowed Professor of Medicine
Director of Research,
Bluhm Cardiovascular Institute
Director, Center for Deep Phenotyping and Precision Therapeutics Institute for
Augmented Intelligence in Medicine
Northwestern University Feinberg School of Medicine
Chicago, Illinois*

Plenary: Clinical Trial Design



**Clyde W. Yancy, MD, MSc, MACC, FAHA, MACP, FHFSA,
FASPC (Hon.), FRCP**

*Vice Dean, Diversity & Inclusion
Magerstadt Professor of Medicine
Professor of Medical Social Sciences
Chief, Division of Cardiology
Northwestern University, Feinberg School of Medicine
Associate Director, Bluhm Cardiovascular Institute Northwestern Memorial Hospital
Chicago, Illinois*

Plenary: Diversity and Inclusion (Clinical Trials)



Alumni



Virginia Hahn, MD

*Assistant Professor of Medicine
Division of Cardiology, Advanced Heart Failure/Transplant Cardiology Section
Johns Hopkins University School of Medicine
Baltimore, Maryland*



Rohan Khera, MD, MS

*Assistant Professor of Medicine (Cardiovascular Medicine) and Biostatistics (Health Informatics)
Yale School of Medicine and Yale School of Public Health
Director, Cardiovascular Data Science (CarDS) Lab
Clinical Director, Center for Health Informatics and Analytics, YNHH/Yale CORE
New Haven, Connecticut*

2023 Professional Presentation Coaches



Stephanie Roberson Barnard

*Listen Write Present, LLC
Greensboro, North Carolina*



Paul Casella

*Health Care Communications Group
University of Iowa Carver College of Medicine
Iowa City, Iowa*



2023 NCYIF Highlights

The 18th annual NCYIF saw a restructuring and revitalization of our expert panel of faculty mentors and judges, and welcomed previous faculty Drs. Donald Lloyd-Jones and Sadiya S. Kahn as our new co-chairs. The previous chair, Dr. Robert Bonow, presented a talk on Publishing and Peer Review, and was graciously recognized as our previous esteemed activity chair. New faculty in diverse areas of cardiometabolic medicine were selected. Drs. Pradeep Natarajan and Clyde Yancy were also welcomed back as expert faculty judge/mentor and keynote speaker, respectively.

Joshua J. Joseph, MD, MPH, FAHA @joshuajosephmd · Sep 30

The early career cardiology investigators @NCYIFForum are doing amazing translational, clinical & population cardiometabolic science! #NCYIF23

The future is bright 🌟

Learn more & apply next year:
info.ceconcepts.com/northwestern-c...

@OSUWexMed @NorthwesternMed @HeartNews

Ashley Stein-Merlob, MD @A_SteinMerlob · Sep 30

It was such an honor to present my research at #NCYIF23 surrounded by so many talented colleagues and esteemed judges.

NCYIF @NCYIFForum · Sep 30

@A_SteinMerlob of @UCLA presents Mathematical Modeling Predicts Treatment Efficacy in Transthyretin Cardiac Amyloidosis.

#MedTwitter #MedX #MedEd #NCYIF23

NCYIF HIGHLIGHTS

- Listening to my peer’s research
- Inspirational meeting other colleagues around the country
- Networking with colleagues
- Connections
- Meeting other young investigators and sharing ideas and enthusiasm
- From the judges’ questions and networking afterward, I got several ideas for grants related to my research
- The conversations with faculty
- Networking
- Hearing the science
- Diversity of science
- Networking among like minded and similar career stage
- Talented peers, excellent faculty talks on important issues



