

**BIOGRAPHICAL SKETCH**

Provide the following information for the Senior/key personnel and other significant contributors. Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Dinesh Kalra, MD, FACC, FSCCT, FSCMR, FNLA

eRA COMMONS USER NAME (credential, e.g., agency login):DKKALR01

POSITION TITLE: Professor and Chief of Cardiology

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
All India Institute of Medical Sciences, New Delhi, India	MD	08/1988	04/1994	Medicine
Baylor College of Medicine, Houston, Texas		06/1995	06/1999	Internal Medicine
Baylor College of Medicine, Houston, Texas		07/1999	06/2002	Cardiology
University of Michigan, Ann Arbor, Michigan		06/2007	01/2008	Cardiac Electrophysiology
Weill-Cornell College of Medicine, New York		07/2013	06/2014	Advanced Cardiac Imaging

**A. Personal Statement**

Dinesh Kalra, MD, is an Attending Cardiologist and Professor of Medicine and Chief of Cardiology at University of Louisville. He also serves as the Director of Advanced Cardiac Imaging, Director of the Lipid Clinic and the Infiltrative Cardiac Disease Program and holds an endowed Chair in the Cardiovascular Innovations Institute in Louisville, KY. He specializes in cardiac imaging (cardiac CT and MRI, echocardiography and nuclear cardiology) and its role in cardiovascular diseases, both from a clinical care perspective and a translational science perspective.

Dr. Kalra’s clinical and research interests are in cardiac CT for studying vulnerable coronary plaque and plaque regression. He also investigates the role of Cardiac MRI in earlier diagnosis of cardiomyopathies including Fabry disease, as well as in the RV dysfunction that occurs in pulmonary hypertension. His trial interests include new drug therapies in lipidology and pulmonary hypertension.

He serves on the education committee of the SCCT (Society of Cardiovascular CT) and SCMR (Society of Cardiovascular MRI) and is a member of several DEI committees for the NLA (National Lipid Association), ACC (American College of Cardiology), AHA (American Heart Association) and ASPC (American Society of Preventive Cardiology). He is on the board of directors of the University of Louisville hospital and the NLA.

## **B. Positions, Scientific Appointments and Honors**

### **Professional Postions**

2003-2004	Escorts Heart Institute, New Delhi
2004-2007	Lahey Clinic Cardiology, Burlington, MA and Nashua, NH
2008-2015	Cardiospecialists Group, Midwestern University, Chicago, IL and Munster, IN
2015-2019	Assistant Professor, Rush College of Medicine
2019-2021	Associate Professor, Rush College of Medicine
2021-present	Professor, University of Louisville School of Medicine

### **Honors and Awards**

1992	First prize in national competition, Indian Academy of Pediatrics, New Delhi
1993	First rank in Internal Medicine exam, All India Institute of Medical Sciences, New Delhi
1998	Basic Research prize for laboratory research on "Induction of tumor necrosis factor gene And protein expression in the adult mammalian heart by Nitric Oxide," Baylor College of Medicine, Houston
1999	Outstanding Research Award from the Department of Internal Medicine, Baylor College Of Medicine for "Angiotensin signaling pathways in the heart"
1999	American Heart Association's Melvin L. Marcus Young Investigator Award finalist, Atlanta, Georgia
2000	Best Basic Science Research Fellow Award, Baylor College of Medicine, Houston, TX
2000	American College of Cardiology/Merck Research Award recipient, Anaheim, CA
2001	Best Clinical Research Fellow Award in Cardiology, Baylor College of Medicine, Houston, TX
2001	Astra-Zeneca National Scholar 2 <sup>nd</sup> prize in Cardiovascular Sciences contest, Jackson Hole, WY
2002	Young Investigator Award, American Association of Cardiologists of Indian Origin, Chicago, IL
2004	Compassionate Doctor Award, EHIRC
2009	Clinician of the Year award, MCH Cardiology, Chicago, IL
2016	Medical student educator award, RUMC, Chicago, IL
2020	C3 top research scientist award for best original science in atherosclerosis

