

RAMDAS G. PAI, MD, FACP, FASE, FRCP(Edin), FACC

DATED: January 4, 2021

ADDRESS: Professor Step VI (Tenured, Ladder rank) of Medicine, Chair of Medicine and Clinical Sciences, Founding Director cardiovascular Fellowship Program, University of California Riverside School of Medicine, 900 University Avenue, #2619 SOM Education Building, Riverside, CA

PHONE: 951-827-3931 (Office)

E-MAIL: ramdas.pai@medsch.ucr.edu **CITIZENSHIP:** United States of America

ADVANCED CLINICAL EXPERTISE / ADMINISTRATIVE EXPERIENCE IN BRIEF:

- Currently a **Tenured Professor of Medicine** at University of California Riverside School of Medicine and Chairman of Medicine, Chair of Clinical Sciences and the founding director of cardiovascular fellowship training program.
- Extensive experience in clinical practice, GME building, and building partnerships with hospital and physician groups. Experience in UME, LCME visit and CME organization.
- **Board certified** in internal medicine, cardiology, echocardiography and cardiac CT and adult congenital heart diseases. **Level III certified** in echocardiography, cardiac MRI and Cardiac CT. **Expertise** in valvular and adult congenital heart disease. Solid bedside clinician/teacher with diverse practice experience in varied settings and program developments.
- Functioned as director of echocardiography, cardiac imaging, valve program, cardiology fellowship training. Helped conceive and build LLU Heart & Imaging Center, various focused clinical programs. Helped build a 125 bed heart hospital in Riyadh (King Abdul Aziz Cardiac Center) besides help coordinate cardiac services and imaging in 4 major locations in the campus.
- Experienced team builder.
- Extensive scholarly activity and teaching at local, national and international levels.
- Editorial board member of multiple cardiology journals.

PROFESSIONAL QUALIFICATIONS:

MBBS (79): Graduated with the **top rank among the 9 medical colleges** of Karnataka state with State award and 7 university awards, Kasturba Medical College, Manipal, India

MD (82): Indian Board in Internal Medicine
Kasturba Medical College, Manipal, University of Mysore, India

MRCP (84): British Board in Internal Medicine, Royal College of Physicians, London, UK

ABIM-IM (1990): Internal Medicine Board Certified in 1990, **scored 99th percentile**
Recertified 2013 (9th decile), **valid till 2023**

ABIM-Cardiology (1993): Board Certified in Cardiology Recertified 2013 (10th decile), **valid till 2023**

NBE (2003): National Board of Echocardiography (**valid till 2023**), **Scored >99 percentile**

CBCCT (2012): Board certification in cardiac CT (**valid till 2022**)

ABIM-ACHD (2017): Board Certified in adult congenital heart diseases (**valid till 2027**)

FRCP (93): Elected to Fellowship, Royal College of physicians, Edinburgh, UK

FACC (94): Fellow of the American College of Cardiology

FASE (2014): Fellow of the American Society of Echocardiography

FACP (2018): Fellow of the American College of Physicians

LICENSURE:

CALIFORNIA: License # A 048280; Fully Licensed in INDIA and BRITAIN as well

PROFESSIONAL TRAINING AND POSITIONS HELD:

- 1979-82: Postgraduate Resident in Internal Medicine,
Kasturba Medical College Hospitals, Mangalore, India
- 1983-86: Resident Registrar in Medicine (18m), GI (1yr) & Cardiology (1yr)
Hospitals affiliated with Universities of Edinburgh & Aberdeen, UK.
- 1986-87: Attending Physician (Internist),
Dammam Central Hospital, Dammam, Saudi Arabia.
- 1987-88: Research Fellow in Cardiology (Echo) with Pravin M Shah, MD
Loma Linda University Medical Center, Loma Linda, CA
- 1988-89: Intern in Medicine (PGY1),

Downstate/Kings County Hosp/VAMC, SUNY, Brooklyn, NY.

1989-90: Senior Resident in Medicine (PGY3),
Long Island Jewish Hosp/Albert Einstein COM, New Hyde Park, NY.

1990-92: Clinical Fellow in Cardiology,
Loma Linda University Medical Center, Loma Linda, CA.

1992-99: Director of Echocardiography
Loma Linda VA Medical Ctr, Loma Linda, CA

1999-00: Director of Echocardiography , Research and Adult Fellowship programs,
King Abdul Aziz Cardiac Ctr, Riyadh, Saudi Arabia.