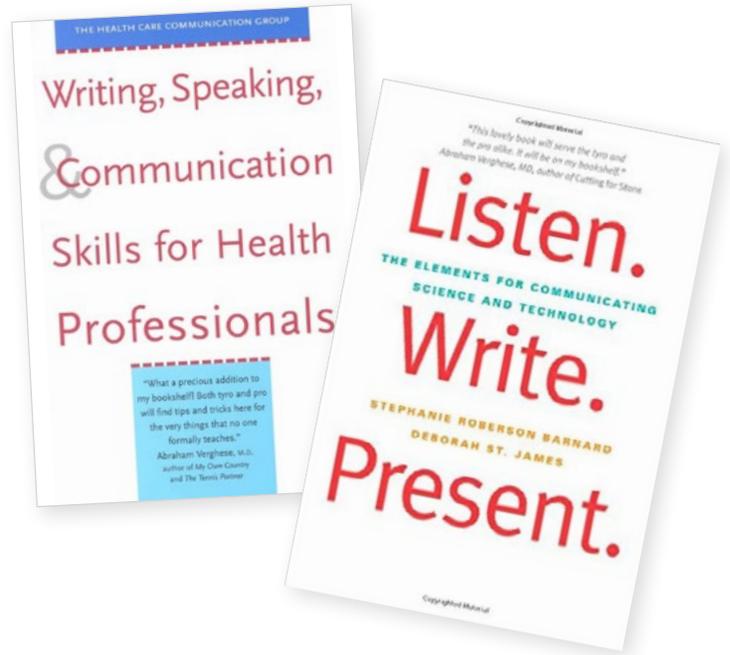
“The opportunity to present my work outside of my institution and obtain feedback. Opportunity to discuss my work with the faculty.”



2023 NCYIF Highlights

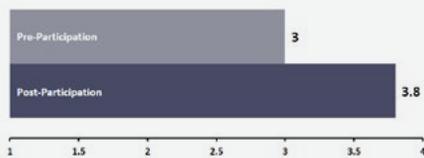
Presentation Skills Enhancement Workshop

To augment the professional development aspects of the NCYIF, 2023 participants had the opportunity to receive individual coaching sessions by a team of experts from Listen Write Present. Young investigators who participated in the one-on-one pre-program coaching sessions received expert advice and critique of their presentation and public speaking skills, and were given a copy of the book *Listen. Write. Present.*, which was written by the Listen Write Present team. In addition, the expert coaches provided participants with tips for effective navigation of expert Q&A and research defense.



Level 4: Competence

Attendee Confidence in Ability to Present Scientific Information to a Group of your Peers
Pre- vs Post-activity
Change in Attendee Confidence
Score of 1 through 4 (4 being the most confident)



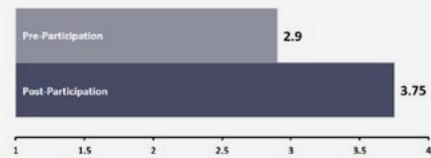
Following coaching and abstract presentations, average participant confidence in their ability to present scientific information to peers increased from

3.0 to 3.8*

* on a 4 point scale

Level 4: Competence

Attendee* Confidence in Ability to Answer Questions and Defend Research
Pre- vs Post-activity
Change in Attendee Confidence
Score of 1 through 4 (4 being the most confident)



Similarly, average participant confidence in ability to defend their research following the event increased from

2.9 to 3.75*

* on a 4 point scale



2023 NCYIF Highlights

Meet the Professor Lunches

For this year's NCYIF, small groups of participants, along with a faculty mentor, had the opportunity to introduce themselves in a small group setting at the "Meet the Professor" lunch sessions.



A common thread among participants' highlights of this year's NCYIF meeting was the opportunity to network and meet colleagues and esteemed faculty mentors/judges.



GROUP TABLE TOPICS

Each lunch group also had a specific "table topic" for discussion, which was as follows:

Friday

Larry A. Allen and Tracy Wang
Patient-centered Interventions and Outcomes

Holly Kramer and Joshua J. Joseph
New Models of Cardio-kidney-metabolic Care

Pradeep Natarajan, Sadiya Khan, and Svati Shah
Genetics in Clinical and Research Implementation

Donald Lloyd-Jones and Chiadi Ndumele
Relationship of Obesity to Cardiovascular Disease

Saturday

Pradeep Natarajan and Svati Shah
Omics in CVH

Chiadi Ndumele and Tracy Wang
Biomarkers for Clinical Practice and Research

Donald Lloyd-Jones and Larry A. Allen
Leveraging Big Data

Holly Kramer, Joshua J. Joseph, and Sadiya Khan
Advancing Health Equity in Kidney Disease and Diabetes



HOW ATTENDING THE NCYIF WILL

Impact Young Investigators' Careers



“This conference helped me to reflect on my career trajectory, identify potential sources of funding, and think about new ways to use the data that I have already collected in my study.”