### **Board Certifications**

1998-2008	ABIM, Internal Medicine, allowed to lapse in 2008
2002, 2012	Level 3 Echocardiography (ASE), recertified 2012-present
2002, 2012	Cardiovascular Disease (ABIM), recertified 2012-present
2003, 2013	Nuclear Cardiology (CBNC), recertified 2013-present
2010-2019	Board of Heart Rhythm Examiners (IBHRE)
2016-present	Level 3 Cardiac CT (CBCCT)
2016-present	Level 3 Cardiac MRI (CBCMR)
2016-2020	Registered Physician in Vascular Interpretation (ARDMS), RPVI
2020-present	American Board of Clinical Lipidology

### **Memberships/Professional Societies**

American College of Cardiology  
Society of Cardiovascular Computed Tomography  
Society of Cardiovascular Magnetic Resonance  
National Lipid Association  
American Heart Association  
American Society for Nuclear Cardiology

### C. Contributions to Science

Early on in my career, I studied the molecular underpinnings of why hibernating myocardium stays alive by reducing its contractility and adapting its metabolism to reduce its workload in the face of reduced perfusion. In animal models and human hearts, I showed that upregulation of TNF- $\alpha$  and iNOS were the key genes responsible for both modulating reduced contractility and elucidated the nuclear transcription pathways that controlled these adaptive genetic signals. Furthermore, I showed that myocardial deformation by echo tissue doppler correlated well in identifying myocardial segments that were hibernating and that would improve after surgical revascularization (coronary bypass surgery). I was able to obtain one MERIT and 1 Merck grant to study and establish a clinically useful tool by applying translational concepts combining a common clinical conundrum with my prior work from the molecular basic science laboratory

- Kalra D, Baumgarten G, Dibbs Z, Seta Y, Sivasubramanian N, Mann D. Nitric Oxide provokes tumor necrosis factor-  $\alpha$  expression in adult feline myocardium through a cGMP-dependent pathway. *Circulation* 2000;102: 1302 -1307.
- Kalra DK, Zhu X, et al. Increased myocardial gene expression of Tumor necrosis factor-  $\alpha$  and Nitric oxide synthase-2: a potential mechanism for depressed myocardial function in hibernating myocardium in humans. *Circulation*. 2002;105:1537- 1540.
- Kalra D, Zhu X et al. Relation of TD myocardial velocities to regional TNF and iNOS levels in Humans. *Circulation* 2001;104:II-732-733.
- Dibbs Z, Kalra D et al. Cytokines in heart failure: pathogenetic mechanisms and potential treatment. *Proceedings of the Association of American Physicians*. 1999;111:423-428.

Currently, my research focuses on plaque imaging using coronary CTA. We study high risk individuals such as those of South Asian ancestry or those with high Lp(a) who have early subclinical atherosclerosis and we are looking at factors (clinical and molecular) that result in plaque regression with novel experimental therapies as well as conventional therapies such as vegan diet and lifestyle changes. These are being combined with plaque characteristics and genomic studies to personalize risk prediction and treatment

- Prevention of Atherosclerotic Cardiovascular Disease in South Asians in the US: A Clinical Perspective from the National Lipid Association. Kalra D, Vijayaraghavan K, Sikand G, et al. *J Clin Lipidol* 2021, doi.org/10.1016/j.jacl.2021.03.007
- JCL roundtable: South Asian atherosclerotic risk. Kalra DK, Sikand G, Vijayaraghavan K, Guyton JR. *J Clin Lipidol*. 2020 Mar-Apr;14(2):161-169. doi: 10.1016/j.jacl.2020.03.005

### Complete List of Published Work in PubMed:

<https://www.ncbi.nlm.nih.gov/pubmed/?term=dinesh+kalra>

### D. Additional Information: Research Support and/or Scholastic Performance

#### Ongoing Research Support

1. EVOLVE-MI: A Pragmatic Randomized Multicenter Trial of EVOLocumab Administered Very Early to Reduce the Risk of Cardiovascular Events in Patients Hospitalized With Acute Myocardial Infarction, site principal Investigator, 5/2022 – present
2. A randomized, controlled, multicenter, open-label trial comparing a hospital post-discharge care pathway involving aggressive LDL-C management that includes inclisiran with usual care versus usual care alone in patients with a recent acute coronary syndrome (VICTORION-INCEPTION), site principal Investigator, 4/2022 – present