2000-04 Director of Cardiovascular Research and fellowship Programs,
Loma Linda University Medical Center, Loma Linda, CA

2004-06: Director of Echocardiographic Laboratories, Dir Heart Valve Center
USC – Keck School of Medicine, Los Angeles, CA

2006-15: Director, Integrated Cardiac Imaging, Heart Valve Program
Loma Linda University Medical Center, Loma Linda, CA

7/1/2015-: Director of Cardiac Imaging and Fellowship Programs
UCR SOM , Dignity Health – St Bernardines Medical Center, San Bernardino, CA

9/1/2016-: Chairman of Medicine
University of California Riverside School of Medicine, Riverside, CA

9/1/2016-: Chair of Division of Clinical Sciences
University of California Riverside School of Medicine, Riverside, CA

ACADEMIC APPOINTMENTS:

1992-97: Associate Professor of Medicine,
Loma Linda Univ School of Medicine, Loma Linda, CA

1997-2017: Professor of Medicine,
Loma Linda Univ School of Medicine. Loma Linda, CA.

2004-06: Professor of Medicine
USC – Keck School of Medicine, Los Angeles, CA

2016- Tenured Professor of Medicine (Step VI)
University of California Riverside School of Medicine, Riverside, CA

CURRENT ADMINISTRATIVE ROLES at UCRSOM:

9/2016 -: Chairman of Medicine
Chair of Division of Clinical Sciences
Chair, Council of Chairs
Member, Leadership Council
Member, Executive Leadership Committee
Member, Dean's Council
Member, LCME Task Force
Member, Health Sciences Compensation Committee
Member, GME Committee
Member, Clinical Strategy Group
Member, Research Strategy Group
Member, Faculty Executive Committee

HONORS:

1973-79: The best outgoing MBBS (MD) student and **highest score among the 9 medical colleges** of Karnataka state, India.

1979-82: **National award** from Council on Scientific & Industrial Research for research on Renin Profile in Hypertension (during medicine residency)

1987-88: **AHA Research fellow** Greater Los Angeles Affiliate.

1992: **Outstanding fellow in Cardiology**, Loma Linda U Med Center, CA.

1999: Citation for **Outstanding Contributions to Research 1992-99**; Loma Linda University

2004: Citation for **“outstanding contributions to research”**; North American Konkani Association, USA

2008: Recognition for **“outstanding contributions to cardiology”**; American Association of Cardiologists of Indian Origin.

2013: **“Outstanding Mentor in Research”** by Department of Medicine, Loma Linda University School of Medicine, Loma Linda, CA.

2018: **“Distinguished Teacher Award”** by ACP Southern California Chapter II

2019: **“2019 Leadership Award”** by ACP Southern California Chapter II

2019: “2019 Educator of the year” by California Chapter of American College of Cardiology

SOCIETY MEMBERSHIPS:

FELLOW of Royal College of Physicians, Edinburgh, UK; FELLOW American College of Cardiology; FELLOW of International College of Angiology; FELLOW of American Society of Echocardiography; Fellow of American College of Physicians:

FOUNDING MEMBER

Society of Cardiovascular MRI (SCMR),

VICE PRESIDENT

International College of Angiology

COMMITTEE MEMBERSHIPS AT NATIONAL AND STATE LEVELS:

Member, Standards and Guidelines committee of American Society of Echocardiography 2011-2014

Member, Research committee of American Society of Echocardiography 2011-2016

Member, Clinical Trials committee of Society of Cardiac MR 2020-

Co-Chair, Academic Committee of American College of Cardiology, California Chapter 2020-

EDITOR BOARD MEMBERSHIPS:

Veterans Health Journal (1997 – 99)

Journal of International College of Angiol – Also Vice President of ICA (1997 --)

Journal Cardiovascular MR – Assistant Editor (2005-7)

International Journal of Biological Sciences – Editor in Chief (Clinical) 2004-2006

Echocardiography (2008 -)

Cardiac Ultrasound Today (2005 -)

Journal of American Society of Echocardiography (2008 - 2011)

Journal of Heart Valve Diseases (2010 -)

Research Reports in Clinical Cardiology (2010 -)

EDITOR IN CHIEF:

World Journal of Cardiology (1-1-2019 to -)

ASSITANT EDITOR:

Journal of Society of Cardiac Magnetic Resonance (2004-2007)

REVIEW OF GRANT APPLICATIONS:

Consultant: for **review of NIH grant applications** (1998)

Virtual panel for the NSF Multimodal Sensor Systems for Precision Health Enabled by Data Harnessing, Artificial Intelligence, and Learning (SenSE) Program (2020), <https://www.nsf.gov/pubs/2020/nsf20556/nsf20556.htm>. The Virtual panel (P202265)