“

“This meeting has been incredible with respect being both thought provoking in terms of thinking of new research questions but also forming strong research and clinical networks among peers.”

”

“

“1) Improved scientific presentation skills;
2) met new potential collaborators; and
3) learned from others how to develop personal brand/story for career development.”

”

“I learned so much about funding pathways and different roads forward to a successful research career.”



HOW YOUNG INVESTIGATORS Benefit from NCYIF

“Learning different methodologies, getting feedback from the judges, being able to get the training in terms of presentation skills and so on. It’s just everything that’s going to help me be a better researcher going forward.”



“I think there were some really thought-provoking talks in domains that I had not really thought about...There was some excellent discussion at lunch also with mentors.”

YOUNG INVESTIGATOR Comments on NCYIF 2023

“Really great—such a unique opportunity to network and share research in this intimate setting. Cannot be replicated within other larger society meetings.”

“This was the best conference I have ever attended. Really phenomenal and helpful.”

“VERY well organized. Very inspiring research. Excellent and engaged judges.”



“This meeting exceeded my expectations with respect to the breadth of science presented, the quality of discussions, and feedback.”

“This was an incredible opportunity to hear cutting-edge cardiovascular science from across the country, and network with future cardiovascular leaders.”

 **Ahmad Teebi, MD MPH** @Teebi_MD · Oct 1 · 📍
 📍 Leaving #Chicago tonight as the @NCYIForum concludes! An experience like no other ⚡

For Young Investigators- strongly recommend submitting your #Science to @NCYIForum! Great science, networking, career developing, and lifelong friendships ⭐

#medtwitter #cardiotwitter #meded...
 Show more



Ahmed Kolkailah and 2 others

 **NCYIF** @NCYIForum · Sep 30
 🎉 Congratulations #NCYIF23 winners

Fellows Category:
 📍 @JelaniGrantMD
 📍 @tigerstatdoc
 📍 @MGLevin

Junior Faculty Category:
 📍 Kevin Southerland, MD
 📍 @shreyarao87

Jeremiah Stamler Distinguished Young Investigator Research Award:
 📍 @Amandatong2013





UPDATES FROM NCYIF 2021 ALUMNI

Research Publications, National Meeting Presentations, and Honors and Awards

The NCYIF is a highly competitive research and professional development forum that strives to encourage, promote, and empower Young Investigators to forge collegial connections and acquire the necessary skills and relationships to increase their research productivity and catalyze their career trajectory. The following section is a glimpse at their accomplishments and research, and is interwoven with prior participant reflections about the impact that participating in the forum has had on their professional lives since attending the last meeting in 2021.

Publications

- Alexander MR**, Dale BL, Smart CD, et al. Immune profiling reveals decreases in circulating regulatory and exhausted T cells in human hypertension. *JACC: Basic Transl Sci.* 2023;8(3):319–336.
- Goodman RS, Patrinely JR, Stone CA, [...] **Alexander MR**, et al. Accuracy and reliability of chatbot responses to physician questions. *JAMA Netw Open.* 2023;6(10):e2336483.
- Turker I, Nair S, Terry JG, [...] **Alexander MR**, Johnson DB. Immune checkpoint inhibitors' effects on calcified aortic plaques in melanoma survivors: a retrospective cohort study. *JACC CardioOncol.* 2023;5(4):536–538.
- Turker I, Sharma A, Huang S, Johnson DB, **Alexander MR**. Combination immune checkpoint inhibitor therapy is associated with increased blood pressure in melanoma patients. *Hypertension.* 2023;80(3):e43–e45.
- Alexander MR**, Hank S, Dale BL, et al. A single nucleotide polymorphism in SH2B3/LNK promotes hypertension development and renal damage. *Circ Res.* 2022;131(9):731–747.
- Papa A, Zakharov SI, Katchman AN, [...] **Ali SR**, et al. Rad regulation of Ca_v1.2 channels controls cardiac fight-or-flight response. *Nat Cardiovasc Res.* 2022;1(11):1022–1038.
- Almuwaqqat Z**, Garcia EV, Cooke CD, et al. Quantitation of diffuse myocardial ischemia with mental stress and its association with cardiovascular events in individuals with recent myocardial infarction. *J Nucl Cardiol.* 2023;30(5):2029–2038.
- Buto PT, Shah A, Pearce BD, Lima BB, **Almuwaqqat Z**, et al. Association of systemic inflammation with posttraumatic stress disorder after a myocardial infarction. *Brain Behav Immun Health.* 2023;30:100629.
- Desai SR, Dhindsa DS, Ko YA, [...] **Almuwaqqat Z**, et al. Aggregate clinical and biomarker-based model predicts adverse outcomes in patients with coronary artery disease. *Am J Cardiol.* 2023;203:315–324.
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The NCYIF was an invaluable experience for me and changed my perception of what conferences can be. The small, intimate atmosphere and the ability to meet one-on-one with leaders in cardiovascular research was something I will never forget. Through the experience, I gained a lot of valuable insight towards furthering my career, particularly what I should look for as I transitioned from fellow to faculty and how to start applying for grants. I also greatly expanded my network both with peers and mentors who I keep in touch with to this day. I highly recommend this conference to anyone interested in cardiovascular research.