3. Interfacility Utilization of High Sensitivity Cardiac Troponin (hs-cTnT) – a care pathways and health care economic study, site principal co-Investigator, 4/2022 – present
4. VICTORION-PLAQUE, A Phase III Double-blind, parallel, randomized comparison of inclisiran and placebo in high-risk ASCVD patients with Non-Obstructive Coronary Artery Disease, site principal co-Investigator, 3/2022 – present
5. A randomized double-blind, placebo-controlled, multicenter trial, assessing the impact of inclisiran on major adverse cardiovascular events in participants with established cardiovascular disease (VICTORION-2 PREVENT), site principal Investigator, 10/2021 – present
6. A Phase 2, randomized, double-blind, placebo-controlled, multiple-arm, parallel-group, adaptive study to investigate the safety, tolerability, pharmacokinetics, and potential efficacy of OPL-0301 in adults with postmyocardial infarction left ventricular dysfunction, site co-principal Investigator, 10/2021 – present
7. Structural Heart Academic Research Consortium (SHARC), site principal co-Investigator, 2/2022 – present
8. Effect of Environmental Exposures on Chronic Health Outcomes (ECO) Study, site principal co-Investigator, 1/2022 – present
9. A Double-blind, Randomized, Placebo-controlled Study to Evaluate the Efficacy and Safety of IL-1B INHIBITOR Treatment in Patients with Recurrent Pericarditis, site principal Investigator, 10/2021 – present
10. A randomized double-blind, placebo-controlled, multicenter trial, assessing the impact of inclisiran on major adverse cardiovascular events in participants with established cardiovascular disease (VICTORION-2 PREVENT), site principal Investigator, 10/2021 – present
11. A Prospective, Non-interventional, Long-term, Multinational Cohort Safety Study of Patients with Hereditary Transthyretin Amyloidosis with Polyneuropathy (hATTR-PN), site principal Investigator, 11/2021 – present
12. Zilebesiran as Add-on Therapy in Patients With Hypertension Not Adequately Controlled by a Standard of Care Antihypertensive Medication (KARDIA-2, ALN-AGT01-003), site principal Investigator, 11/2021 – present
13. A Phase 2, randomized, double-blind, placebo-controlled, multiple-arm, parallel-group, adaptive study to investigate the safety, tolerability, pharmacokinetics, and potential efficacy of OPL-0301 in adults with postmyocardial infarction left ventricular dysfunction, site co-principal Investigator, 10/2021 – present
14. HELIOS-B: A Phase 3, Randomized, Double blind, Placebo-controlled, Multicenter Study to Evaluate the Efficacy and Safety of Vutrisiran in Patients with Transthyretin Amyloidosis with Cardiomyopathy (ATTR Amyloidosis with Cardiomyopathy), site principal Investigator, 09/2020 – present
15. Multicenter, Randomized-Controlled Trial to Evaluate the Efficacy and Safety of Antithrombotic Therapy for Prevention of Arterial and Venous Thrombotic Complications in Critically Ill COVID-19 Patients (COVID PACT), site co-principal Investigator, 05/2020 – present
16. Cardiac complications in Patients with SARS Corona virus 2 regisTrY (CAPACITY), site principal Investigator, 04/2020 – present.
17. Assessing the Impact of Lipoprotein (a) Lowering With TQJ230 on Major Cardiovascular Events in Patients With CVD (Lp(a)HORIZON), site principal Investigator, 01/2020 – present

18. A Multicenter, dOuble-blind, ranDomized, placebo-controlled, parallel-group study to determine the efficacy and safety of lucerastat oral monotherapy in adult subjects with FabrY disease (MODIFY), sponsor: Idorsia, site co-principal Investigator, 01/2020 – present
19. Clinical Trial of Atrial Fibrillation Patients Comparing Left Atrial Appendage Occlusion Therapy to non-Vitamin K Antagonist Oral Anticoagulants (CATALYST Trial), sponsor: Abbott, site principal Investigator, 01/2020 – present
20. Comparison of 2D and 3D echocardiography parameters in patients receiving chemotherapy, site co-principal Investigator, 01/2020 – present
21. To evaluate the utility of Pulmonary Artery velocity profile to predict outcomes in patients with heart failure in a major urban tertiary care system, 10/19 to present
22. The Cardiovascular Multi-dimensional Observational Investigation of the Use of PCSK9 Inhibitors (cvMOBIUS), site principal Investigator, 8/2019 – present
23. PRECISE: Prospective Randomized Trial of the Optimal Evaluation of Cardiac Symptoms and Revascularization, site principal investigator, 10/2018 – present
24. DECISION: Decisive Evaluation of Cardiac Ischemia, Symptoms and Revascularization, site principal investigator, 10/2018 – present
25. Riociguat rEplacing PDE-5i Therapy evaLUated Against Continued PDE-5i thErapy (REPLACE), sponsored by Bayer; site principal Investigator, 10/2017 – present
26. Familial Chylomicronemia Syndrome EMR Search, site principal investigator, 9/2017 – present
27. A Double-blind, Randomized, Placebo-controlled Study to Evaluate the Efficacy and Safety of IL-1B INHIBITOR Treatment in Patients with Recurrent Pericarditis, site principal Investigator, 10/2021 – present