EDITORIAL CONSULTANT FOR PEER REVIEW FOR:

New England J Med (NEJM), Journal of the American College of Cardiology (JACC), Circulation, Heart, Chest, Clinical Cardiology, Journal of American Society of Echocardiography, American Journal of Cardiac Imaging, Echocardiography, American Journal of Cardiology, Journal of Cardiac Failure, Current Cardiology Reports, Future Cardiology, International Journal of Cardiology, Cardiology, European Journal of Cardiothoracic Surgery, Annals of Internal Medicine, European Journal of Echocardiography, Journal of Heart Valve Diseases, European Heart Journal, Heart & Vessels

PATENTS Pending

Pai RG, Slater J, Schulte R, Pai SM, Nie Y. METHOD OF TREATING CARDIAC ARRHYTHMIA WITH PARTICLE BRAGG PEAKS AND PROTON COMPUTED TOMOGRAPHY. U.S. Provisional Patent Application No. 62/043,831. Electronic Submission Date: August 29, 2014

PAST ADMINISTRATIVE CONTRIBUTIONS:

1980-82: Secretary of the Clinical Society of Mangalore, Mangalore, India: Organizing biweekly clinical meetings addressing interesting cases.

1984-85: Administrative registrar (resident) making up the call schedules and co-ordinating resident clinical activities at 2 of the Hospitals affiliated with Universities of Dundee and Edinburgh, UK.

1986-87: In charge of call schedules for 10 Medical attendings and teaching schedule for the 25 medical residents at Dammam Central Hospital, Dammam, Saudi Arabia.

1992-99: Director of the echocardiographic laboratory at Pettis VA med Center, Loma Linda, CA

1992-94: Member of Hospital wide Invasive Committee at Pettis VA med Center, Loma Linda, CA

1996-8: Member of LLU Cardiology Research Committee, Cardiology Fellowship committee, Outreach committee and Echocardiographic committee.

1996-9: Director of Outpatient Cardiology, VA Medical Center, Loma Linda, CA

1997-9: Member of Hospital wide Task Forces on (a) Dedicated Research Time for Clinical Staff, (b) Publications Committee and (c) Research Equipment Committee.

1998-9: Director of Cardiovascular Research, Loma Linda U School of Medicine.

1998-9 Chairman, Publications Task Force, Loma Linda VA Medical Ctr.

1999-2000: Director of echocardiography, research and fellowship programs at King Abdul Aziz Cardiac Center, Riyadh, Saudi Arabia. Helped establish a large state of the art echo lab (11 echo machines, all aspects of echocardiography) and a structured cardiology fellowship program.

2000- 2004: As director of research, division of cardiology at Loma Linda University Medical Center, I am in charge of restructuring research, enhancing productivity and funding. In charge of clinical trials as well as investigator initiated research.

2001-2004: Director of Cardiovascular training program, Loma Linda University, Loma Linda, CA.

2004 -2006 : Director of Echocardiographic Laboratories: USC-Keck School of Medicine, Los Angeles, CA.

2006–2013 Director, Heart & Imaging Center, Director Heart Valve Program, Director, Integrated Cardiac Imaging, Loma Linda University Medical Center, Loma Linda, CA.

2015-now: Director, Cardiology Fellowship Program, UC Riverside School of Medicine, Riverside, CA.

2015-now: Member, GME Committee, UC Riverside School of Medicine, Riverside, CA.

2015-now: Director, Cardiac Imaging Program, St Bernardine Medical Center, San Bernardino, CA

2016-now: Chairman of Medicine, University of California Riverside School of Medicine, Riverside, CA

2016-now: Chair of Clinical Sciences, Univ of California Riverside School of Medicine, Riverside, CA

RESEARCH GRANTS (Current):

2018-2022. NSF. Title: SCH: INT: Connected Smart Hospitals Enabled by Visible Light Communication: (PI: Albert Wang PhD)

Role: Co-PIs:

Budget \$300K/year for 4 years

RESEARCH GRANTS REVIEWED, BUT NOT AWARDED:

2018-. NSF. Title: SCH: INT: People-Hospital Connected Healthcare by Handheld Ultrasound Devices

PI: Albert Wang PhD

Co-PI:

Prof. Xiaoping Hu PhD (ultrasound imaging algorithm)

Prof. Ramdas G. Pai MD (medical advisor)

Budget up to \$300K/year for 4 years

2018-. Bristol Myers Squibb. Title: Venous Thromboembolic Risk Stratification in Hospitalized Patients: Potential Value of Therapeutic Anticoagulation.