—Harpreet Bhatia, MD

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Presenting at NCYIF in 2021 was a wonderful experience. It was my second time presenting at NCYIF since graduating fellowship. Following the 2021 NCYIF, we were able to present our work again at the AHA in 2022, where it received the Melvin Marcus Award for best science abstract. We ultimately published our work in 2023 in the journal *Circulation*.

The opportunity to present and discuss our work at NCYIF helped to hone our work for future presentations and ultimate publication. Meeting like-minded peers, getting feedback on our work and presentation style, and spending time with inspiring faculty have always been highlights of the NCYIF experience. Can't recommend enough!

—Steven Hsu, MD

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I had a great experience presenting my work at NCYIF in 2021 and this year we had a growing cohort of UCLA Cardiology fellows present their science as well—with my encouragement.

—Boback Ziaieian, MD, PhD





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Collaborative Publications among NCYIF 2021 Young Investigators

- Dhingra LS, Aminorroaya A, **Oikonomou EK**, [...] **Khera R**. Use of wearable devices in individuals with or at risk for cardiovascular disease in the United States, 2019 to 2020. *JAMA Netw Open.* 2023;6(6):e2316634.
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Participating in the NCYIF in 2021 was an inspiring experience. It was exciting to hear about the outstanding research conducted by cardiovascular fellows and junior faculty from across the country, and I was honored to present my research in front of leaders in the field. I have been fortunate to maintain close connections with several other participants who have provided invaluable support, mentorship, and feedback as I navigate the later stages of my clinical and post-doctoral fellowship. I look forward to submitting my work again and participating in the upcoming sessions.

—*Evangelos Oikonomou, MD, DPhil*

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- Oikonomou EK**, Van Dijk D, Parise H, [...] **Khera R**. A phenomapping-derived tool to personalize the selection of anatomical vs. functional testing in evaluating chest pain (ASSIST). *Eur Heart J.* 2021;42(26):2536–2548.
- Shah NS**, Wang MC, **Freaney PM**, et al. Trends in gestational diabetes at first live birth by race and ethnicity in the United States, 2011–2019. *JAMA.* 2021;326(7):660–669.



Presentations

American College of Cardiology/World Congress of Cardiology 2023

March 4–6, 2023; New Orleans, Louisiana

- Almuwaqqat Z**, Garcia EV, Cooke CD, et al. A novel method for identifying diffuse myocardial ischemia during mental stress predicts recurrent heart failure in individuals with recent myocardial infarction. Presentation 1063-17.
- Bhatia H**, Allen T, McClelland R, et al. The density adjusted volume score: a novel coronary artery calcium score. Presentation 913-08.
- Khera R**, Loccoh E, Nguyen A, et al. Markup on common genetic medications at hospitals in the United States: a nationally representative evaluation. Presentation 1080-03.
- Oikonomou EK**, Spatz ES, Ross JS, [...] **Khera R**. A machine learning-guided approach for adaptive trial enrichment and acceleration of cardiovascular outcome trials: insights from the SPRINT and ACCORD-BP trials. Presentation 1534-033.
- Oikonomou EK**, Suchard M, Miller EJ, [...] **Khera R**. Mechanistic evaluation of an AI-driven clinical decision support tool to personalize the use of anatomical testing in suspected coronary artery disease. Presentation 1031-07.

