

## CURRICULUM VITAE

### Partho P. Sengupta, MBBS, MD, DM, FACC, FASE

---

Address: WVU Heart and Vascular Institute  
1 Medical Center Drive, Box 8003  
Morgantown WV 26506  
Phone: 304-598-4651  
Fax: 304-599-0860

Email: partho.sengupta@wvumedicine.org

Date of Birth: 02/28/1971

Marital Status: Married

Citizenship: US Citizen

### EDUCATION

---

7/88 - 12/92 Government Medical College, India MBBS

7/86 - 6/88 Somalwar Junior College, India

### CLINICAL TRAINING

---

7/07 – 6/10 Mayo Clinic Arizona, Mayo Medical School  
Residency, Internal Medicine

7/05 – 6/07 Mayo Clinic Rochester, Mayo Medical School  
Residency, Internal Medicine

9/04 – 6/05 Research Associate, Echocardiography laboratory  
Mayo Clinic

5/03 – 6/04 Mayo Clinic Rochester, Mayo Medical School  
Echocardiography Fellowship, Cardiovascular

8/00 – 5/03 GB Pant Hospital, Delhi University, India  
Research Associate, Cardiovascular

7/97 – 6/00            All-India Institute of Medical Science, India  
Clinical Fellowship, Cardiovascular  
DM (Cardiovascular Diseases)

12/96 – 5/97            GB Pant Hospital, Delhi University, India  
Senior Resident, Cardiovascular

1/92 – 1/97            Government Medical College, India  
Internship/Residency, Internal Medicine  
MD (Internal Medicine)

## **MEDICAL LICENSURE**

---

West Virginia    # 27517

DEA                # FS1050474

## **CERTIFICATIONS**

---

2010                National Board of Echocardiography: Diplomate  
2010                Sub-specialty Certification: Cardiovascular Medicine  
2007                American Board of Internal Medicine: Diplomate  
2005                Educational Commission for Foreign Medical Graduates: ECFMG Certificate

## **CURRENT APPOINTMENTS**

---

07/17-present        Chief, Division of Cardiology  
04/17 - present        Director, Cardiovascular Imaging  
04/17- present        Chair, Cardiovascular Innovation  
04/17 – present        Professor of Medicine  
West Virginia University Heart and Vascular Institute

## **PREVIOUS APPOINTMENTS/EMPLOYMENT**

---

07/11- 03/17        Associate Professor of Medicine  
Zena and Michael A. Wiener Cardiovascular Institute  
Mount Sinai School of Medicine  
New York, NY

*Curriculum Vitae – Partho P. Sengupta*

- 07/11- 03/17      Staff Physician, Zena and Michael A. Wiener  
Cardiovascular Institute, Mount Sinai School of  
Medicine, New York, NY
- 07/11- 03/17      Director of Cardiac Ultrasound Research and Core Lab  
Zena and Michael A. Wiener Cardiovascular Institute  
Mount Sinai School of Medicine, New York, NY
- 07/11- 03/17      Director of Interventional Echocardiography  
Zena and Michael A. Wiener Cardiovascular Institute  
Mount Sinai School of Medicine, New York, NY
- 07/13-07/15      Director, Cardiovascular Pathophysiology Course  
Icahn School of Medicine at Mount Sinai, New York, NY
- 06/10 – 06/11      Associate Professor of Medicine  
University of California, Irvine  
Irvine, CA
- 06/10 – 06/11      Staff Physician, University of California, Irvine,  
Irvine, CA
- 06/10 – 06/11      Director of Noninvasive Cardiology and Cardiac Imaging  
University of California, Irvine, Irvine, CA
- 10/04-06/10      Assistant Professor of Medicine  
College of Medicine  
Mayo Clinic, MN

## **CLINICAL AFFILIATIONS**

---

WVU Hospitals, Inc.  
1 Medical Drive  
Morgantown, WV 26506

WVU Heart Institute  
600 Suncrest Towne Centre Drive  
Morgantown, WV 26505

Broaddus Hospital  
1 Healthcare Drive  
Philippi, WV 26416

Davis Memorial Hospital  
903 Gorman Avenue  
Elkins, WV 26241

Grafton City Hospital  
500 Market Street  
Grafton, WV 26354

## **AWARDS / HONORS**

---

- |      |   |
|------|---|
| 2017 | Academy of Excellence in Teaching and Learning  |
| 2017 | Inspiration in Medicine, American Medical Association<br>Chicago, Illinois                                  |
| 2016 | TedMed Speaker, Palm Springs, California  |
| 2015 | Top 25 Professors of Sonography, Medical Technology<br>Schools. March, 2015                                 |
| 2013 | Honorary Lifetime Membership Award, British Society<br>of Echocardiography, October 2013                    |
| 2013 | 14th Feigenbaum Lecturer, Annual Scientific Session,<br>American Society of Echocardiography, July 2013     |
| 2011 | Dr. Madhukar Deshmukh Young Investigator's Award-<br>American Association of Cardiologists of Indian Origin |
| 2010 | Best Fellow in Training Poster - American College of<br>Cardiology, Atlanta, GA                             |
| 2009 | ACC Investigator Award - American College of<br>Cardiology, California Chapter                              |

- 2009 Mayo Brother's Distinguished Fellowship Award for Outstanding clinical performance, humanitarianism and scholarly activities.
- 2007 Mayo Clinic Outstanding Investigator Award- Internal Medicine, Mayo Clinic
- 2004 Winner Finalist, Arthur Weyman Young Investigator Award sponsored by National Board of Echocardiography- American Society of Echocardiography (ASE) Annual Scientific Sessions, San Diego
- 1997 Young Investigator Award in Cardiology- D.P. Basu- Annual Association of Physicians of India Conference, Lucknow
- 1994 Award- Lt. Mr. G.R. Devaikar Memorial (For highest percentage of marks in M.B.B.S.)
- 1994 Award- Mrs. Manormabai Gadre Memorial (For obtaining highest percentage of marks in final M.B.B.S. examination)
- 1994 Gold Medal- Mr. Ramkali Antram Bhattacharya (For obtaining highest percentage of marks in obstetrics and gynecology)
- 1994 Award- Col. Sir K.V. Kukade Memorial (For highest percentage of marks in mid-wifery and gynecology)
- 1994 Gold Medal- Mr. Narayan Sheshadi (For highest scores in final MBBS university exam)
- 1994 Gold Medal- Mr. Laxmi Narayan Ratanlal Jaiswal (For highest percentage of marks amongst male students)
- 1994 Gold Medal- Dr. Manohar Gangadhar Patwardhan (For obtaining highest percentage of marks in Internal Medicine)

1994	Gold Medal- Lt. Mahavir Madhavrao Shende (For highest scores in Final MBBS university exam)
1994	Gold Medal- Rai Bahadur Dr. K.P. Sengupta (For highest scores in Final MBBS university exam)
1989	Gold Medal- Lt. Dr. P.N. Dubey (For highest University scores in Anatomy, First MBBS university exam)
1987	State Scholar Recognition
1987	National Scholar Recognition

## **PROFESSIONAL ASSOCIATIONS**

---

American College of Cardiology

Associate Editor (JACC Cardiovascular Imaging)

Section Editor (JACC)

Scientific Abstract Reviewer

Imaging Council Liaison for JACC: CV Imaging

Future of Cardiac Imaging Task Force (2016-2017)

American Society of Echocardiography

Chair, Innovation Task Force 2017

Board of Director, 2012-2015

Chair, ASE Innovation Competition, 2016-2017

Chair, Telemedicine and New Technology Task Force, 2014-2015

Scientific Abstract Reviewer, 2010-ongoing

Scientific Session Planning committee, 2016-2017

Finance Committee, 2016-2017

Guidelines Committee Member, Writing Group on LV Mechanics

Editorial Board Member

International task force- Liaison officer for India, 2012-onwards

International Chair, 2013 World Summit of Echocardiography Societies

Program Director, ASE Focus on India, ASE-REAWARDS Study, Jan 2012

Program Director, ASE VISION study, Nov 2013

Program Director, ASE Values Study, Aug 2014

Program Director, ASE Focus on India, Dec 2012

ASE Foundation, Annual Appeal Task Force Member, 2011-2012  
ASE Foundation, Annual Appeal Task Force Member, 2012-2013  
Industry Round Table Committee Member, 2013-2017

European Association of Cardiovascular Imaging  
Judges Panel, Young Investigator Awards,  
Annual Scientific Sessions, 2012-201

### **Journal Reviewer**

Acta Cardiologica  
American Journal of Physiology  
American Journal of Cardiology  
Circulation  
Circulation: Cardiovascular Imaging  
Circulation Journal  
Cardiology  
European Heart Journal  
European Heart Journal: Cardiovascular Imaging  
Echocardiography  
Heart  
International Journal of Cardiology  
Journal of Engineering in Medicine  
Journal of the American College of Cardiology  
Journal of the American College of Cardiology: Cardiovascular Imaging  
Journal of the American Society of Echocardiography  
Journal of the European Association of Echocardiography  
Lancet  
Nature Reviews in Cardiology

### **Assistant Editor**

Journal of American College of Cardiology 2014  
Journal of American College of Cardiology: Cardiovascular Imaging 2010-11

### **Associate Editor**

Journal of American College of Cardiology: Cardiovascular Imaging 2012-ongoing

### **Section Editor**

Journal of American College of Cardiology 2015-ongoing

**Editorial Board Member**

Journal of American Society of Echocardiography  
Journal of European Association of Echocardiography  
Circulation Cardiovascular Imaging

European Heart Journal: Cardiovascular Imaging  
Recent Patents in Medical Imaging  
Heart  
Echo Research and Practice  
Indian Heart Journal  
Echocardiography Research and Practice  
Indian Journal of Echocardiography

**PROFESSIONAL DEVELOPMENT**

---

2015-ongoing	Program Director, Recent Advances in Echocardiography (ASE Endorsed program), Mumbai
2013-2014	Course Director, Icahn School of Medicine at Mount Sinai
2013	Complex Coronary Valvular and Vascular Cases Structural heart disease symposium, Course Co-director, Icahn School of Medicine at Mount Sinai, New York
2013	Echo New York, Multimodality Imaging New York Course Co-editor, Icahn School of Medicine at Mount Sinai, New York
2013	World Summit on Echocardiography, Chair New Delhi, India
2013	2013 Structural Heart/Complex Coronary Symposium Co-director, New York, NY
2011	International Summit on Imaging and Intervention in Cardiology (ISIIC) – Katowice, Poland
2001	Echocardiography Workshop Course Coordinator

## **RESEARCH**

---

05-004355 Blood Flow Sequence by Contrast  
Echocardiography PI

06-00876 Automated Functional Imaging vs  
Nuclear SPECT Imaging CI

06-008978 Echo Contrast Particle Imaging  
Velocimetry in Heart Failure Patients  
Undergoing Cardiac Resynchronization  
Therapy PI

07-004637 Sengupta/CR5/Left Ventricular  
Intracavitary Blood Flow PI

07-007098 Cardiopulmonary Peak O<sub>2</sub>  
Consumption in DCMP pt. and its  
Relation with LV Vortex Flow Time PI

07-007687 Contrast agent imaging M-mode flow  
patterns: Restrictive vs constrictive  
cardiac process in a waterfall  
quantitative display on an Ultrasound  
system CI

1100-05 Left ventricular Twist Dynamics in  
Constrictive Pericarditis PI

2186-04 A Phase I, Open-label, Pilot Study to  
Assess the Safety of  
Immunoabsorption Using the  
Fresenius Immunosorba® for Chronic  
Dilated Cardiomyopathy  
Other Study Staff

04/2008 -03/2010 CR5: Characterization of Left Ventricular Intracavitary Blood Flow Sequence by Echo Contrast Particle Imaging Velocimetry.  
Funded by Mayo Protocol.