PI: Ramdas G. Pai MD

Budget up to \$800K/year for 2 years

2016-. NHLBI (RO1). Associating diet with Heart Failure genesis, progression and mechanisms

PIs: Synnove F. Knutsen MD, PhD and Ramdas G. Pai MD

Direct Costs requested: \$8,883,469

Reviewed and scored, but not funded. Being prepared for resubmission.

COMPLETED RESEARCH GRANTS:

1. 1980-82: Fellow of the Council on Scientific and Industrial Research, India. This Fellowship grant supported my salary and expenditure for research on "Renin Profile of Hypertension in India" (INR 40,000)

2. 1987-88: Fellowship grant from American Heart Association, Greater Los Angeles Affiliate. Salary Support for research on Echo-Doppler Assessment of Left Ventricular Diastolic Function (\$23,000)

3. 1994: Unrestricted grant from Pfizer Pharmaceuticals supporting research on Myocardial Contrast Echocardiography (\$ 4,000)

4. 1993-95: Research grant from Medtronic Pacemaker Division for research on Pacer Hemodynamics (\$ 11,000)

5. 1993, 94: Equipment grant on loan from TomTec for research on Three-dimensional Echocardiography. Dollar equivalent of total loan about \$10,000.

6. 1994: Equipment grant on Loan from Acuson for research on Doppler Tissue imaging on National Opinion leader program. Total loan period 9 months, dollar equivalent \$60,000.

7. 1994: Equipment grant on Loan from Hewlett Packard for research on Color Kinesis on National Opinion leader program. Total loan period 1 month, dollar equivalent \$6,000.

8. 1996-97: Equipment grant on Loan from Acuson for research on Doppler Tissue imaging on National Opinion leader program. Total loan period 6 months, dollar equivalent \$36,000.

9.1997: Seed money of \$7,000 from Loma Linda University for “Doppler evaluation of left ventricular relaxation”.

10. 10/97-4/99: Grant of **\$150, 000** from National Medical Technology Test Bed (Dept of Defence)- project: “Assessment of Left Ventricular Relaxation and Elastic Properties From analysis of Mitral E and A Wave Propagation”

11. 4/99-4/00: Continuation grant of **\$170, 000** from National Medical Technology Test Bed (Dept of Defence)- project: “Assessment of Left Ventricular Relaxation and Elastic Properties From analysis of Mitral E and A Wave Propagation”

12. 2006-: CoInvestigator, STICH CMR Core Laboratory HL 07268305, (PI: Gerald M Pohost, MD)

13. 9/2010 – 8/2013: \$200,000 + \$400,000. Stress Myocardial perfusion with ASL in ESRD . Coulter Foundation, PI: Nayak KS and Pai RG.

14. 2/2012 – 1/2014: For \$75,000. Stereotactic protom beam ablation of cardiac arrhythmias. Loma Linda University Translational GCAT grant. PI: Pai RG and Nie Y.

15.2014: Grasp Award: Diet and Heart failure – pilot study. LLU School of Medicine and Public Health, Loma Linda, CA. \$60,000. PI: Synnove Knutsen MD, PhD and Pai RG

DIRECTOR OF CARDIOLOGY SYMPOSIUM:

1. Fourteenth Annual Cardiology Symposium of Loma Linda University: Feb 27 and 28th, 2002 – **“Advances in Diagnosis and Management of Cardiac Arrhythmias”** – Was attended by over 500 health care professionals

2. Fifteenth Annual Cardiology Symposium of Loma Linda University: March 5 and 6th, 2003 – **“Advances in the Management of Valvular Heart Diseases”** – Attended by 450 health care professionals

3. Sixteenth Annual Cardiology Symposium of Loma Linda University: March 4 and 5th, 2004 – **“Advances in Cardiovascular Imaging”**

SELECTED INVITED LECTURERS AT NATIONAL/ INTERNATIONAL MEETINGS

1. Teaching faculty on the course on Advanced Echocardiography at San Diego May/June 1993, 1994, 1995, 1996, 1997, 1998 and 1999. For each of these meetings delivered multiple lectures and conducted work shops