American College of Cardiology Scientific Sessions 2022

April 2–4, 2022; Washington, DC

- Bhatia H**, Ma G, Taleb A, et al. Trends in testing and prevalence of elevated lp(a) among patients with aortic valve stenosis. Abstract 1415-058.
- Freahey PM**. Case presentation: a pregnant woman with sudden cardiac arrest. Session 770-09.
- Kwan JM**. Transformation through COVID: effects on the early career and FIT experience. Session 5009.
- Kwan JM**, Akhlaghi N, Jiang M, et al. Adverse cardiovascular events associated with immune checkpoint inhibitors—a single center retrospective cohort study. Session 2004-132.
- Kwan JM**, Shen M, Mankbadi M, et al. Adverse cardiovascular events associated with kinase inhibitors in the treatment of cancer reveal specific risk based on the kinase inhibitor—a single-center retrospective cohort study. Session 2004-131.
- Kwan JM**, Vanoudenhove J, Halder S, et al. Myocardial impact of clonal hematopoiesis of indeterminate potential (CHIP) secretomes in cardio-oncology patients. Session 1460-119.
- Oikonomou EK**, Suchard M, **Khera R**. Personalizing the therapeutic benefit from spironolactone in heart failure with preserved ejection fraction through computational phenomaps of the TOPCAT trial and machine learning. Session 1388-140.
- Paruchuri K**, Bernardo R, Haidermota S, et al. Patient engagement on an integrated digital health platform post hospitalization for heart failure: an interim analysis. Session 1319-126.
- Rawnsley D**, Foroughi L, Ma X, et al. Intermittent fasting rescues lipid overload cardiomyopathy via novel mechanisms. Session 901-9.
- Selvaraj S**, Seidelmann S, Soni M, et al. Comprehensive nutrient consumption and metabolic profiling during ketogenic diet and relationship with myocardial glucose uptake on Fdg-pet. Session 1031-05.
- Shah, S**. Henderson N, Agusala K, et al. Cardiac arrest in a postpartum woman: dissecting through a complex case. Session 1058-09.
- Sun W**, Chan S. Post GWAS Functional genomics analysis to define pathogenic mechanisms of pulmonary arterial hypertension. Session 1274-076.



American Heart Association Basic Cardiovascular Sciences Scientific Sessions 2023

July 31–August 3, 2023; Boston, Massachusetts

Garry GA, Chen K, Zhou H, et al. Phf7 as a critical driver of adult cardiac reprogramming. Abstract P1123.

Sun W, Jiang D, Wu T, et al. Post-GWAS functional analysis of CBLN2 locus reveals the role of CUX1 in the inflammatory pathogenesis of pulmonary arterial hypertension. Abstract P1017.

American Heart Association Basic Cardiovascular Sciences Scientific Sessions 2022

July 25–28, 2022; Chicago, Illinois

Sun W, Jiang D, Li G, et al. Functional genomics analysis of Sox17 locus to define the pathogenic role of FUBP1 in pulmonary arterial hypertension. Abstract P1108.

American Heart Association EPI | Lifestyle and Cardiometabolic Health Scientific Sessions 2023

March 1–3, 2023; Boston, Massachusetts

Almuwaqqat Z, Hui Q, Zhou J, et al. Associations between long-term body mass index variability and adverse cardiovascular outcomes: million Veteran Program study. Abstract 12.

American Heart Association EPI | Lifestyle and Cardiometabolic Health Scientific Sessions 2022

March 1–4, 2022; Chicago, Illinois

Almuwaqqat Z, Liu C, Moazzami K, et al. Metabolomic profiling provides novel insights into the biochemical mechanism of mental stress-induced ischemia. Abstract MP45.

American Heart Association EPI | Lifestyle and Cardiometabolic Health Scientific Sessions 2021

May 20–21, 2021; Dallas, Texas

Almuwaqqat Z, Liu C, Kim JH, et al. A novel genetic locus influences microvascular reactivity to acute psychological stress. Abstract MP10.