A25303 Correlation of myocardial function with regional architecture PI

IRB 2375-04  
Assessment of left ventricular regional endocardial deformation by anatomical M-mode imaging PI

IRB 327-05  
Echocardiographic evaluation of patients with acute myocardial infarction following reperfusion PI

A19303 Characterization of acoustic spectra of contrast microbubbles for detection and quantitation of myocardial perfusion PI

A17801 Multiparametric computational Echocardiography CI

A192X01 Post ejection contraction: Pathophysiologic mechanism in chronic ischemia and role in hibernating myocardium CI

A280E01 Diagnosis of cardiac viability by functional ultrasound biplane stress echocardiography CI

17706-02 A Phase II Multicenter, parallel-group study of Sonovoue to evaluate the optimal dose, efficacy CI

2288-03 Echocardiographic substudy for the genetic modulation of left ventricular recovery CI

2288-03

Genetic modulation of LV recovery project CI

## RESEARCH GRANTS AWARDED

---

- 2015-2017 Non-invasive evaluation of cardiopulmonary diseases using transthoracic Doppler based assessment of lung Doppler signals (Echosense Ltd.) –Principal investigator (\$616,474)
- 2015-2017 Multidimensional wavelet analysis of Surface Electrocardiogram for Identifying Subclinical Myocardial Dysfunction in Patients at Risk for Coronary Artery Disease (Heart Test Labs.)  
-Principal Investigator (\$679,427)
- 05/2013 Assessment of LV flow vortex formation in patients undergoing transcatheter aortic valve implantation (Edward Healthcare)  
-Principal Investigator (\$20,500)
- 12/2012 ASE-VISION study foundation grant  
(GE Healthcare, Core Sound Imaging Award to ASE)  
-Principal Investigator (\$45,000)
- 08/2012 Adjunctive Renal Sympathetic Denervation to Modify Hypertension as Upstream Therapy in the Treatment of Atrial Fibrillation (HFIB).  
A prospective, multi-center, randomized study  
-Echo Core Lab Supervisor (\$60,000)
- 06/2012-06/2016 Forest Research Institute, Effects of Nebivolol on Left Ventricular and Left Atrial Morphodynamics in Adults with Hypertension and Isolated Diastolic  
-Principal Investigator (\$330,000)
- 01/2012 ASE-REWARD study (GE Healthcare Award to ASE)  
-Principal Investigator (\$40,000)
- 01/2008-12/2008 ASU/Mayo Seed Grant. Computational Echocardiography:

Cardiac Efficiency Analysis from Vector Velocity Fields.

-Co-Investigator (\$39,913)

07/2005-06/2006 American Society of Echocardiography. Left Ventricular Twist Dynamics in Constrictive Pericarditis.

-Principal Investigator (\$35,000)

2001 Foundation of Cardiovascular Sciences Travel Grant.

-Travel Grant (Rs. 40,000)

2001 Department of Science and Technology Grant, Government of India.

-Travel Grant (Rs. 40,000)

2001 Council of Scientific and Industrial Research Grant, Government of India.

-Travel Grant (Rs. 40,000)

## **PUBLICATIONS**

---

### **Abstracts/Conference Proceedings**

2013 Pandis D, Javier G, **Sengupta PP**. Atrial Fibrillation is associated with Marked Biventricular Dysfunction in Chronic Severe Degenerative Mitral Regurgitation, *J Am Soc Echocardiogr*. 2013; 26 (6): B17.

2013 shikawa K, Agüero J, **Sengupta PP** Comparison of Left Ventricular Deformation in Post-infarction Versus Chronic Ischemic Remodeling: Two-dimensional Strain Imaging Study in Swine Models of Acute and Chronic Total Coronary Artery Occlusions, *J Am Soc Echocardiogr*. 2013; 26 (6): B96.

2013 Agüero J, Ishikawa K, **Sengupta PP**. Incremental Value Right Ventricular Function Assessment Using Two-dimensional Strain in Experimental Swine Models of Chronic Pulmonary Hypertension, *J Am Soc Echocardiogr*. 2013; 26 (6): B89-90.

2013 Amaki M, Savino J, **Sengupta PP**. Comparison of Speckle Tracking Echocardiography and Magnetic Resonance Feature Tracking Derived Longitudinal Strain for Differentiating Constrictive Pericarditis from Restrictive Cardiomyopathy, *J Am Soc Echocardiogr*. 2013; 26 (6): B67. Featured Abstracts

- 2013 Amaki M, **Sengupta PP**, Sengupta S. Frequency, Determinants, and Outcome of Left Ventricular Dysfunction in Patients with Severe Mitral Stenosis: A Speckle Tracking Strain Echocardiography Study, The American Society of Echocardiography, J Am Soc Echocardiogr. 2013; 26 (6): B12. Featured Abstracts
- 2012 Caracciolo G, Abe H, Nakabo A, Pedrizzetti G, Narula J, **Sengupta PP**. Application of echo particle imaging velocimetry for guiding AV-interval optimization in Heart failure patients. JACC, Volume 59, Issue 13; March 2012. (Abstract).
- 2011 Caracciolo G, Sengupta SP, Abe H, Narula J, **Sengupta PP**. Assessment of t-wave morphology by signal processed body surface electrocardiographic potential mapping predicts subclinical left ventricular dysfunction in patients with systemic hypertension. Circulation, Volume 124, Issue 21 Supplement; November 2011. (Abstract)
- 2011 Goel R, Caracciolo G, Wilansky S, Scott L, Narula J, **Sengupta PP**. Resting left ventricular subendocardial function is attenuated in patients with neurocardiogenic syncope. JASE, Volume 24, Issue 5, Pages A1-A34, B1-B106, 473-592; May 2011. (Abstract).
- 2011 Thompson CD, Caracciolo G, Abe H, Pan C, Knoll M, Lombardo D, Narula J, **Sengupta PP**. Regional dispersion in timing of left ventricular segmental mechanics: A potential mechanism for false positive stress echocardiograms. JASE, Volume 24, Issue 5, pages A1-A34, B1-B106, 473-592; May 2011. (Abstract).
- 2011 Abe H, Caracciolo G, Kheradvar A, Narula J, **Sengupta PP**. Effects of preprogrammed atrio-ventricular time delay on the sequence of left ventricular intracavitary vortex formation. JASE, Volume 24, Issue 5, Pages A1-A34, B1-B106, 473-592; May 2011. (Abstract).
- 2011 Caracciolo G, Sengupta S, Abe H, Narula J, **Sengupta PP**. Myocardial stretch related repolarization and relaxation abnormalities of the left ventricle in systemic hypertension. JASE, Volume 24, Issue 5, Pages A1-A34, B1-B106, 473-592; May 2011.
- 2011 Abe H, Caracciolo G, Kheradvar A, Narula J, **Sengupta PP**. Determinants of left ventricular vortex ring circulation in remodeled hearts: Improved visualization of cardiac fluid-structure interactions by echo contrast particle imaging velocimetry.

J. Am. Coll. Cardiol. 57: E814; April 2011. (Abstract).

- 2010 Abe H, Caracciolo G, Khandheria B, Narula J, **Sengupta PP**. Left ventricular vortex ring formation mapped in human hearts by high resolution echo contrast particle imaging velocimetry: Relationships to myocardial deformation and dyssynchrony. *Circulation*, 122:A14603; 2010. (Abstract).
- 2010 Sengupta SP, Caracciolo G, Abe H, **Sengupta PP**. Early impairment of left ventricular function in young patients with hypothyroidism: new insights with 2-dimensional speckle tracking echocardiography. *JASE*, Volume 23, Issue 5, Page B83, May 2010. (Abstract).
- 2010 Caracciolo G, Beutler D, Abe H, Carerj S, Tajik JA, Khandheria BK, **Sengupta PP**. Assessment of left ventricular shear strains in constrictive pericarditis and restrictive cardiomyopathy. *JASE*, Volume 23, Issue 5, Page B14, May 2010. (Abstract)
- 2010 Abe H, Caracciolo G, Belohlavek M, Khandheria B, Narula J, Chandrasekaran K, **Sengupta PP**. Planar maps of left ventricular vorticity fields in human hearts: Novel insights with the use of high resolution echo contrast particle imaging velocimetry. *JACC*, Volume 55, issue 10A, 95.E895; March 2010. (Abstract)
- 2010 **Sengupta PP**. Planar maps of left ventricular vorticity fields in human hearts: Novel insights with the use of high resolution echo contrast particle imaging velocimetry. *JACC*, Volume 55, issue 10A, 95.E895; March 2010. (Abstract)
- 2010 aha S, Anderson P, Caracciolo G, Wilansky S, **Sengupta PP**. Characterization of regional heterogeneity in left atrial reservoir and conduit function by speckling tracking echocardiography. *JACC*, Volume 55, issue 10A, A66.E623; March 2010. (Abstract)
- 2009 o EJ, Scott RL, Steidley DE, Arabia F, Chandrasekaran K, Belohlavek M, Khandheria BK, **Sengupta PP**. Altered left ventricular mechanics in cardiac allografts: novel insights from 2-dimensional speckle strain echocardiography. *J Am Coll Cardiol* 2009 Mar; 53(10 Suppl 1):A179. (Abstract)
- 2009 Arredondo MH, Lipar L, Cho EJ, Ng D, Srivathsan K, Altemose GT, Wilansky S, Lester SJ, Chandrasekaran K, Khandheria BK, Scott LR, **Sengupta PP**. Improvement in tissue Doppler derived isovolumic contraction velocities, but not ejection phase velocities underlie reversal of remodeling following cardiac resynchronization therapy in both ischemic and nonischemic

heart failure. *J Am Coll Cardiol* 2009 Mar; 53(10 Suppl 1):A192.

- 2008        **Sengupta PP**, Khandheria BK, Tajik AJ. Is diastasis really a phase of hemodynamic stasis? *J Appl Physiol* 2008 Sep; 105(3):1016; author reply 1019. PMID:18800395. (Letter)
- 2008        **Sengupta PP**, Eleid M, Sundt TM III, Chandrasekran K, Tajik AJ, Khandheria BK. Regional variability of pericardial thickness influences left ventricular diastolic recoil mechanics in constrictive pericarditis. *J Am Soc Echocardiogr* 2008; 21:519.        (Abstract)
- 2008        **Sengupta PP**, Cho EJ, Beutler DS, Wilansky S, Mookadam F, Tajik AJ, Khandheria BK.        Left ventricular shortening, shear and wall thickening mechanics in cardiac amyloidosis *J Am Soc Echocardiogr* 2008; 22:558.
- 2008        amsripong P, Alharthi MS, Calleja AM, McMahan EM, **Sengupta PP**, Khandheria BK, Belohlavek M. Impact of adhesions in constrictive pericarditis on ventricular untwisting. *J Am Soc Echocardiogr* 2008; 21:524. (Abstract)
- 2008        Caracciolo G, Beutler DS, Mookadam F, Chandrasekaran K, Carerj S, Tajik AJ, Khandheria BK, **Sengupta PP**. Transmural heterogeneity of left ventricular mechanics in constrictive pericarditis and restrictive cardiomyopathy *J Am Soc Echocardiogr* 2008; 22:548. (Abstract)
- 2008        o EJ, Caracciolo G, Carerj S, Belohlavek M, Lester S, Chandrasekaran K, Khandheria BK, **Sengupta PP**. Standardization of region of interest for speckle tracking techniques improves the accuracy of two-dimensional strain measurements. *J Am Soc Echocardiogr* 2008; 22:590. (Abstract)
- 2008        o EJ, Jiamsripong P, Calleja AM, Alharthi MS, **Sengupta PP**, McMahan EM, Khandheria BK, Belohlavek M. Increased mitral annular tissue velocity during isovolumic relaxation period is a left ventricular compensatory response to decreased preload during acute moderate to severe right ventricular pressure overload. *J Am Soc Echocardiogr* 2008; 22:556. (Abstract)
- 2008        o EJ, Steidley DE, Chandrasekaran K, Khandheria BK, **Sengupta PP**. Left ventricular early diastolic vortex formation time and mitral annular recoil dynamics predict exercise capacity in patients with left ventricular systolic dysfunction. *J Am Soc Echocardiogr* 2008; 21:587. (Abstract)
- 2008        o EJ, Steidley DE, Chandrasekaran K, Khandheria BK, **Sengupta PP**. Role of tissue Doppler derived isovolumic velocities in predicting the exercise capacity for heart failure patients undergoing cardiopulmonary exercise testing. *J Am Soc Echocardiogr* 2008; 21:528. (Abstract)