2. Teaching faculty in the symposium on Advances in Cardiology at Loma Linda sponsored by Alumni Association in Feb/March 1993, 1995, 1996, 1997, 1998, 1999, 2001, 2002, 2003, 2004, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014
3. Invited speaker at Cardiological Society of India Annual Meeting and the associated Echo Symposium in Dec 1999 at Delhi India. Delivered 3 lectures.
4. Invited Speaker at Pre-ACC Echo Symposium directed by Dr Navin Nanda: 3/2000, 3/2001, 3/2004, 3/2005, 3/2006, 3/2007, 3/2008, 3/2009, 4/2010, 4/2011, 2012, 2013, 2014, 2015, 2016.
5. Invited Speaker at Pre-AHA Echo Symposium directed by Dr Navin Nanda: 11/2000, 11/2001, 11/2003, 11/2004, 11/2005, 11/2006, 11/2007, 11/2008, 11/2009, 11/2010, 2011, 2012, 2013.
6. Guest faculty at Advanced Echo Symposium in Jeddah, Saudi Arabia: 1/2000: Delivered 3 lectures
7. Guest faculty at Egyptian Society of Cardiology/World congress of Echocardiography 1/2000 at Cairo.
8. Guest faculty at Indian Society of Echocardiography Annual Meeting at Pune, India: 2/2000: Delivered 6 lectures and conducted work shops on echo
9. Invited speaker at Heart Valve Society of America, Annual Scientific Sessions, New York, NY in April 2007.
10. Invited speaker at Heart Valve Society of America, Annual Scientific Sessions, Las Vegas, NV in May 2008
11. Invited speaker and expert panel at Heart Valve Society of America, Annual Scientific Sessions, New York in April 2010
12. Session chair on “Hot topics in aortic stenosis” and session summary at Annual Scientific Sessions of American College of Cardiology at Atlanta, Ga in March 2010
13. Invited speaker “LV dyssynchrony and resynchronization” at LA Echo Society (Jan 2010) and Orange County Echo society (2009) and Cardiology grand rounds at UCI Medical Center (2009).
14. Session moderator at Annual Scientific Sessions of American College of Cardiology at Chicago, IL in March 2012
15. Cardiology Grand rounds: “Incremental value of Cardiac MRI over echo”, Hoag Hospital, Newport Beach, CA. 2014
16. Talk on “Cardiac MRI”. ISCOPI Meeting, Riverside, CA. 2014
17. Talk on “Cardiac MRI”. IMSAC Meeting, Anaheim, CA

18. Talk on “TAVR”. ISCOPI Meeting, Riverside, CA. 2015.
19. Faculty and cardiology section review: 17th Annual IM Cal-ACP Review Course, Redlands, CA
20. Cardiology Symposium, Palmdale Regional Med Ctr. “Echoguidance for structural Heart Disease”. 2016.
21. 18th Cardiology Symposium, St Bernardine Medical Center, April 2016. “Cardiac Imaging for evaluation of structural heart disease”.
22. Konkani Medical Symposium, July 1, 2016, Atlanta, GA. “Heart disease in women: Are they different?”
23. Faculty and cardiology section review: 17th Annual IM Cal-ACP Review Course, Redlands, CA: July 2015
24. Faculty and cardiology section review: 18th Annual IM Cal-ACP Review Course, Redlands, CA: July 2016
25. Co-Director, Faculty and cardiology section review: 19th Annual IM Cal-ACP / UCRSOM Review Course, UCR Extension, Riverside, CA: July 2017 (20 CME and MOC points).
26. Co-Director, Faculty and cardiology section review: 20th Annual IM Cal-ACP / UCRSOM Review Course, UCR Extension, Riverside, CA: July 2018 (20 CME and MOC points).
27. Invited Faculty at the 34th ASE-Hoag Recent advances and Update in Echocardiography. Newport Beach, CA. September 22-24, 2017. Directors - Drs Pandian and Shah
28. Invited Faculty at 24th World Congress of Echocardiography at Albena, Bulgaria. May 17-20, 2018. Chaired 2 sessions and gave 3 talks.
29. Co-Director, Faculty and cardiology section review: 21st Annual IM Cal-ACP / UCRSOM Review Course, UCR Extension, Riverside, CA: July 2019 (20 CME and MOC points).
30. Co-director of 21st Annual Cardiology Symposium (Annual Update in Cardiovascular Medicine), Sponsored by UCR/ACC/St Bernardine Medical Center, Double Tree Hotel, San Bernardino, CA. October 2019 (9 hours CME and MOC).
31. Invited Faculty at the 36th ASE-Hoag Recent advances and Update in Echocardiography. Huntington Beach, CA. November 2-4, 2019. Directors - Drs Pandian and Shah. Gave 4 talks, Contestant in Echo Jeopardy and chaired a session.

TEACHING VIDEO BOOKS FOR THE AMERICAN COLLEGE OF CARDIOLOGY

1)Transesophageal echocardiography : the views : biplane and multiplane

Author(s): **Pai, Ramdas G** , Shah, Pravin M.

Produced by Heart House Learning Center, Heart House Television, American College of Cardiology. [Bethesda, Md.] : The College, c1994. Description: 1 videocassette (53 min.) : sd., col. with b&w ; 1/2 in. Notes: "From the Learning Center program: 'Transesophageal echocardiography'."