Almuwaqqat Z, Young A, Gracia M, et al. Posttraumatic stress disorder, mental stress-induced myocardial ischemia and cardiovascular outcomes in patients with CAD. Abstract 014.

Freaney PM, Ning H, Carnethon MR, et al. Association between premature menopause and lifetime risk of coronary heart disease: lifetime risk pooling project. Abstract 012.

Minhas A, Hong X, Wang X, et al. Pre-pregnancy cardiometabolic risk factors, mediterranean style diet, and risk of preeclampsia in the Boston birth cohort. Abstract 051.

Minhas A, Ogunwale M, Miller M, et al. The associations between adverse pregnancy outcomes and cardiovascular delivery complications: the national inpatient sample. Abstract MP46.

Rao S, Hughes AE, Ayers C, et al. Longitudinal trajectories and predictors of country-level cardiovascular mortality in the United States (1980–2014). Abstract 076.

American Heart Association Hypertension Council Scientific Sessions 2023

September 2023; Boston, Massachusetts

Alexander MR. Flow disturbances: competing interests in a case of hypertensive emergency. Oral Case Presentation.



American Heart Association Scientific Sessions 2023

November 11–13, 2023; Philadelphia, Pennsylvania

- Bhatia H.** It's elevated, now what? Existing strategies to address high lip(a). Session PR.CVS.499.
- Garry GA,** Dos Santos M, Tan W, et al. Induction of cardiac reprogramming following injury through delivery of a single factor, PHF7. Abstract 18042.
- Javaheri A,** Kosiborod MN, Ozcan M, et al. Association between growth differentiation factor-15 and outcomes among patients with heart failure: a systematic literature review. Abstract 15617.
- Khera R.** AI in medicine: what is going well. Session CS.HL.1069.
- Khera R.** Artificial intelligence and medical education: opportunities and risks. Session QU.CVS.458.
- Khera R.** How can AI enhance a learning health system? Session EP.ME.488.
- Kim Y.** Genetics in cardiotoxicity risk stratification: ready for prime time? Session CO.CVS.401.
- Oikonomou EK.** BioLINCC: Leveraging existing data and opportunities for collaboration. Session EP.CVS.482.
- Oikonomou EK,** Thangaraj PM, Bhatt DL, [...] **Khera R.** An explainable machine learning-based phenomapping strategy for adaptive predictive enrichment in randomized controlled trials of preventive interventions. Abstract 163.
- Paruchuri K,** Bernardo R, Haidermota S, et al. Implementation of a digital disease management platform for heart failure: AMAZE. Abstract 13475.
- Rawnsley D,** Islam M, Ma X, et al. Mitophagy facilitates cytosolic proteostasis to preserve cardiac function. Abstract 17015.
- Selvaraj S,** Vidula MK, Rojulpote C, et al. Diagnostic utility of SGLT2 inhibitors to facilitate myocardial glucose suppression during evaluation of myocardial inflammation. Abstract 12053.
- Shah N.** MASALA: New insights into South Asian health and future cohort directions. Session EP.CVS.482.
- Shah N,** Huang X, Cameron N, et al. Association of cardiovascular health with time lived free of coronary artery calcium. Abstract EPI63/323.
- Sun W,** Jiang D, Wu T, et al. Post-GWAS functional analysis of CBLN2 locus reveals the role of CUX1 in the inflammatory pathogenesis of pulmonary arterial hypertension. Session BASC.01.
- Sun W,** Khoury WE, Jiang D, et al. Post-GWAS functional analysis of CBLN2 locus reveals the role of CUX1 in the inflammatory pathogenesis of pulmonary arterial hypertension. Abstract 16731.
- Urbut S.** Cohort data for genomic discovery. Session EP.CVS.442.
- Urbut S,** Yeung MW, Schuermans A, et al. MS gene: multistate modeling of dynamic lifetime risk of coronary artery disease using electronic health records in the UK biobank. Abstract 14747.