- 2008 leid MF, Caracciolo G, Cho EJ, Scott RL, Steidley DE, Wilansky S, Arabia FA, Khandheria BK, **Sengupta PP**. Natural history of left ventricular mechanics in transplanted hearts: relationship of 2-dimensional strain patterns with blood-derived gene expression profiles at one year. J Am Soc Echocardiogr 2008; 22:544. (Abstract)
- 2008 Geyer HL, Fuller TJ, Beutler DS, Cho EJ, Caracciolo G, Chaliki H, Wilansky S, Tajik AJ, Khandheria B, **Sengupta PP**. Functional mapping of transmural strain gradients in pressure overloaded left ventricle by 2-dimensional speckle tracking strain imaging. J Am Soc Echocardiogr 2008; 22:581. (Abstract)
- 2007 Korinek J, **Sengupta PP**, Krishnamoorthy VK, Romero-Corral A, McMahon EM, Khandheria BK, Belohlavek M. Assessment of regional deformation predicts the extent of reflow in stunned and necrotic myocardium-two-dimensional strain and myocardial perfusion echocardiography study. J Am Soc Echocardiogr 2007; 20:622. (Abstract)
- 2007 Korinek J, **Sengupta PP**, Krishnamoorthy VK, Romero-Corral A, Dzeja PP, Terzic A, Khandheria BK, Belohlavek M. Two dimensional strain derived mechanoenergetic relationships of normal, ischemic and reperfused myocardium. J Am Soc Echocardiogr 2007; 20:598. (Abstract)
- 2007 Krishnamoorthy VK, Korinek J, Abhayaratna WP, Belohlavek M, Tajik JA, Seward JB, Khandheria BK, **Sengupta PP**. Longitudinal Left Ventricular Mechanics in Constrictive Pericarditis: Quantitative Assessment by Speckle-tracking Echocardiography J Am Soc Echocardiogr 2007 May; 20(5):578. (Abstract)
- 2007 **Sengupta PP**, Krishnamoorthy VK, Abhayaratna WP, Korinek J, Belohlavek M, Tajik JA, Seward JB, Khandheria BK. Myocardial Stretch in Early Systole is a Key Factor for the Synchrony of Left Ventricular Mechanical Activity in Vivo J Am Soc Echocardiogr 2007 May; 20(5):580. (Abstract)
- 2006 **Sengupta PP**, Khandheria BK, Korinek J, Jahangir A, Yoshifuku S, Milosevec I, Belohlavek M. Time resolved sequence of left ventricular flow redirection during isovolumic intervals of the cardiac cycle (Abstract 805-3). J Am Coll Cardiol 2006 Feb; 47(4 Suppl A):110A. (Abstract)
- 2006 Korinek J, **Sengupta PP**, Yoshifuku S, McMahon E, Romero-Corral A, Vitek J, Khandheria BK, Belohlavek M. Afterload decreases postsystolic shortening in acute progressive ischemia (Abstract P5-05). J Am Soc Echocardiogr 2006 May; 19(5):658. (Abstract)
- 2006 **Sengupta PP**, Yoshifuku S, Korinek J, Jahangir A, Khandheria BK, Belohlavek M. Effects of left

- ventricular untwisting on intraventricular flow: new insights from the use of high frame rate ultrasonic digital particle imaging velocimetry (Abstract 3167). *Circulation* 2006 Oct; 114(18 Suppl): II-670. (Abstract)
- 2005 **Sengupta PP**, Khandheria B, Yoshifuku S, Korinek J, Seward JB, Belohlavek M. Postystolic electromechanical events underlying active left ventricular diastolic relaxation (Abstract P3-13). *J Am Soc Echocardiogr* 2005 May; 18(5):532.
- 2005 **Sengupta PP**, Yoshifuku S, Korinek J, Jahangir A, Khandheria B, Belohlavek M. Mechanics of left ventricular untwisting are linked to post systolic circumferential deformation of left ventricular apex (Abstract 2784). *Circulation* 2005 Oct; 112(17 Suppl):II-588.(Abstract)
- 2005 **Sengupta PP**, Yoshifuku S, Korinek J, Khandheria BK, Belohlavek M. Identification of nonparallel helical myofiber geometry of the left ventricular wall by high resolution B-mode ultrasound (Abstract 1129). *European Journal of Echocardiography Supplements* 2005 Dec; 6(Suppl 1): S182-3. (Abstract)
- 2004 **Sengupta PP**, Chandrasekharan K, Prince D, Dyke R, Khandheria B. Routine implementation of biplane echocardiography in large volume clinical practice. *J Am Coll Cardiol* 2004 Mar 3; 43 (5 Suppl A):309A. (Abstract)
- 2004 Korinek J, **Sengupta PP**, Wang J, McMahon E, Abraham T, Belohlavek M. 2D strain - a novel doppler independent ultrasound method for quantification of regional deformation: comparison to sonomicrometry in a model of acute myocardial ischemia (Abstract P4-09). *Journal of the American Society of Echocardiography* 2004 May; 17(5):542. (Abstract)
- 2004 **Sengupta PP**, Wang J, Korinek J, Khandheria BK, Belohlavek M. Myocardial fiber direction and the transmural sequence of deformation influence genesis of spectral waveforms in Doppler myocardial imaging (Abstract Rb). *J Am Soc Echocardiogr* 2004 May; 17(5):494. (Abstract)
- 2004 **Sengupta PP**, Khandheria B, Korinek J, Wang J, Belohlavek M. Transmural mechanics of active left ventricular diastolic relaxation (Abstract 524). *Circulation* 2004 Oct; 110(17):III-111. (Abstract)
- 2003 **Sengupta PP**, Mohan JC, Mehta V, Arora R, Pandian NG, Khandheria BK. Early diastolic motion of mitral annulus for diagnosing constrictive pericarditis by tissue Doppler imaging: Accuracy and pitfalls. *Circulation* 2003 Oct 28; 108(17 Suppl):IV-660. (Abstract)
- 2002 Mehta V, **Sengupta PP**, Mohan JC, Kaul UA, Arora R. Time to onset of regional relaxation: A new strain index for quantifying myocardial dysfunction. *Indian Heart J* 2002; 548. (Abstract)

- 2002 Mehta V, **Sengupta PP**, Rastogi V, Mohan JC, Arora R. Is there a transmural strain rate gradient in normal myocardium? A study using high frequency transducer combined with high frame rate doppler myocardial imaging. Indian Heart J 2002; 54:546. (Abstract)
- 2002 Mohan JC, **Sengupta PP**, Arora R, Pandian NG. Study of global right ventricular function in mitral stenosis using a combined myocardial performance doppler index: Long term effects of mitral valvuloplasty . Circulation 2002; 104:H432. (Abstract)
- 2002 Mohan JC, **Sengupta PP**, Jain V, Nesser J, Arora R, Pandian N. Clinical and echocardiographic spectrum of mitral valve and papillary muscle injury as a complication related to PTMC with inoue balloon catheter. Experience from 6800 patients. J Am Coll Cardiol 2002; 39:391A. (Abstract)
- 2002 **Sengupta PP**, Mehta V, Rastogi V, Mohan JC, Arora R, et al. Quantitative assessment of longitudinal mitral annular motion in mitral stenosis by tissue velocity imaging: A new index for estimating the functional outcome following percutaneous mitral commissurotomy. Indian Heart J 2002; 54:512. (Abstract)
- 2002 **Sengupta PP**, Mehta V, Rastogi V, Mohan JC, Arora R, Khandheria B. Regional asynchrony and asynergy are markers of myocardial functional heterogeneity in myopathic ventricles with preserved systolic function: A tissue velocity, tracking, strain and strain rate imaging study. Indian Heart J 2002; 54:585-7. (Abstract)
- 2002 **Sengupta PP**, Mehta V, Rastogi V, Mohan JC, Arora R. Quantification of regional left ventricular longitudinal function by ultrasound-based strain and strain rate imaging in healthy subjects. Indian Heart J 2002; 54:547. (Abstract)
- 2002 **Sengupta PP**, Mehta V, Rastogi V, Mohan JC, Arora R. Assessment of regional variations in segmental motion and deformation mechanics of right ventricle by velocity, strain, strain rate imaging. Indian Heart J 2002; 54:514-5. (Abstract)
- 2002 **Sengupta PP**, Mehta V, Rastogi V, Mohan JC, Arora R. Quantitative analysis of pre and post-ejection right and left ventricular motion in healthy subjects. Indian Heart J 2002; 54:483-4. (Abstract)
- 2002 **Sengupta PP**, Mehta V, Rastogi V, Mohan JC, Arora R. Right ventricular dysfunctioning patients with constrictive pericarditis: A tissue velocity imaging study. Indian Heart J 2002; 54:551. (Abstract)
- 2002 **Sengupta PP**, Mehta V, Yusuf J, Mohan JC, Arora R, Kaul UA, Trehan VK, Khandheria BK. Regional left

- ventricular function in rheumatic mitral stenosis: An ultrasound based strain and strain rate imaging study. *Indian Heart J* 2002; 54:546. (Abstract)
- 2002 **Sengupta PP**, Mohan JC, Jain V, Arora R, Nesser J, Pandian NG. Delayed post-systolic left and right ventricular contraction in patients with non-ischemic dilated cardiomyopathy: implications of tissue velocity studies to biventricular pacing. *J Am soc Echocardiogr* 2002; 5:526. (Abstract)
- 2002 **Sengupta PP**, Mohan JC, Mahesh U, Jain V, Arora R, Pandian NG. Quantitative geometric, morphologic and functional analysis of non-compaction of the left ventricle in adults and comparison to idiopathic dilated cardiomyopathy. *J Am Soc Echocardiogr* 2002; 15:525. (Abstract)
- 2002 **Sengupta PP**, Mukherjee S, Mehta V, Rastogi V, Mohan JC, Arora R. Effects of inferior vena cava occlusion on tissue doppler velocities: Are they really load independent?. *Indian Heart J* 2002; 54:483-4. (Abstract)
- 2001 Mohan JC, **Sengupta PP**, Arora R, Patel A, Nesser J, Pandian N. Atrioventricular compliance at rest and during dobutamine stress in young patients with mitral stenosis. Potential implications *J Am Soc Echocardiogr* 2001; 14:422. (Abstract)
- 2001 **Sengupta PP**, Mohan JC, Arora R, Nesser J, Pandian N. Right and left ventricular longitudinal axis annular tissue velocities do not aid in the diagnosis of constrictive pericarditis. *J Am Soc Echocardiogr* 2001; 14:458. (Abstract)
- 1999 Mishra S, **Sengupta PP**. Demographic profile and health care utilization in patients of shunt lesions with severe pulmonary artery hypertension. *Indian Heart J* 1999; 51:652. (Abstract)
- 1999 Mishra S, **Sengupta PP**. Occurrence of concomitant coronary artery disease in patients of restrictive heart disease. *Indian Heart J* 1999; 51:700. (Abstract)
- 1999 Rammamoorthy S, Sharma S, Raju, **Sengupta PP**. Is sellar's grading valid for assessing severity of acute mitral regurgitation?. *Indian Heart J* 1999; 51:736. (Abstract)
- 1999 **Sengupta PP**, Bahl VK, Satpathi G, Narang R, Manchanda SC. Serological evidence of chlamydia pneumoniae infection and Takayasu's arteritis: Is there a link for the arterial disease. *Indian Heart J* 1999(739) Epub 51. (Abstract)
- 1999 **Sengupta PP**, Saxena A, Kumar R. Correlates of variations in pulmonary perfusion in patients of cyanotic congenital heart disease with reduced pulmonary blood flow. *Indian Heart J* 1999; 51:628. (Abstract)