Credits: Presenters, Ramdas G. Pai and Pravin M. Shah.

NLM ID: 9507260 [Videorecording]

2)Transesophageal echocardiography : self assessment cases : biplane, multiplane

Author(s): **Pai, Ramdas G** , Shah, Pravin M.

Produced by Heart House Learning Center, Heart House Television, American College of Cardiology. [Bethesda, Md.] : The College, c1994. Description: 1 videocassette (53 min.) : sd., col. with b&w ; 1/2 in. Notes: "From the Learning Center program: 'Transesophageal echocardiography'."

Credits: Presenters, Ramdas G. Pai and Pravin M. Shah.

NLM ID: 9507261 [Videorecording]

BOOKS PUBLISHED:

1. Echocardiography Board Review: Au: **Pai RG**, Varadarajan P. Wiley, London UK 2007. ISBN: 9780470518229, NLM ID: 101317538
2. Valvular Heart Disease 100 Questions and Answers: Au: **Pai RG**, Varadarajan P. Jones & Bartlett, Boston, USA 2008. ISBN-13: 978-0763753870
3. Echocardiography: A Case based approach. Au: **Pai RG**, Chandraratna PAN, Malik S, Varadrajana P. Jones & Bartlett, Boston, USA January 2012. NLM ID: 101562697
4. Echocardiography Board Review: Second Edition: Au: **Pai RG**, Varadarajan P. Wiley, London UK 2013. ISBN-13: 978-1118515600
5. Cardiology Board Review. Au **Pai RG**, Varadarajan P, Pai SM. Wiley, London UK 2017 ISBN13 9781118698983
6. Cardiac MRI Board Review. Au Varadarajan P, Pai RG. Jaypee Publishing, New Delhi 2019 (In preparation)

7. Echocardiography Board Review: Third Edition: Au: **Pai RG**, Varadarajan P. Wiley, London UK (in preparation)
8. Cardiology Board Review: Second Edition. Au **Pai RG**, Varadarajan P. Wiley, London (in preparation)

GOOGLE SCHOLAR DATA:

Citations 6487; H-index 39; i10-index 92

PUBLICATIONS:

1. **Pai GR**, Reed NS, Ruddell WSJ. A case of Mitoxantrone associated cardiomyopathy without prior anthracycline therapy. British J Radiol 1987; 60:1125 - 6.
2. **Pai GR**, Haite NE, Rawles JM. One thousand heart attacks in the Grampian: the place of cardiopulmonary resuscitation in general practice. British Med Journal 1987; 294:352-4.
3. **Pai GR**, Rawles JM. A case of respiratory sinus arrhythmia and vasovagal attacks: Use of cosinor analysis for diagnosis and monitoring treatment. British Heart Journal 1987;57:555-7.
4. **Pai R**, Hegde BM, Kamath BR, Bhat EK. Renin profile in primary hypertension. J Assoc Phys Ind 1987; 35:432-3.
5. **Pai RG**, Pai SM. Methyldopa induced reversible immune thrombocytopenia. American J Medicine 1988; 85:123.
6. Rawles JM, **Pai GR**, Reid SR. A method of quantifying sinus arrhythmia: Parallel effect of respiration on P-P and P-R intervals. Clinical Science 1989; 76:103-8.
7. Rawles JM, **Pai GR**, Reid SR. Paradoxical effect of respiration on ventricular rate in atrial fibrillation. Clinical Science 1989; 76: 109-12.
8. **Pai GR**, Rawles JM. QT interval in atrial fibrillation. British Heart Journal 1989; 61:510-3.
9. **Pai RG**, Bansal RC, Shah PM. Doppler derived rate of left ventricular pressure rise: Its correlation with the postoperative left ventricular function in mitral regurgitation. Circulation 1990; 82:514 - 20.
10. **Pai RG**, Bodenheimer MM, Pai SM, Koss JH, Adamick RD. Usefulness of systolic excursion of the mitral anulus as an index of left ventricular systolic function. American J Cardiol 1991;67:222
11. Bansal RC, **Pai RG**, Hauck AJ, Isaef D. Biventricular apical rupture and pseudoaneurysm formation: unique flow pattern by Doppler color flow imaging. Am Heart J 1992; 124:497 - 500.
12. Shah PM, **Pai RG**. Diastolic heart failure. Current Problems in Cardiology 1992; 17:783-845.
13. Pai SM, **Pai RG**. Management of Atrial fibrillation (letter). New Eng J Med 1992;327:1031
14. Jutzy RV, Feenstra L, **Pai RG**, Levine PA. Comparison of intrinsic versus paced ventricular function. PACE 1992; 15:1919-1922.
15. **Pai RG**, Pai SM, Bodenheimer MM, Adamick RD. Hemodynamic validation of Doppler estimated left ventricular rate of pressure rise. Am Heart J 1993;128:240-2.