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I have been engaged with NCYIF since my time as a cardiology fellow, and no other venue in the country has fostered scientific excellence and creativity in early career investigators as much as the Forum. I learned some of the most foundational skills in presenting and discussing my science by joining the forum at various stages of my career. NCYIF is a competitive but uniquely enjoyable venue, where I had the opportunity to interact with many leaders in the field who've inspired my career, and met many of my current friends. I also know that this is a sentiment echoed by many of my peers.

—Rohan Khera, MD, MS

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American Heart Association Scientific Sessions 2022

November 5–7, 2022; Chicago, Illinois + Virtual

- Almuwaqqat Z**, Nayak A, Martini MA, et al. Neighborhood social vulnerability predicts cardiovascular disease outcomes through pro-inflammatory risk factors. Abstract 15192.
- Bhatia H**, Desai P, Zhu W, et al. Trends in lipoprotein(a) testing in individuals with cardiovascular disease. Abstract 12126.
- Bhatia H**, Rikhi R, Allen T, et al. Lipoprotein(a) and the pooled cohort equation for risk prediction: the multi-ethnic study of atherosclerosis. Abstract 11309.
- Bhatia H**, Trainor P, Carlisle S, et al. Aspirin for primary prevention of cardiovascular events in patients with elevated lipoprotein(a): The multi-ethnic study of atherosclerosis. Abstract 11374.
- Freaney PM**, Huang X, Petito LC, et al. Association between adverse pregnancy outcomes and N-terminal pro-brain natriuretic peptide 2–7 years after delivery: numom2b heart health study. Abstract 14907.
- Keshvani N**, Subramanian V, Wrobel C, et al. Variation and predictors of referral for cardiac rehabilitation among patients with heart failure before and after expansion of coverage and association with 1-year clinical outcomes. Abstract 14404.
- Oikonomou EK**, Holste G, Mortazavi, B, [...] **Khera R**. Automated detection of aortic stenosis from single-view 2-dimensional echocardiography using a semi-supervised, contrastive learning approach. Abstract 13659.
- Oikonomou EK**, Suchard MA, Kernan WN, [...] **Khera R**. An adaptive strategy of predictive enrichment to increase efficiency of randomized clinical trials using machine learning: a simulation of the IRIS trial. Abstract 13661.
- Paruchuri K**, Raghu V, Hoffmann U, et al. Polygenic risk score and deep learning using chest radiographs: complementary prediction of incident coronary artery disease. Abstract 12397.
- Sun W**, Jiang D, Li G, et al. Post-GWAS functional SNP analysis to define genetic and acquired pathogenesis of pulmonary arterial hypertension. Abstract 12700.
- Urbut S**, Cho SMJ, Haidermota S, et al. Dynamic importance of genomic and nongenomic risk factors for coronary artery disease over the life course. Abstract 9843

American Heart Association Scientific Sessions 2021

November 13–15, 2021; Boston, Massachusetts

- Almuwaqqat Z**, Kim JH, Garcia M, et al. Inflammation: a window into the pathobiology of impaired vascular regeneration in patients with coronary artery disease. Abstract 10957.
- Bhatia H**, Thomas I, Denenberg J, et al. Coronary artery calcium measurement and prediction of cardiovascular disease by different CT scanner types: The multi-ethnic study of atherosclerosis. Abstract 9425.
- Friede KA**, Myers R, Gales J, et al. A gene expression signature reflective of exposure to antiplatelet therapy is associated with bleeding. Abstract 10544.
- Garry GA**, Bezprozvannaya S, Huanyu Zhou, et al. Histone reader PHF7 cooperates with the SWI/SNF complex at cardiac super enhancers to promote direct reprogramming. Abstract P493.
- Kim Y**, Kim S, Neyazi M, et al. Intron-mediated enhancement of *Titin* (*TTN*) regulates sarcomere formation and function. Abstract 12802.
- Keshvani N**, Mehta A, Alger H, et al. Quality of care and in-hospital outcomes of patients hospitalized for heart failure with reduced ejection fraction during the COVID-19 pandemic: findings from the Get With the Guidelines–Heart Failure registry. Abstract 13000.
- Khera R**, Liu M, Kondamudi N, et al. Racial and gender differences in lifetime healthcare costs across cardiovascular risk factors. Abstract 11909.
- Minhas A**, Countouris ME, Ndumele CE, et al. Association of gestational diabetes with subclinical cardiovascular disease on echocardiogram and endothelial function testing. Abstract 12986.