- 1999           **Sengupta PP**, Saxena A, Kumar R. Pulmonary ventilation and ventilation perfusion imbalance in patients of cyanotic congenital heart disease with reduced pulmonary blood flow. *Indian Heart J* 1999; 51:628. (Abstract)
- 1998           Rammamoothy S, **Sengupta PP**, Manchanda SC. Comparison of absolute mitral valve area and indexed mitral valve area as indices for severity of mitral stenosis. *Indian Heart J* 1998; 50:641. (Abstract)
- 1998           **Sengupta PP**, Saxena A, Kumar R, Manchanda SC. Lung perfusion scintigraphy in patients of cyanotic congenital heart disease with reduced pulmonary blood flow: a preliminary study. *Indian Heart J* 1998; 50:664. (Abstract)
- 1998           **Sengupta PP**, Saxena A, Rajani M, Manchanda SC. Choice of catheter for crossing the aortic valve in relation to angiographic morphology of the valve in congenital aortic stenosis. *Indian Heart J* 1998; 50:638. (Abstract)
- 1997           Mohan JC, **Sengupta PP**, Arora R. Acute effects of percutaneous transvenous mitral commissurotomy (PTMC) on global right ventricular function in patients with mitral stenosis. *Indian Heart J* 1997; 49:628. (Abstract)
- 1997           Mohan JC, **Sengupta PP**, Arora R. Left ventricular mid-wall dynamics in mitral stenosis before and after transvenous mitral commissurotomy. *Indian Heart J* 1997; 49:632. (Abstract)
- 1997           o H, **Sengupta PP**, Sethi KK. Longer-term follow-up of atrial and ventricular modes of pacing for sinus node dysfunction without associated tachyarrhythmias. *Indian Heart J* 1997; 49:611. (Abstract)
- 1997           ethi KK, Dhal A, Sharma M, Salwan R, **Sengupta PP**. Long term low amplitude pacing using steroid eluting leads. *Pacing Clin Electrophysiol* 1997; 20:2332. (Abstract)
- 1995           lkar RG, **Sengupta PP**, Salkar HR, Jalgaonkar PD. High dose dobutamine stress echocardiography. Some initial experiences. *J Association Physicians of India* 1995; 43:847. (Abstract)
- 1995           **Sengupta PP**, Salkar RG, Salkar HR, Jalgaonkar PD. Colour coded and signal averaged two dimensional echocardiography for differentiating acute and healed myocardial infarction. *J Association Physicians of India* 1995; 43:849. (Abstract)

• **Peer Reviewed Articles**

- 2017            The Many Dimensions of Diastolic Function: A Curse or a Blessing? **Sengupta PP**, Marwick TH. *JACC Cardiovasc Imaging*. 2017 Jul 13. pii: S1936-878X(17)30563-6. doi: 10.1016/j.jcmg.2017.05.015. [Epub ahead of print] No abstract available. PMID: 28734924
- 2017            Artificial Intelligence-Based Assessment of Left Ventricular Filling Pressures From 2-Dimensional Cardiac Ultrasound Images. Salem Omar AM, Shameer K, Narula S, Abdel Rahman MA, Rifaie O, Narula J, Dudley JT, **Sengupta PP**. *JACC Cardiovasc Imaging*. 2017 Jul 13. pii: S1936-878X(17)30468-0. doi: 10.1016/j.jcmg.2017.05.003. [Epub ahead of print] No abstract available. PMID: 28734920
- 2017            3-Dimensional-Printed Models for TAVR Planning: Why Guess When You Can See? Alkhouli M, **Sengupta PP**. *JACC Cardiovasc Imaging*. 2017 Jul;10(7):732-734. doi: 10.1016/j.jcmg.2017.05.002. No abstract available. PMID: 28683948
- 2017            Is TAVR Ready for the Global Aging Population? Bergmann T, **Sengupta PP**, Narula J. *Glob Heart*. 2017 Apr 19. pii: S2211-8160(17)30018-2. doi: 10.1016/j.gheart.2017.02.002. [Epub ahead of print] Review. PMID: 28433492
- 2017            Toward Precision in Balloon-Expandable TAVR: Oversizing Tight Versus Just Right. Alkhouli M, **Sengupta P**, Badhwar V. *JACC Cardiovasc Interv*. 2017 Apr 24;10(8):821-823. doi: 10.1016/j.jcin.2017.03.003. No abstract available. PMID: 28427599
- 2017            Reply: Deep Learning With Unsupervised Feature in Echocardiographic Imaging. Narula S, Shameer K, Salem Omar AM, Dudley JT, **Sengupta PP**. *J Am Coll Cardiol*. 2017 Apr 25;69(16):2101-2102. doi: 10.1016/j.jacc.2017.01.062. No abstract available. PMID: 28427589
- 2017            New Cardiac Imaging Algorithms to Diagnose Constrictive Pericarditis Versus Restrictive Cardiomyopathy. Mahmoud A, Bansal M, **Sengupta PP**. *Curr Cardiol Rep*. 2017 May;19(5):43. doi: 10.1007/s11886-017-0851-0. Review. PMID: 28405937
- 2017            Precision Phenotyping in Heart Failure and Pattern Clustering of Ultrasound Data for the Assessment of Diastolic Dysfunction. Omar AM, Narula S, Abdel Rahman MA, Pedrizzetti G, Raslan H, Rifaie O, Narula J, **Sengupta PP**. *JACC Cardiovasc Imaging*. 2017 Jan 11. pii: S1936-878X(16)30979-2. doi: 10.1016/j.jcmg.2016.10.012. [Epub ahead of print] PMID: 28109936

- 2017 Post-Extrasystolic Transaortic Valve Gradients Differentiate "Pseudo" and "True" Low-Flow, Low-Gradient Severe AS During Dobutamine Stress Echocardiography. Wiley BM, Pollack A, Vaidya AS, Agarwal SK, **Sengupta PP**, Chaudhry FA. JACC Cardiovasc Imaging. 2017 Jan 11. pii: S1936-878X(16)30968-8. doi: 10.1016/j.jcmg.2016.09.024. [Epub ahead of print] No abstract available. PMID: 28109925
- 2017 TAVR-Related Complications: Why Did We Forget the Design of a Normal Aortic Valve?  
**Sengupta PP**, Narula J. JACC Cardiovasc Imaging. 2017 Jan;10(1):100-103. doi: 10.1016/j.jcmg.2016.11.013. No abstract available. PMID: 28057219
- 2017 Gestational changes in left ventricular myocardial contractile function: new insights from two-dimensional speckle tracking echocardiography. Sengupta SP, Bansal M, Hofstra L, **Sengupta PP**, Narula J. Int J Cardiovasc Imaging. 2017 Jan;33(1):69-82. doi: 10.1007/s10554-016-0977-y. Epub 2016 Sep 14. PMID: 27628530
- 2017 Dynamic Changes in LV Radius as a Marker of Septal Configuration for Predicting RV Failure Following LVAD Implantation. Park CS, Akhabue E, Bansal M, Marks J, Salem Omar AM, Pinney SP, Anyanwu A, Chaudhry F, Narula J, **Sengupta PP**. JACC Cardiovasc Imaging. 2017 May;10(5):598-599. doi: 10.1016/j.jcmg.2016.04.002. Epub 2016 Jul 13. No abstract available. PMID: 27424242
- 2016 Bhavnani SP, Narula J, **Sengupta PP**. Mobile technology and the digitization of healthcare. Eur Heart J. 2016 Feb 11. pii: ehv770. [Epub ahead of print] Review. PubMed PMID: 26873093.
- 2016 Wiley BM, Kovacic JC, Basnet S, Makoto A, Chaudhry FA, Kini AS, Sharma SK, **Sengupta PP**. Intraprocedural TAVR Annulus Sizing Using 3D TEE and the "Turnaround Rule". JACC Cardiovasc Imaging. 2016 Feb;9(2):213-5. doi: 10.1016/j.jcmg.2015.02.018. Epub 2015 Jun 17. PubMed PMID: 26093927.
- 2016 Dulgheru R, Pibarot P, **Sengupta PP**, Piérard LA, Rosenhek R, Magne J, Donal E, Bernard A, Fattouch K, Cosyns B, Vannan M, Gillam L, Lancellotti P. Multimodality Imaging Strategies for the Assessment of Aortic Stenosis: Viewpoint of the Heart Valve Clinic International Database (HAVEC) Group. Circ Cardiovasc Imaging. 2016 Feb;9(2):e004352. doi: 10.1161/CIRCIMAGING.115.004352. PubMed PMID: 26863917.
- 2016 Papolos A, Narula J, Bavishi C, Chaudhry FA, **Sengupta PP**. U.S. Hospital Use of Echocardiography: Insights From the Nationwide Inpatient Sample. J Am Coll Cardiol. 2016 Feb 9;67(5):502-11. doi: 10.1016/j.jacc.2015.10.090. PubMed PMID: 26846948.

- 2015 Weigand J, Nielsen JC, **Sengupta PP**, Sanz J, Srivastava S, Uppu S. Feature Tracking-Derived Peak Systolic Strain Compared to Late Gadolinium Enhancement in Troponin-Positive Myocarditis: A Case-Control Study. *Pediatr Cardiol.* 2015 Dec 2015 [Epub ahead of print] PubMed PMID: 26717912.
- 2015 Claus P, Omar AM, Pedrizzetti G, **Sengupta PP**, Nagel E. Tissue Tracking Technology for Assessing Cardiac Mechanics: Principles, Normal Values, and Clinical Applications. *JACC Cardiovasc Imaging.* 2015 Dec;8(12):1444-60. doi: 10.1016/j.jcmg.2015.11.001. Review. PubMed PMID: 26699113.
- 2015 Oh JK, Little SH, Abdelmoneim SS, Reardon MJ, Kleiman NS, Lin G, Bach D, Gillam L, Kar B, Coselli J, **Sengupta PP**, Grewal K, Chang J, Chang Y, Boulware M, Adams DH, Popma JJ; CoreValve U.S. Pivotal Trial Clinical Investigators. Regression of Paravalvular Aortic Regurgitation and Remodeling of Self Expanding Transcatheter Aortic Valve: An Observation From the CoreValve U.S. Pivotal Trial. *JACC Cardiovasc Imaging.* 2015 Dec;8(12):1364-75. doi:10.1016/j.jcmg.2015.07.012. Epub 2015 Oct 26. PubMed PMID: 26508386.
- 2015 Nagalingam M, Thirumalesh SR, Kalleshmurthy T, Niharika N, Balamurugan V, Shome R, **Sengupta PP**, Shome BR, Prabhudas K, Rahman H. Comparative evaluation of recombinant LigB protein and heat-killed antigen-based latex agglutination test with microscopic agglutination test for diagnosis of bovine leptospirosis. *Trop Anim Health Prod.* 2015 Oct;47(7):1329-35. doi: 10.1007/s11250-015-0867-7.
- 2015 Oh JK, Little SH, Abdelmoneim SS, Reardon MJ, Kleiman NS, Lin G, Bach D, Gillam L, Kar B, Coselli J, **Sengupta PP**, Grewal K, Chang J, Chang Y, Boulware M, Adams DH, Popma JJ; CoreValve U.S. Pivotal Trial Clinical Investigators. Regression of Paravalvular Aortic Regurgitation and Remodeling of Self-Expanding Transcatheter Aortic Valve: An Observation From the CoreValve U.S. Pivotal Trial. *JACC Cardiovasc Imaging.* 2015 Oct 16. pii: S1936-878X(15)00684-1
- 2015 Knackstedt C, Bekkers SC, Schummers G, Schreckenber M, Muraru D, Badano LP, Franke A, Bavishi C, Omar AM, **Sengupta PP**. Fully Automated Versus Standard Tracking of Left Ventricular Ejection Fraction and Longitudinal Strain: The FAST-EFs Multicenter Study. *J Am Coll Cardiol.* 2015 Sep 29;66(13):1456-66. doi: 10.1016/j.jacc.2015.07.052. PubMed PMID: 26403342.
- 2015 Bansal M, **Sengupta PP**. Setting global standards in adult echocardiography: Where are we? *Indian Heart J.* 2015 Jul-Aug;67(4):298-301. doi: 10.1016/j.ihj.2015.07.020. Epub 2015 Aug 21. Review. PubMed PMID: 26304560; PubMed Central PMCID: PMC4561797.
- 2015 Omar AM, Vallabhajosyula S, **Sengupta PP**. Left ventricular twist and torsion: research observations