16. **Pai RG**, Shah PM. A new Doppler index of left ventricular stiffness based on the principles of flow wave propagation: Mathematical basis and review of the method. *J Heart Valve Dis* 1993; 2:167-173.
17. Ho P, Pauls G, Lamberton D, Portnoff J, **Pai RG**, Shah PM. Doppler derived aortic valve resistance: its hemodynamic validation. *J Heart Valve Dis* 1994; 3:283-287.
18. **Pai RG**, Shah PM. Echo-Doppler evaluation of left ventricular diastolic function. *ACC Current Journal Rev* 1994;3:30-33.
19. **Pai RG**, Shakudo M, Yoganathan AP, Shah PM. Clinical correlates of the rate of transmission of transmitral 'A' wave to the left ventricular outflow tract in left ventricular hypertrophy secondary to systemic hypertension, hypertrophic cardiomyopathy or aortic valve disease. *Am J Cardiol* 1994; 73:831-834.
20. **Pai RG**, Bansal RC, Shah PM. Determinants of Doppler derived rate of right ventricular pressure rise. *J Heart Valve Dis* 1994; 3:179-184.
21. **Pai RG**, Suzuki M, Heywood JT, Ferry DR, Shah PM. The mitral 'A' wave velocity wave transit time to the outflow tract as a measure of left ventricular diastolic stiffness. *Circulation* 1994;89:553-557.
22. **Pai RG**, Pai SM, Rawles JM. Effect of respiration on electrocardiographic QT interval. *J Electrocardiol* 1994;27: 143-148.
23. **Pai RG**, Shah PM. Functional anatomy of the mitral apparatus. *Echocardiography* (in press).
24. **Pai RG**, Heywood JTH. Cholesterol embolism (Images in Medicine). *New Eng J Med* 1995; 333:852
25. **Pai RG**, Shah PM. Noninvasive assessment of cardiac hemodynamics and ventricular function. *Current Probl Cardiol* 1995; 20:681-772.
26. Tanimoto M, **Pai RG**, Jintapakorn W, Shah PM. Dobutamine echocardiography for diagnosis and management of coronary artery disease. *Clinical Cardiol* 1995; 18:252-260.
27. **Pai RG**, Ortega V, Ferry DR. A case of mitral-aortic intervalvular fibrosa aneurysm with unique flow patterns and long term natural survival. *J Am Soc Echo* 1995;8:211-4.
28. Tanimoto M, **Pai RG**, Jintapakorn W. Normal changes in left ventricular filling and hemodynamics during dobutamine stress echocardiography. *J Am Soc Echo* 1995; 8:488-493.
29. Tanimoto M, **Pai RG**, Jintapakorn W, Shah PM. Mechanisms of hypotension during dobutamine stress in patients with coronary artery disease. *Am J Cardiol* 1995; 76:26-30.
30. Stoletniy L, **Pai RG**. Usefulness of QTc dispersion in the interpretation of exercise electrocardiography. *Am Heart J* 1995; 130: 918-921.
31. **Pai RG**, Buech G. Newer Doppler measures of left ventricular diastolic function. *Clinical Cardiology* 1996; 19:277-288.
32. **Pai RG**, Tarazi R, Wong S. Constrictive pericarditis causing extrinsic mitral stenosis and a left heart mass. *Clin Cardiol* 1996; 19:517-519.
33. **Pai RG**, Shah PM. Three-dimensional echocardiographic assessment of mitral annulus from surface rendered and volume rendered 3D images. In Pandian NG, Roelandt J, Nanda NC: *Three-Dimensional echocardiography*. Mount Kisco, NY, Futura Publishing Co. 1994
34. Schwartz SL, Cao Q, Pandian NG, Nanda N, **Pai RG**, Shah PM, Ludomirski A, Vogel M, Marx G. Three-dimensional echocardiographic evaluation of aortic valve and LV outflow disorders. In Pandian NG, Roelandt J, Nanda NC: *Three-Dimensional echocardiography*. Mount Kisco, NY, Futura Publishing Co. 1994