Oikonomou EK, Suchard M, McGuire DK, **Khera R**. Individualizing the cardiovascular benefits of canagliflozin based on multidimensional computational phenomaps of the CANVAS trials. Abstract 9358.

Oikonomou EK, et al. Individualizing the cardiovascular benefits of intensive blood pressure reduction using computational phenomaps of the SPRINT and ACCORD trials. Abstract 11487.

Rao S, Siddiqi TJ, Khan MS, et al. Polypill therapy and risk of adverse cardiovascular events and mortality: a systematic review and meta-analysis. Abstract 14379.

Selvaraj S, Giamberardino S, Abdulrahim J, et al. Phenome-wide association study (phewas) identifies clinical factors associated with plasma ketones from four large studies. Abstract 9085.

Selvaraj S, Hu R, Vidula MK, et al. Acute echocardiographic effects of exogenous ketone administration and relationship to myocardial glucose uptake on Fdg-pet. Abstract 6929.

Shah S, Kondamdui N, Segar MW, et al. Supranormal left ventricular ejection fraction and risk of major adverse cardiovascular events: findings from the multi-ethnic study of atherosclerosis and Dallas heart study. Abstract 9884.

Sun W, Jiang D, Wu T, et al. Post-GWAS functional analysis of CBLN2 locus to define the pathogenic role of CUX1 in pulmonary arterial hypertension. Abstract 10314.

American Physiology Summit Annual Meeting 2023

April 20–23, 2023; Long Beach, California

Alexander, MR. Dysfunction of regulatory immune mechanisms in hypertension: integrating insights from humans and animal models. Oral Presentation.

Experimental Biology 2022

April 2–5, 2022; Philadelphia, Pennsylvania

Kim Y. Elucidation of cellular compositions and single cell transcription in human cardiomyopathies. Session 428.5.

Federation of Clinical Immunology Societies Annual Meeting 2022

June 21–24, 2022; San Francisco, California

Alexander M. The minor allele of a single nucleotide polymorphism in SH2B3 promotes CD8+ T Cell IFN γ production, hypertension development, and renal damage. Poster #TH.163



Honors and Awards

Matt Alexander, MD, PhD

- 2023 American Physiological Society Water and Electrolyte Homeostasis New Investigator Award
- 2023 American Association of Immunologists Early Career Faculty Travel Grant
- 2023 Fellow of the American Heart Association (FAHA)
- 2022 Travel Award, Federation of Clinical Immunology Societies Annual Meeting
- 2022 Poster of Merit Award, Federation of Clinical Immunology Societies Annual Meeting

Glynnis Garry, MD

- 2023 Burroughs Welcome Career Award for Medical Scientists

Rohan Khera, MD MS

- 2023 American Society of Clinical Investigation (ASCI) Young Physician-Scientist Award
- 2023 Blavatnik Award, Blavatnik Fund for Innovation, Blavatnik Family Foundation
- 2022 Doris Duke Charitable Foundation Clinician Scientist Development Award

Yuri Kim, MD, PhD

- 2023 Young Investigator Award, Heart Failure Seoul
- 2023–2028 K08 HL164885, NIH (Development of strategies to enhance titin (TTN) expression and treat dilated cardiomyopathy caused by TTN haploinsufficiency)
- 2021 Louis N. and Arnold M. Katz Basic Science Research Prize for Early Career Investigators Finalist, AHA

Evangelos Oikonomou, MD, DPhil

- 2023 AHA Elizabeth Barrett-Connor Research Award in Epidemiology and Prevention (to be held 11/2023)
- 2023 Ruth L. Kirschstein Postdoctoral Individual National Research Service Award (F32) Title: “A multi-modal approach for efficient, point-of-care screening of hypertrophic cardiomyopathy.” National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health (NIH).
- 2022 Yale-Mayo Clinic Center of Excellence in Regulatory Science and Innovation (CERSI) 2022–2023 Scholar
- 2021 AHA Lifestyle & Cardiometabolic Health Early Career Investigator Award (Winner)

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