- and clinical applications. *Circ Cardiovasc Imaging*. 2015 Jun;8(6). pii: e003029. doi: 10.1161/CIRCIMAGING.115.003029. Erratum in: *Circ Cardiovasc Imaging*. 2015 Aug;8(8):e000009. PubMed PMID: 25991575.
- 2015 Pedrizzetti G, **Sengupta PP**. Vortex imaging: new information gain from tracking cardiac energy loss. *Eur Heart J Cardiovasc Imaging*. 2015 Jul;16(7):719-20.
- 2015 Byrd BF 3rd, Abraham TP, Buxton DB, Coletta AV, Cooper JH, Douglas PS, Gillam LD, Goldstein SA, Graf TR, Horton KD, Isenberg AA, Klein AL, Kreeger J, Martin RP, Nedza SM, Navathe A, Pellikka PA, Picard MH, Pilotte JC, Ryan TJ, Rychik J, **Sengupta PP**, Thomas JD, Tucker L, Wallace W, Ward RP, Weissman NJ, Wiener DH, Woodruff S. A Summary of the American Society of Echocardiography Foundation Value-Based Healthcare: Summit 2014: The Role of Cardiovascular Ultrasound in the New Paradigm. *J Am Soc Echocardiogr*. 2015 Jul;28(7):755-69.
- 2015 Wiley BM, Kovacic JC, Basnet S, Makoto A, Chaudhry FA, Kini AS, Sharma SK, **Sengupta PP**. Intraprocedural TAVR Annulus Sizing Using 3D TEE and the "Turnaround Rule". *JACC Cardiovasc Imaging*. 2015 Jun 11. pii: S1936-878X(15)00259-4.
- 2015 Farooqi KM, **Sengupta PP**. Echocardiography and three-dimensional printing: sound ideas to touch a heart. *J Am Soc Echocardiogr*. 2015 Apr;28(4):398-403.
- 2015 **Sengupta PP**, Wiley BM, Basnet S, Rajamanickman A, Kovacic JC, Fischer GW, Kini AS, Sharma SK. Transthoracic echocardiography guidance for TAVR under monitored anesthesia care. *JACC Cardiovasc Imaging*. 2015 Mar;8(3):379-80. doi: 10.1016/j.jcmg.2015.01.002. PubMed PMID: 25772842.
- 2015 Donal E, Lancellotti P, **Sengupta PP**, Galli E. Reply: Valvular disease, myocardial mechanics, and valve guidelines. *JACC Cardiovasc Imaging*. 2015 Mar;8(3):383. doi: 10.1016/j.jcmg.2014.12.010. PubMed PMID: 25772844.
- 2015 **Sengupta PP**, Chandrashekhar Y, Narula J. The Symphony, the Ensemble, and the Interventional Imager.... *JACC Cardiovasc Imaging*. 2015 Mar;8(3):384-7. doi: 10.1016/j.jcmg.2015.01.010. PubMed PMID: 25772845.
- 2015 Sengupta SP, Bansal M, **Sengupta PP**. Authors' reply. *J Am Soc Echocardiogr*. 2015 Mar;28(3):375-6. doi: 10.1016/j.echo.2014.12.001. Epub 2015 Jan 7. PubMed PMID: 25577183.
- 2015 Pedrizzetti G, **Sengupta PP**. Vortex imaging: new information gain from tracking cardiac energy loss. *Eur Heart J Cardiovasc Imaging*. 2015 Jul;16(7):719-20. doi: 10.1093/ehjci/jev070. Epub 2015 Apr 2. PubMed PMID: 25839836.

- 2015 Voigt JU, Pedrizzetti G, Lysyansky P, Marwick TH, Houle H, Baumann R, Pedri S, Ito Y, Abe Y, Metz S, Song JH, Hamilton J, **Sengupta PP**, Koliass TJ, d'Hooge J, Aurigemma GP, Thomas JD, Badano LP. Definitions for a common standard for 2D speckle tracking echocardiography: consensus document of the EACVI/ASE/Industry Task Force to standardize deformation imaging. *J Am Soc Echocardiogr*. 2015 Feb;28(2):183-93. doi: 10.1016/j.echo.2014.11.003. PubMed PMID: 25623220.
- 2015 **Sengupta PP**, Narula J. Keeping off the wrong track on the right side: planning for transcatheter caval valve implantation. *JACC Cardiovasc Imaging*. 2015 Feb;8(2):232-4. doi: 10.1016/j.jcmg.2014.12.007. PubMed PMID: 25677897.
- 2015 Rudramurthy GR, **Sengupta PP**, Metilda B, Balamurugan V, Prabhudas K, Rahman H. Development of an enzyme immunoassay using recombinant invariant surface glycoprotein (rISG) 75 for serodiagnosis of bovine trypanosomiasis. *Indian J Exp Biol*. 2015 Jan;53(1):7-15. PubMed PMID: 25675706.
- 2015 Magne J, Pibarot P, **Sengupta PP**, Donal E, Rosenhek R, Lancellotti P. Pulmonary hypertension in valvular disease: a comprehensive review on pathophysiology to therapy from the HAVEC Group. *JACC Cardiovasc Imaging*. 2015 Jan;8(1):83-99. doi: 10.1016/j.jcmg.2014.12.003. PubMed PMID: 25592699.
- 2014 Voigt JU, Pedrizzetti G, Lysyansky P, Marwick TH, Houle H, Baumann R, Pedri S, Ito Y, Abe Y, Metz S, Song JH, Hamilton J, **Sengupta PP**, Koliass TJ, d'Hooge J, Aurigemma GP, Thomas JD, Badano LP. Definitions for a common standard for 2D speckle tracking echocardiography: consensus document of the EACVI/ASE/Industry Task Force to standardize deformation imaging. *Eur Heart J Cardiovasc Imaging*. 2015 Jan;16(1):1-11. doi: 10.1093/ehjci/jeu184. Epub 2014 Dec 18. PubMed PMID: 25525063.
- 2014 Galli E, Lancellotti P, **Sengupta PP**, Donal E. LV mechanics in mitral and aortic valve diseases: value of functional assessment beyond ejection fraction. *JACC Cardiovasc Imaging*. 2014 Nov;7(11):1151-66. doi: 10.1016/j.jcmg.2014.07.015. Epub 2014 Nov 10. PubMed PMID: 25459597.
- 2014 Bansal M, Singh S, Maheshwari P, Adams D, McCulloch ML, Dada T, Sengupta SP, Kasliwal RR, Pellikka PA, **Sengupta PP**; VISION-in-Tele-Echo Study Investigators. Value of interactive scanning for improving the outcome of new-learners in transcontinental tele-echocardiography (VISION-in-Tele Echo) study. *J Am Soc Echocardiogr*. 2015 Jan;28(1):75-87. doi: 10.1016/j.echo.2014.09.001. Epub 2014 Oct 8. PubMed PMID: 25306222.
- 2014 **Sengupta PP**, Narula J, Chandrashekar Y. The dynamic vortex of a beating heart: wring out the old and ring in the new! *J Am Coll Cardiol*. 2014 Oct 21;64(16):1722-4. doi: 10.1016/j.jacc.2014.07.975. PubMed PMID: 25323261.

- 2014 Di Maria MV, Caracciolo G, Prashker S, **Sengupta PP**, Banerjee A. Left ventricular rotational mechanics before and after exercise in children. *J Am Soc Echocardiogr.* 2014 Dec;27(12):1336-43. doi: 10.1016/j.echo.2014.07.016. Epub 2014 Sep 7. PubMed PMID: 25204858.
- 2014 **Sengupta PP**, Rudramurthy GR, Ligi M, Roy M, Balamurugan V, Krishnamoorthy P, Nagalingam M, Singh L, Rahman H. Sero-diagnosis of surra exploiting recombinant VSG antigen based ELISA for surveillance. *Vet Parasitol.* 2014 Oct 15;205(3-4):490-8. doi: 10.1016/j.vetpar.2014.08.012. Epub 2014 Sep 6. PubMed PMID: 25269987.
- 2014 Amaki M, Savino J, Ain DL, Sanz J, Pedrizzetti G, Kulkarni H, Narula J, **Sengupta PP**. Diagnostic concordance of echocardiography and cardiac magnetic resonance-based tissue tracking for differentiating constrictive pericarditis from restrictive cardiomyopathy. *Circ Cardiovasc Imaging.* 2014 Sep;7(5):819-27. doi: 10.1161/CIRCIMAGING.114.002103. Epub 2014 Aug 8. PubMed PMID: 25107553.
- 2014 Boman K, Olofsson M, Berggren P, **Sengupta PP**, Narula J. Robot-assisted remote echocardiographic examination and teleconsultation: a randomized comparison of time to diagnosis with standard of care referral approach. *JACC Cardiovasc Imaging.* 2014 Aug;7(8):799-803. doi: 10.1016/j.jcmg.2014.05.006. PubMed PMID: 25124011.
- 2014 **Sengupta PP**, Narula N, Modesto K, Doukky R, Doherty S, Soble J, Narula J. Feasibility of intercity and trans-Atlantic telerobotic remote ultrasound: assessment facilitated by a nondedicated bandwidth connection. *JACC Cardiovasc Imaging.* 2014 Aug;7(8):804-9. doi: 10.1016/j.jcmg.2014.03.014. PubMed PMID: 25124012.
- 2014 Agüero J, Ishikawa K, Hadri L, Santos-Gallego C, Fish K, Hammoudi N, Chaanine A, Torquato S, Naim C, Ibanez B, Pereda D, García-Alvarez A, Fuster V, **Sengupta PP**, Leopold JA, Hajjar RJ. Characterization of right ventricular remodeling and failure in a chronic pulmonary hypertension model. *Am J Physiol Heart Circ Physiol.* 2014 Oct 15;307(8):H1204-15. doi: 10.1152/ajpheart.00246.2014. Epub 2014 Aug 22. PubMed PMID: 25158063; PubMed Central PMCID: PMC4200337.
- 2014 Pedrizzetti G, Sengupta S, Caracciolo G, Park CS, Amaki M, Goliash G, Narula J, **Sengupta PP**. Three-dimensional principal strain analysis for characterizing subclinical changes in left ventricular function. *J Am Soc Echocardiogr.* 2014 Oct;27(10):1041-1050.e1. doi: 10.1016/j.echo.2014.05.014. Epub 2014 Jul 4. PubMed PMID: 24998517.
- 2014 Modesto K, **Sengupta PP**. Myocardial mechanics in cardiomyopathies. *Prog Cardiovasc Dis.* 2014

Jul-Aug;57(1):111-24. doi: 10.1016/j.pcad.2014.03.003. Epub 2014 Mar 11. Review. PubMed PMID: 25081406.