35. **Pai RG**, Jintapakorn W, Tanimoto M, Shah PM. Role for Papillary Muscle Position and Mitral Valve Structure in Systolic Anterior Motion of the Mitral Leaflets in Hyperdynamic Left Ventricular Function. *Am J Cardiol* 1995; 76:623-628..
36. **Pai RG**. Echocardiographic assessment of myocardial viability. *ACC Educational Highlights* 1995; 11:1-5.
37. **Pai RG**, Jintapakorn W, Tanimoto M, Cao Q, Pandian N, Shah PM. Three-dimensional echocardiographic reconstruction of left ventricular volume by a transesophageal tomographic technique: In vitro and in vivo validation of its volume. *Echocardiography* 1996; 13:613-621.
38. Tanimoto M, **Pai RG**. Effect of left atrial enlargement on mitral annular size: its role in the genesis of mitral regurgitation in patients with structurally normal mitral leaflets. *Am J Cardiol* 1996; 77:769-774.
39. **Pai RG**, Shah PM. Functional significance of a flexible mitral annuloplasty ring: A three-dimensional echocardiographic assessment. Editorial. *J Heart Valve Dis* 1995; 4:615-617.
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ACKNOWLEDGEMENT FOR CONTRIBUTIONS IN PUBLISHED MANUSCRIPTS:

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180. Patel A, Fine J, **Pai RG**, Naghavi M, Budoff M. Screening for Coronary Artery Calcium in Asymptomatic Adults Based on the 10-Year Framingham Risk Score in the SHAPE Cohort (abstract # 1173-318). American College of Cardiology 68th Annual Scientific sessions ACC 19, New Orleans, LA, Mar 16-18, 2019.

181. Kalamkarian A, Natarajan B, Patel A, Kumar S, Ali MW, **Pai RG**. A Rare Case of Complex Ventricular Septal Aneurysm in Association with Bicuspid Aortic Insufficiency in an Adult Patient (abstract # 1312-136). American College of Cardiology 68th Annual Scientific sessions ACC 19, New Orleans, LA, Mar 16-18, 2019.

182. Varadarajan P, Pai RG. Effect of beta-blocker therapy on survival in patients with severe aortic regurgitation results from a cohort of 756 patients with 20 year follow up (abstract # 1280-457). American College of Cardiology 68th Annual Scientific sessions ACC 19, New Orleans, LA, Mar 16-18, 2019.

183. Natarajan B, Nayak S, Pai RG, Varadarajan P. Long term prognostic Value of Right Bundle Branch Block in Patients with Aortic Regurgitation: Outcome in 756 patients over 20 years. Circulation 2019. Presented at Annual Scientific Sessions of American Heart Association Nov 2019.

Current research projects as PI (2007 -)

1. Outcomes in severe aortic stenosis
2. Natural history and outcomes in severe aortic regurgitation
3. Outcomes in coronary microvascular dysfunction
4. Stereotactic proton beam ablation of cardiac arrhythmias (GCAT award from Loma Linda University School of Medicine)
5. Prognostic implications of myocardial perfusion at 3T
6. Cardiovascular outcomes in ESRD
7. Diet and Heart Failure: Adventist Heart Study 2. (GRASP award from Loma Linda University)

Current research projects as Coinvestigator (2007 -)

1. Whole heart 3D myocardial perfusion imaging at 3T
2. Whole heart 3D myocardial scar imaging at 3T
3. High resolution gated diastolic myocardial perfusion imaging at 3T
4. Noncontrast ASL myocardial perfusion imaging at 3T
5. MRI core lab activities of NIH funded STICH trial (PI Dr Gerald M. Pohost)
6. Stress Myocardial perfusion with ASL in ESRD (Grant from Coulter Foundation, PI: Nayak KS)

AS A LOCAL PRINCIPAL INVESTIGATOR FOR MULTICENTER TRIALS:

1. 9/97-: ACUTE Study: Transesophageal Echocardiography Guided Management of Patients With Atrial Fibrillation Undergoing Electrical Cardioversion. Co-ordinated by Cleveland Clinic foundation.
2. 10/97-9: SYMPHONY: Sibrifiban Versus Aspirin to Yield Maximum Protection From Ischemic Heart Events Post Acute Coronary Syndromes. Co-ordinated by Duke Clinical Research Institute.

3. 3/98-9: PARAGON - B – Lamifiban in acute coronary syndromes – Phase III study
4. 7/98-9: SYMPHONY 2 - : Long term Sibrafiban Versus Aspirin Post Acute Coronary Syndromes. Co-ordinated by Duke Clinical Research Institute.
5. 10/2001-: NAVIGATOR trial – Primary prevention of CAD with Valsartan/starlix.
6. 10/2001-: REVIVE – Calcium sensitizer, Levosimendan in CHF patients