**Completed Research** (within past 3 years only)

1. A Double-blind, Randomized, Sham–procedure–controlled, Parallel-group Efficacy and Safety Study of Allogeneic Mesenchymal Precursor Cells (CEP–41750) in Patients with Chronic Heart Failure Due to Left Ventricular Systolic Dysfunction of Either Ischemic or Nonischemic Etiology (DREAM-HF), sponsored by Teva; site principal Investigator, 8/2017 – present
2. A multicenter, randomized, double-blind, parallel group, active-controlled study to evaluate the efficacy and safety of LCZ696 compared to valsartan, on morbidity and mortality in heart failure patients (NYHA Class II-IV) with preserved ejection fraction (PARAGON), sponsored by Novartis; site sub-investigator, 12/2016 – present
3. A multicenter, randomized, double-blind, double dummy, parallel group, active-controlled 8-week study to evaluate the effect of sacubitril/valsartan (LCZ696) versus enalapril on changes in NT-proBNP and safety and tolerability of in-hospital initiation of LCZ696 compared to enalapril in HFrEF patients who have been stabilized following hospitalization for acute decompensated heart failure (ADHF) (PIONEER-HF), sponsored by Novartis; site sub-investigator, 11/2016 – present
4. A Clinical Study of Patients with Symptomatic Neurogenic Orthostatic Hypotension to Assess Sustained Effects of Droxidopa Therapy (RESTORE), sponsored by Lundbeck; site principal Investigator, 12/2016 – present
5. Randomized, Double-Blind, Placebo controlled Study of the Short-Term Clinical Effects of Tolvaptan in Patients Hospitalized for Worsening Heart Failure with Challenging Volume Management (SECRET of

HF), Sponsored by Cardiovascular Clinical Science Foundation; site principal Investigator, 9/2014 – 12/15

6. A Phase III, case series clinical study of the reversal of the anticoagulant effects of dabigatran by intravenous administration of 5.0 g idarucizumab (BI 655075) in patients treated with dabigatran etexilate who have uncontrolled bleeding or require emergency surgery or procedures. RE-VERSE-AD (A study of the RE-VERSal Effects of Idarucizumab on Active Dabigatran) trial; site principal investigator, 8/2014 – 12/15
7. Randomized, double-blind, Evaluation in secondary Stroke Prevention comparing the Efficacy and safety of the oral Thrombin inhibitor dabigatran etexilate (110 mg or 150 mg, oral b.i.d.) versus acetylsalicylic acid (100 mg oral q.d.) in patients with Embolic Stroke of Undetermined Source (RESPECT ESUS); site Principal Investigator, 7/2014 – 12/15
8. Evaluation of Dual Therapy with Dabigatran vs. Triple Therapy with Warfarin in Patients with AF That Undergo a PCI With Stenting (REDUAL-PCI); site Principal Investigator, 3/2015 – 12/2015
9. An Open-label, Randomized, Controlled, Multicenter Study Exploring Two Treatment Strategies (Rivaroxaban or Dose-Adjusted Oral Vitamin K Antagonist Plus Dual Antiplatelet Therapy Followed by Rivaroxaban Plus Low-dose Acetylsalicylic Acid) in Subjects with Atrial Fibrillation Who Undergo Percutaneous Coronary Intervention. PIONEER-AF, Sponsored by Janssen Scientific Affairs, LLC; site Principal Investigator, 4/2013 – 12/15
10. A randomized, double-blind, triple-dummy trial; to compare the efficacy of otamixaban with Unfractionated Heparin + eptifibatid, in patients with Unstable angina/Non-ST segment Elevation Myocardial infarction scheduled to undergo an early invasive strategy (TAO trial) Sponsored by Sanofi-Aventis; site Principal Investigator, 3/2010-1/2012