- 2014 Sengupta S, Amaki M, Washimkar S, Hofstra L, Narula J, **Sengupta PP**. Effects of Percutaneous Ballon Mitral Valvuloplasty on Left Ventricular Deformation in Patients with Isolated Severe Mitral Stenosis: A Speckle-Tracking Strain Echocardiography Study. *J Am Soc Echocardiogr*. 2014 (in press)
- 2014 Pandis D, **Sengupta PP**, Castilo J, Caracciolo G, Fischer G, Narula J, Anyanwu A, Adams D. Assessment of Longitudinal Myocardial Mechanics in Patients with Degenerative Mitral Valve Regurgitation Predicts Post-Operative Worsening of LV Systolic Function. *J Am Soc Echocardiogr*. 2014 (in press)
- 2014 Modesto K, **Sengupta PP**. Myocardial mechanics in cardiomyopathies. *Prog Cardiovasc Dis* 2014 (in press)
- 2014 Mittnacht AJ, **Sengupta PP**. The dynamics of mitral valve function: lessons to be learned from three dimensional echocardiography. *J Cardiothorac Vasc Anesth*. 2014 Feb;28(1):8-10.
- 2014 **Sengupta PP**, Narula J. A la mode atrioventricular mechanical coupling. *JACC Cardiovasc Imaging*. 2014 Jan;7(1):109-11.
- 2013 **Sengupta PP**. Intelligent platforms for disease assessment: Novel approaches in functional echocardiography. *JACC Cardiovasc Imaging*. 2013 Nov;6(11):1206-11.
- 2013 Abe H, Caracciolo G, Kheradvar A, Pedrizzetti G, Khandheria BK, Narula J, **Sengupta PP**. Contrast echocardiography for assessing left ventricular vortex strength in heart failure: a prospective cohort study. *Eur Heart J Cardiovasc Imaging*. 2013 Nov;14(11):1049-60.
- 2013 Goel R, Caracciolo G, Wilansky S, Scott L, Narula J, **Sengupta PP** Effect of Head-Up Tilt-Table Testing on Left Ventricular Longitudinal Strain in Patients With Neurocardiogenic Syncope 2013 *Am J Cardiol*. 2013 OCT 15:112(8):1252-7.
- 2013 **Sengupta PP**, Kramer, CM, Narula J. Cardiac resynchronization: the flow of activation sequence. *JACC Cardiovasc Imaging*. 2013 Aug;6(8):924-6.
- 2013 **Sengupta PP**, Krammer CP, Narula J. Cardiac resynchronization: flow of cardiac activation. *JACC Cardiovasc Imaging*. 2013 Aug;6(8):324-6(11):1206-11.
- 2013 Pawale A, Kontorovich A, Kaushik R, **Sengupta P**, Sanz J, Orozco-Sevilla V, McGuire A, Thaker H, Stelzer P. Valve-sparing aortic root replacement for rapidly growing multiple sinus of Valsalva pseudoaneurysms in a case of Behçet's-like aortitis. *Ann Thorac Surg*. 2013 Jul;96(1):e23.

- 2013 Goliash G, Goscinska-Bis K, Caracciolo G, Nakabo A, Smolka G, Pedrizzetti G, Narula J, **Sengupta PP**. CRT Improves LV Filling Dynamics: Insights From Echocardiographic Particle Imaging Velocimetry. *JACC Cardiovasc Imaging*. 2013 Jun;6(6):704-13.
- 2013 **Sengupta PP**. Method for imaging intracavitary blood flow patterns. *J Acoust Soc Am*. 2013 Jun;133(6):4360.
- 2013 **Sengupta PP**, Narula J. RV form and function: a piston pump, vortex impeller, or hydraulic ram? *JACC Cardiovasc Imaging*. 2013 May;6(5):636-9. doi:
- 2013 Staron A, Bansal M, Kalakoti P, Nakabo A, Gasior Z, Pysz P, Wita K, Jasinski M, **Sengupta PP**. Speckle tracking echocardiography derived 2-dimensional myocardial strain predicts left ventricular function and mass regression in aortic stenosis patients undergoing aortic valve replacement. *Int J Cardiovasc Imaging*. 2013 Apr;29(4):797-808. doi: 10.1007/s10554-012-0160-z.
- 2013 Bansal M, **Sengupta PP**. Longitudinal and circumferential strain in patients with regional LV dysfunction. *Curr Cardiol Rep*. 2013 Mar;15(3):339.
- 2013 Singh S, Bansal M, Maheshwari P, Adams D, Sengupta SP, Price R, Dantin L, Smith M, Kasliwal RR, Pellikka PA, Thomas JD, Narula J, **Sengupta PP**; ASE-REWARD Study Investigators. American Society of Echocardiography: Remote Echocardiography with Web-Based Assessments for Referrals at a Distance (ASE-REWARD) Study. *J Am Soc Echocardiogr*. 2013 Mar;26(3):221-33.
- 2013 Strauss KA, DuBiner L, Simon M, Zaragoza M, **Sengupta PP**, Li P, Narula N, Dreike S, Platt J, Procaccio V, Ortiz-Gonzalez XR, Puffenberger EG, Kelley RI, Morton DH, Narula J, Wallace DC. Severity of cardiomyopathy associated with adenine nucleotide translocator-1 deficiency correlates with mtDNA haplogroup. *Proc Natl Acad Sci U S A*. 2013 Feb 26;110(9):3453-8.
- 2013 Kasel AM, Cassese S, Bleiziffer S, Amaki M, Hahn RT, Kastrati A, **Sengupta PP**. Standardized imaging for aortic annular sizing: implications for transcatheter valve selection. *JACC Cardiovasc Imaging*. 2013 Feb;6(2):249-62.
- 2013 Sengupta SP, Caracciolo G, Thompson C, Abe H, **Sengupta PP**. Early impairment of left ventricular function in patients with systemic hypertension: New insights with 2-dimensional speckle tracking echocardiography. *Indian Heart J*. 2013 Jan-Feb;65(1):48-52.
- 2013 Caracciolo G, Goliash G, Amaki M, Bansal M, Nakabo A, Abe H, Scott L, Lipar L, Pedrizzetti G, Narula J, **Sengupta PP**. Myocardial stretch in early systole is a key determinant of the synchrony

- of left ventricular mechanical activity in vivo. *Cir J.* 2013;77(10):2526-34.
- 2013 Singh, S., Nagra, A., Maheshwari, P., Panwar, R., Hecht, H., Fukumoto, T., Bansal, M., Panthagani, D., Lammertin, G., Kasliwal, R., Mishra, H., Hofstra, L., Singh, M.P., Fuster, V., **Sengupta PP.**, Narula, J. Rapid screening for subclinical atherosclerosis by carotid ultrasound examination: The happy (Heart Attack Prevention Program for You) substudy *Global Heart* 2013: 8, 83-89.
- 2012 Sengupta SP, Jaju R, Nugurwar A, Caracciolo G, **Sengupta PP.** Left ventricular myocardial performance assessed by 2-dimensional speckle tracking echocardiography in patients with sickle cell crisis. *Indian Heart J.* 2012 Nov-Dec;64(6):553-8. doi: 10.1016/j.ihj.2012.07.021.
- 2012 Yang HS, Caracciolo G, **Sengupta PP**, Goel R, Chandrasekaran K, Srivathsan K. Pacing polarity and left ventricular mechanical activation sequence in cardiac resynchronization therapy. *J Interv Card Electrophysiol.* 2012 Oct;35(1):101-7.
- 2012 Ain DL, Narula J, **Sengupta PP.** Cardiovascular imaging and diagnostic procedures in pregnancy. *Cardiol Clin.* 2012 Aug;30(3):331-41. Epub 2012 Jun 20.
- 2012 Pedrizzetti G, Kraigher-Krainer E, De Luca A, Caracciolo G, Mangual JO, Shah A, Toncelli L, Domenichini F, Tonti G, Galanti G, **Sengupta PP**, Narula J, Solomon S. Functional strain-line pattern in the human left ventricle. *Physical Review Letters.* 2012 Jul;109(4).
- 2012 **Sengupta PP**, Narula J. LV segmentation and mechanics in HCM: twisting the Rubik's Cube into perfection! *JACC Cardiovasc Imaging.* 2012 Jul;5(7):765-8.
- 2012 **Sengupta PP**, Pedrizzetti G, Narula J. Multiplanar visualization of blood flow using echocardiographic particle imaging velocimetry. *JACC Cardiovasc Imaging.* 2012 May;5(5):566-9.
- 2012 Kutty S, **Sengupta PP**, Khandheria BK. Patent foramen ovale: the known and the to be known. *J Am Coll Cardiol.* 2012 May 8;59(19):1665-71.
- 2012 **Sengupta PP**, Pedrizzetti G, Kilner PJ, Kheradvar A, Ebberts T, Tonti G, Fraser AG, Narula J. Emerging trends in CV flow visualization. *JACC Cardiovasc Imaging.* 2012 Mar;5(3):305-16.
- 2012 Kansal MM, Panse PM, Abe H, Caracciolo G, Wilansky S, Tajik AJ, Khandheria BK, **Sengupta PP.** Relationship of contrast-enhanced magnetic resonance imaging-derived intramural scar distribution and speckle tracking echocardiography-derived left ventricular two-dimensional strains. *Eur Heart J Cardiovasc Imaging.* 2012 Feb;13(2):152-8.

- 2012 Kheradvar A, Assadi R, Falahatpisheh A, **Sengupta PP**. Assessment of transmitral vortex formation in patients with diastolic dysfunction. *J Am Soc Echocardiogr*. 2012 Feb;25(2):220-7. Epub 2011 Nov 17.
- 2012 Edris A, Patel PM, Krishnam MS, **Sengupta PP**. Intramyocardial hemorrhage after percutaneous coronary intervention. *Echocardiography*. 2012 Feb;29(2):E50-1.
- 2011 Marwick TH, Chandrashekar Y, Achenbach S, Dilsizian V, Fayad ZA, Finn AV, Hundley WG, Kern MJ, Kramer CM, **Sengupta PP**, Shaw LJ, Zoghbi WA, Narula J. Bibliographic Metrics at JACC: Cardiovascular Imaging An Opportunity for Audit and Reflection. *JACC Cardiovasc Imaging*. 2011 Sep;4(9):1050-1.
- 2011 Sengupta SP, **Sengupta PP**, Narula J. Echocardiographic Investigations of Myocardial Function in Mitral Stenosis: Making Sense of the Echolalia. *Cardiology*. 2011 Sep 23;119(3):142-144.
- 2011 Kansal MM, Lester SJ, Surapaneni P, **Sengupta PP**, Appleton CP, Ommen SR, Ressler SW, Hurst RT. Usefulness of Two-Dimensional and Speckle Tracking Echocardiography In "Gray Zone" Left Ventricular Hypertrophy to Differentiate Professional Football Player's Heart from Hypertrophic Cardiomyopathy. *Am J Cardiol*. 2011 Aug 18.
- 2011 **Sengupta PP**, Marwick TH, Narula J. Adding dimensions to unimodal cardiac images. *JACC Cardiovasc Imaging*. 2011 Jul;4(7):816-8.
- 2011 Saha SK, Anderson PL, Caracciolo G, Kiotsekoglou A, Wilansky S, Govind S, Mori N, **Sengupta PP**. Global left atrial strain correlates with CHADS2 risk score in patients with atrial fibrillation. *J Am Soc Echocardiogr*. 2011 May;24(5):506-12.
- 2011 Zito C, **Sengupta PP**, Di Bella G, Oreto G, Cusmà-Piccione M, Longordo C, Caracciolo G, Lentini S, Carerj S. Myocardial deformation and rotational mechanics in revascularized single vessel disease patients 2 years after ST-elevation myocardial infarction. *J Cardiovasc Med (Hagerstown)*. 2011 May 10.
- 2011 Mor-Avi V, Lang RM, Badano LP, Belohlavek M, Cardim NM, Derumeaux G, Galderisi M, Marwick T, Nagueh SF, **Sengupta PP**, Sicari R, Smiseth OA, Smulevitz B, Takeuchi M, Thomas JD, Vannan M, Voigt JU, Zamorano JL. Current and evolving echocardiographic techniques for the quantitative evaluation of cardiac mechanics: ASE/EAE consensus statement on methodology and indications endorsed by the Japanese Society of Echocardiography. *J Am Soc Echocardiogr*. 2011 Mar;24(3):277-313.
- 2011 Mor-Avi V, Lang RM, Badano LP, Belohlavek M, Cardim NM, Derumeaux G, Galderisi M, Marwick T, Nagueh SF, **Sengupta PP**, Sicari R, Smiseth OA, Smulevitz B, Takeuchi M, Thomas JD, Vannan M, Voigt JU, Zamorano JL. Current and evolving echocardiographic techniques for the quantitative

- evaluation of cardiac mechanics: ASE/EAE consensus statement on methodology and indications endorsed by the Japanese Society of Echocardiography. *Eur J Echocardiogr.* 2011 Mar;12(3):167-205.
- 2011 Narula N, Zaragoza MV, **Sengupta PP**, Li P, Haider N, Verjans J, Waymire K, Vannan M, Wallace DC. Adenine nucleotide translocase 1 deficiency results in dilated cardiomyopathy with defects in myocardial mechanics, histopathological alterations, and activation of apoptosis. *JACC Cardiovasc Imaging.* 2011 Jan;4(1):1-10.
- 2010 **Sengupta PP**, Khandheria BK. A rising paradigm of appropriateness. *J Am Soc Echocardiogr.* 2010 Nov;23(11):1205-6.
- 2010 Nucifora G, Delgado V, Bertini M, Marsan NA, Van de Veire NR, Ng AC, Siebelink HM, Schalij MJ, Holman ER, **Sengupta PP**, Bax JJ. Left ventricular muscle and fluid mechanics in acute myocardial infarction. *Am J Cardiol.* 2010 Nov 15;106(10):1404-9.
- 2010 Eleid MF, Caracciolo G, Cho EJ, Scott RL, Steidley DE, Wilansky S, Arabia FA, Khandheria BK, **Sengupta PP**. Natural history of left ventricular mechanics in transplanted hearts: relationships with clinical variables and genetic expression profiles of allograft rejection. *JACC Cardiovasc Imaging.* 2010 Oct;3(10):989-1000.
- 2010 Mirza M, Caracciolo G, Khan U, Mori N, Saha SK, Srivathsan K, Altemose G, Scott L, **Sengupta P**, Jahangir A. Left atrial reservoir function predicts atrial fibrillation recurrence after catheter ablation: a two-dimensional speckle strain study. *J Interv Card Electrophysiol.* 2011 Sep;31(3):197-206.
- 2010 Caracciolo G, Eleid MF, Abe H, Bhatia N, Fortuin FD, Wilansky S, Carerj S, **Sengupta PP**. Non-uniform recovery of left ventricular transmural mechanics in ST-segment elevation myocardial infarction. *Cardiovasc Ultrasound.* 2010 Aug 3;8:31.
- 2010 Hurst RT, Prasad A, Askew JW 3rd, **Sengupta PP**, Tajik AJ. Takotsubo cardiomyopathy: a unique cardiomyopathy with variable ventricular morphology. *JACC Cardiovasc Imaging.* 2010 Jun;3(6):641-9
- 2010 Geyer H, Caracciolo G, Abe H, Wilansky S, Carerj S, Gentile F, Nesser HJ, Khandheria B, Narula J, **Sengupta PP**. Assessment of myocardial mechanics using speckle tracking echocardiography: fundamentals and clinical applications. *J Am Soc Echocardiogr.* 2010 Apr;23(4):351-69
- 2010 Cho EJ, Caracciolo G, Khandheria BK, Steidley DE, Scott R, Abhayaratna WP, Chandrasekaran K, **Sengupta PP**. Tissue doppler image-derived measurements during isovolumic contraction predict exercise capacity in patients with reduced left ventricular ejection fraction. *JACC Cardiovasc Imaging* 2010; 3(1):1-9.

- 2009 Bertini M, **Sengupta PP**, Nucifora G, Delgado V, Ng AC, Marsan NA, Shanks M, van Bommel RR, Schalij MJ, Narula J, Bax JJ. Role of left ventricular twist mechanics in the assessment of cardiac dyssynchrony in heart failure. *JACC Cardiovasc Imaging* 2009 Dec; 2(12):1425-35.
- 2009 Eleid MF, Konecny T, Orban M, **Sengupta PP**, Somers VK, Parish JM, Mookadam F, Brady PA, Sullivan BL, Khandheria BK, Ommen SR, Tajik AJ. High prevalence of abnormal nocturnal oximetry in patients with hypertrophic cardiomyopathy. *J Am Coll Cardiol* 2009 Nov 3; 54(19):1805-9.
- 2009 Alharthi MS, Jiamsripong P, Calleja A, **Sengupta PP**, McMahon EM, Khandheria B, Tajik AJ, Belohlavek M. Selective echocardiographic analysis of epicardial and endocardial left ventricular rotational mechanics in an animal model of pericardial adhesions. *Eur J Echocardiogr* 2009 May; 10(3):357-62. Epub 2009 Jan 27.
- 2009 Jiamsripong P, Calleja AM, Alharthi MS, Dzinich M, McMahon EM, Heys JJ, Milano M, **Sengupta PP**, Khandheria BK, Belohlavek M. Impact of acute moderate elevation in left ventricular afterload on diastolic transmitral flow efficiency: analysis by vortex formation time. *J Am Soc Echocardiogr* 2009 Apr; 22(4):427-31.
- 2009 Jiamsripong P, Calleja AM, Alharthi MS, Cho EJ, McMahon EM, Heys JJ, Milano M, **Sengupta PP**, Khandheria BK, Belohlavek M. Increase in the late diastolic filling force is associated with impaired transmitral flow efficiency in acute moderate elevation of left ventricular afterload. *J Ultrasound Med* 2009 Feb; 28(2):175-82.
- 2009 Dal-Bianco JP, **Sengupta PP**, Mookadam F, Chandrasekaran K, Tajik AJ, Khandheria BK. Role of echocardiography in the diagnosis of constrictive pericarditis. *J Am Soc Echocardiogr* 2009 Jan; 22(1): 24-33; quiz 103-4.
- 2009 Martín M, Esteva FJ, Alba E, Khandheria B, Pérez-Isla L, García-Sáenz JA, Márquez A, **Sengupta P**, Zamorano J. Minimizing cardiotoxicity while optimizing treatment efficacy with trastuzumab: review and expert recommendations. *Oncologist* 2009 Jan; 14(1):1-11 Epub 2009 Jan 15.
- 2009 **Sengupta PP**, Sorajja D, Eleid MF, Somers VK, Ommen SR, Parish JM, Khandheria B, Tajik AJ. Hypertrophic obstructive cardiomyopathy and sleep-disordered breathing: an unfavorable combination. *Nat Clin Pract Cardiovasc Med* 2009 Jan; 6(1):14-5. Epub 2008 Nov 18.
- 2009 **Sengupta PP**, Khandheria BK, Belohlavek M. Understanding Preejection and Postejction Biphasic Velocity Spikes: A Need for Integrating the Myocardial Shortening, Prestretch and Blood Flow. *Circulation* 2009.

- 2009           **Sengupta PP.** Exploring Left Ventricular Isovolumic Shortening and Stretch Mechanics-The Heart has its Reasons. *JACC: Cardiovascular Imaging* 2009; 2:202-11.
- 2009           **Sengupta PP.** Left ventricular transmural mechanics: tracking opportunities in-depth. *J Am Soc Echocardiogr* 2009; 22:1022-4.
- 2008           Eleid MF, Khandheria BK, **Sengupta PP.** Contrast echocardiography for left ventricular opacification. *Indian Heart J.* 2008 Nov-Dec;60(3 Suppl C):C32-9.
- 2008           Dal-Bianco JP, Khandheria BK, Mookadam F, Gentile F, **Sengupta PP.** Management of asymptomatic severe aortic stenosis. *J Am Coll Cardiol* 2008 Oct 14; 52(16):1279-92.
- 2008           Ritman EL, Pasipoularides A, Arts T, Delhaas T, **Sengupta PP,** Khandheria BK, Tajik AJ, Alain B, Regnard J. Is Left Ventricular Volume During Diastasis the Real Equilibrium Volume, and What Is Its Relationship to Diastolic Suction? Commentaries on Viewpoint *J Appl Physiol* 2008 Sep; 150: 1015-1016.
- 2008           **Sengupta PP,** Khandheria BK, Tajik AJ. Commentaries on viewpoint: is left ventricular volume during diastasis the real equilibrium volume, and what is its relationship to diastolic suction? *J Appl Physiol.* 2008 Sep;105(3):1015-6.
- 2008           **Sengupta PP,** Eleid MF, Khandheria BK. Constrictive pericarditis. *Circ J* 2008 Oct; 72(10):1555-62. Epub 2008 Sep 02.
- 2008           **Sengupta PP,** Krishnamoorthy VK, Abhayaratna WP, Korinek J, Belohlavek M, Sundt TM 3rd, Chandrasekaran K, Seward JB, Tajik AJ, Khandheria BK. Comparison of usefulness of tissue Doppler imaging versus brain natriuretic peptide for differentiation of constrictive pericardial disease from restrictive cardiomyopathy. *Am J Cardiol* 2008 Aug 1; 102(3):357-62. Epub 2008 May 24.
- 2008           Korinek J, **Sengupta PP,** Wang J, Romero-Corral A, Boukatina AE, Vitek J, Krishnamoorthy VK, Cha SS, Dzeja PP, Terzic A, Khandheria BK, Belohlavek M. Doppler strain imaging closely reflects myocardial energetic status in acute progressive ischemia and indicates energetic recovery after reperfusion. *J Am Soc Echocardiogr* 2008 Aug; 21(8):961-8. Epub 2008 Mar 06.
- 2008           **Sengupta PP,** Burke R, Khandheria BK, Belohlavek M. Following the flow in chambers. *Heart Fail Clin* 2008 Jul; 4(3):325-32.
- 2008           **Sengupta PP,** Khandheria BK, Narula J. Twist and untwist mechanics of the left ventricle. *Heart Fail Clin* 2008 Jul; 4(3):315-24.

- 2008           **Sengupta PP**, Narula J. Reclassifying heart failure: predominantly subendocardial, subepicardial, and transmural. *Heart Fail Clin* 2008 Jul; 4(3):379-82.
- 2008           **Sengupta PP**, Tondato F, Khandheria BK, Belohlavek M, Jahangir A. Electromechanical activation sequence in normal heart. *Heart Fail Clin* 2008 Jul; 4(3):303-14.
- 2008           **Sengupta PP**, Tajik AJ, Chandrasekaran K, Khandheria BK. Twist mechanics of the left ventricle: principles and application. *JACC Cardiovasc Imaging* 2008 May; 1(3):366-76.
- 2008           McMahon EM, Korinek J, Yoshifuku S, **Sengupta PP**, Manduca A, Belohlavek M. Classification of acute myocardial ischemia by artificial neural network using echocardiographic strain waveforms. *Comput Biol Med* 2008 Apr; 38(4):416-24. Epub 2008 Mar 05.
- 2008           Dal-Bianco JP, **Sengupta PP**, Khandheria BK. Role of echocardiography in the diagnosis and management of asymptomatic severe aortic stenosis. *Expert Rev Cardiovasc Ther* 2008 Feb; 6(2):223-33.
- 2008           **Sengupta PP**, Northfelt DW, Gentile F, Zamorano JL, Khandheria BK. Trastuzumab-induced cardiotoxicity: heart failure at the crossroads. *Mayo Clin Proc* 2008 Feb; 83(2):197-203.
- 2008           **Sengupta PP**, Krishnamoorthy VK, Abhayaratna WP, Korinek J, Belohlavek M, Sundt TM 3rd, Chandrasekaran K, Mookadam F, Seward JB, Tajik AJ, Khandheria BK. Disparate patterns of left ventricular mechanics differentiate constrictive pericarditis from restrictive cardiomyopathy. *JACC Cardiovasc Imaging* 2008 Jan; 1(1):29-38.
- 2007           Korinek J, Vitek J, **Sengupta PP**, Romero-Corral A, Krishnamoorthy VK, McMahon EM, Khandheria BK, Belohlavek M. Does implantation of sonomicrometry crystals alter regional cardiac muscle function? *J Am Soc Echocardiogr* 2007 Dec; 20(12):1407-12. Epub 2007 Jul 02.
- 2007           Krishnamoorthy VK, **Sengupta PP**, Gentile F, Khandheria BK. History of echocardiography and its future applications in medicine. *Crit Care Med* 2007 Aug; 35(8 Suppl):S309-13.
- 2007           Yoshifuku S, Chen S, McMahon E, Korinek J, Yoshikawa A, Ochiai I, **Sengupta PP**, Belohlavek M. Parametric detection and measurement of perfusion defects in attenuated contrast echocardiographic images. *J Ultrasound Med* 2007 Jun; 26(6):739-48.
- 2007           **Sengupta PP**, Krishnamoorthy VK, Korinek J, Narula J, Vannan MA, Lester SJ, Tajik JA, Seward JB, Khandheria BK, Belohlavek M. Left ventricular form and function revisited: applied translational

- science to cardiovascular ultrasound imaging. *J Am Soc Echocardiogr* 2007 May; 20(5):539-51.
- 2007 Yoshifuku S, Chen S, McMahon EM, Yoshikawa A, **Sengupta PP**, Korinek J, Belohlavek M. Parametric harmonic-to-fundamental ratio contrast echocardiography: a novel approach to identification and accurate measurement of left ventricular area under variable levels of ultrasound signal attenuation. *Ultrasonics* 2007 May; 46(2):109-18. Epub 2006 Dec 21.
- 2007 **Sengupta PP**, Khandheria BK, Korinek J, Jahangir A, Yoshifuku S, Milosevic I, Belohlavek M. Left ventricular isovolumic flow sequence during sinus and paced rhythms: new insights from use of high-resolution Doppler and ultrasonic digital particle imaging velocimetry. *J Am Coll Cardiol* 2007 Feb 27; 49(8):899-908.
- 2007 Korinek J, Kjaergaard J, **Sengupta PP**, Yoshifuku S, McMahon EM, Cha SS, Khandheria BK, Belohlavek M. High spatial resolution speckle tracking improves accuracy of 2-dimensional strain measurements: an update on a new method in functional echocardiography. *J Am Soc Echocardiogr* 2007 Feb; 20(2):165-70.
- 2007 Cooper LT, Belohlavek M, Korinek J, Yoshifuku S, **Sengupta PP**, Burgstaler EA, Winters JL. A pilot study to assess the use of protein A immunoabsorption for chronic dilated cardiomyopathy. *J Clin Apher* 2007; 22(4):210-4.
- 2005 Korinek J, Wang JW, **Sengupta PP**, Miyazaki C, Kjaergaard J, McMahon E, Abraham TP, Belohlavek M. Two-dimensional strain - a Doppler-independent ultrasound method for quantitation of regional deformation: Validation in vitro and in vivo. *J Am Soc Echocardiogr* 2005 Dec; 18(12):1247-53.
- 2005 **Sengupta PP**, Korinek J, Belohlavek M, Narula J, Vannan MA, Jahangir A, Khandheria BK. Left ventricular structure and function: basic science for cardiac imaging. *J Am Coll Cardiol* 2006 Nov 21; 48(10):1988-2001. Epub 2006 Oct 31. PMID:17112989. DOI:10.1016/j.jacc.2006.08.030.
- 2005 **Sengupta PP**, Khandheria BK, Korinek J, Wang J, Jahangir A, Seward JB, Belohlavek M. Apex-to-base dispersion in regional timing of left ventricular shortening and lengthening. *J Am Coll Cardiol* 2006 Jan 3; 47(1):163-72. Epub 2005 Dec 01.
- 2005 **Sengupta PP**, Khandheria BK, Korinek J, Wang JW, Belohlavek M. Biphasic tissue Doppler waveforms during isovolumic phases are associated with asynchronous deformation of subendocardial and subepicardial layers. *J Appl Physiol* 2005 Sep; 99(3):1104-11.
- 2005 **Sengupta PP**, Chandrasekaran K, Prince DJ, Dyke RA, Khandheria BK. Role of biplane echocardiography in a large-volume clinical practice: Revamping strategies for echocardiography in a limited time.

Journal of the American Society of Echocardiography 2005 Jul; 18(7):757-60.

- 2005        **Sengupta PP**, Mehta V, Arora R, Mohan JC, Khandheria BK. Quantification of regional nonuniformity and paradoxical intramural mechanics in hypertrophic cardiomyopathy by high frame rate ultrasound myocardial strain mapping. Journal of the American Society of Echocardiography 2005 Jul; 18(7):737-42.
- 2005        **Sengupta PP**, Khandheria BK. Transoesophageal echocardiography. Heart 2005 Apr; 91(4):541-7.
- 2005        Stöllberger C, Finsterer J, **Sengupta PP**, Mohan JC, Mehta V, Jain V, Arora R, Pandian NG. Is left ventricular hypertrabeculation/noncompaction dependent on ventricular shape and function? Am J Cardiol. 2005 Apr 1;95(7):922.
- 2005        **Sengupta PP**, Mohan JC, Mehta V, Arora R, Khandheria BK, Pandian NG. Doppler tissue imaging improves assessment of abnormal interventricular septal and posterior wall motion in constrictive pericarditis. J Am Soc Echocardiogr 2005 Mar; 18(3):226-30.
- 2004        **Sengupta PP**, Mohan JC, Mehta V, Kaul UA, Trehan VK, Arora R, Khandheria BK. Effects of percutaneous mitral commissurotomy on longitudinal left ventricular dynamics in mitral stenosis: Quantitative assessment by tissue velocity imaging. J Am Soc Echocardiogr 2004 Aug; 17(8):824-8.
- 2004        **Sengupta PP**, Mohan JC, Mehta V, Jain V, Arora R, Pandian NG, Khandheria BK. Comparison of echocardiographic features of noncompaction of the left ventricle in adults versus idiopathic dilated cardiomyopathy in adults. Am J Cardiol 2004 Aug 1; 94(3):389-91.
- 2004        Arora R, Trehan V, Thakur AK, Mehta V, **Sengupta PP**, Nigam M. Transcatheter closure of congenital muscular ventricular septal defect. J Interv Cardiol 2004 Apr; 17(2):109-15.
- 2004        **Sengupta PP**, Trehan VK, Mehra V, Arora R, Khandheria BK. Regional dyssynergy of the interventricular septum after septal artery occlusion in hypertrophic obstructive cardiomyopathy: Use of quantitative Doppler tissue and strain rate imaging. J Am Soc Echocardiogr 2004 Apr; 17(4):384-6.
- 2004        **Sengupta PP**, Mohan JC, Mehta V, Arora R, Pandian NG, Khandheria BK. Accuracy and pitfalls of early diastolic motion of the mitral annulus for diagnosing constrictive pericarditis by tissue Doppler imaging. Am J Cardiol 2004 Apr 1; 93(7):886-90.
- 2004        **Sengupta PP**, Mehta V, Mohan JC, Arora R, Khandheria BK. Regional myocardial function in an arrhythmogenic milieu: Tissue velocity and strain rate imaging in a patient who had hypertrophic cardiomyopathy with recurrent ventricular tachycardia. European Journal of Echocardiography 2004;

- 2003 Arora R, **Sengupta PP**, Thakur AK, Mehta V, Trehan V. Pediatric interventional cardiac symposium (PICS-VI). Device closure of patent ductus arteriosusJ Interv Cardiol 2003 Oct; 16(5):385-91.
- 2003 Mehta V, **Sengupta PP**, Banerjee A, Arora R, Datt V. Congenital tricuspid stenosis and membranous right ventricular outflow tract obstruction in an adult. Ann Card Anaesth 2003 Jul; 6(2):152-5.
- 2003 Thomas G, **Sengupta PP**, Mohan, JC, Pandian NG. Tissue Doppler echocardiography: A need for review. Indian Heart J. 2003 Jan-Feb;55(1):92-3.
- 2002 **Sengupta PP**, Mohan JC, Pandian NG. Tissue Doppler echocardiography: principles and applications. Indian Heart J 2002 Jul-Aug; 54(4):368-78.
- 2002 **Sengupta PP**, Mohan JC, Mukherjee S, Arora R. Left ventricle dynamics during pulsus alternans: insights from tissue velocity imaging. Indian Heart J 2002 May-Jun; 54(3):304-5.
- 2002 Bahl VK, **Sengupta PP**, Sathpathy G, Sharma A, Narang R, Sharma S, Manchanda SC. Chlamydia pneumoniae infection and nonspecific aortoarteritis: search for a link with a nonatherosclerotic inflammatory arterial disease. Indian Heart J 2002 Jan-Feb; 54(1):46-9.
- 2001 **Sengupta PP**, Mohan JC, Arora R. Noncompaction of left ventricular myocardium in the presence of calcific aortic stenosis in an adult. Indian Heart J 2001 Nov-Dec; 53(6):766-8.
- 2001 Mohan JC, **Sengupta PP**, Arora R. Congenitally unguarded tricuspid valve orifice with a giant right atrium and a massive clot in an asymptomatic adult. Indian Heart J 2001 Jul-Aug; 53(4):503-4.
- 1999 **Sengupta PP**, Saxena A, Rajani M. Left main coronary artery compression by aneurysmal pulmonary artery in a patient with tetralogy of Fallot with absent pulmonary valve. Catheter Cardiovasc Interv 1999 Apr; 46(4):438-40.
- 1999 Mohan JC, **Sengupta PP**, Arora R. Immediate and delayed effects of successful percutaneous transvenous mitral commissurotomy on global right ventricular function in patients with isolated mitral stenosis. Int J Cardiol 1999 Feb 28; 68(2):217-23.
- 1996 Salkar HR, Salkar RG, **Sengupta PP**. Ebstein's anomaly with coarctation of the aorta--an unusual association. Indian Heart J 1996 May-Jun; 48(3):283-4. PMID:8755018.

• **Non-peer Reviewed Articles**

- 2002 axena A, **Sengupta PP**. Balloon dilatation of coactation of aorta in adults. *Cardiology Today* 2002.
- 1998 **Sengupta PP**, Mishra S, Prabhakaran D. Role of vasodilators in valvular regurgitant lesions. *Cario Update, Delhi* 1998; 2(39-46).
- 1998 **Sengupta PP**, Saxena A. Lipid abnormalities in Indian context. *Cardio Update, Delhi* 1998; 3:10-4.
- 1997 **Sengupta PP**, Mohan JC. Assessment of right ventricular function. *J Indian Society of Echocardiogr* 1997; 1:18-21.
- 1997 **Sengupta PP**, Prabhakaran D. Estrogen replacement therapy and coronary artery disease. *Cario Update, Delhi* 1997; 1:18-21.
- 1996 Ikar RG, **Sengupta PP**, Salkar HR. Homocystinuria with superior sagittal sinus thrombosis. An illustrated case report. *The Indian Practitioner* 1996; 199:533-6.
- 1996 **Sengupta PP**, Salkar RG, Salkar HR, Jalgaonkar PD. Dual response of regional wall motion abnormalities for detecting viable myocardium during dobutamine stress echocardiography. *Vidarbha Journal of Cardiology* 1996; 12:19-22.
- 1995 **Sengupta PP**, Jalgaonkar PD, Waghmare. Congenitally corrected transposition of great messels. Report of two cases. *Journal of Academy of Medical Sciences* 1995; 1:71-4.
- 1995 **Sengupta PP**. Silent myocardial ischemia. *Journal of Academy of Medical Sciences* 1995; 1:9-12.
- 1994 **Sengupta PP**. AIDS and resurgence of Tuberculosis. *Journal of Academy of Medical Sciences* 1994; 1:67-70.
- 1994 **Sengupta PP**. Clinical utility of dynamic tests of pituitary. *Journal of Academy of Medical Sciences* 1994; 1:27-33.

**BOOKS**

- 2005 Tempe D, **Sengupta PP**. Atlas of transesophageal echocardiography for cardiac anesthetist. BI Churchill Livingstone. UK: Anshan Ltd; 2005.

**BOOK CHAPTERS**

- 2013                      Bansal M, **Sengupta PP**. Newer techniques. In Reich, Fischer (Eds).  
Peri-operative Transesophageal Echocardiography. A companion to  
Kaplan's Cardiac Anesthesia. Elsevier publications, Philadelphia, USA,  
p 298-300 (ISBN: 781455707614).
- 2013                      Bansal M, Narula J, **Sengupta PP**. Dimensions and flows. In Reich, Fischer (Eds).  
Peri-operative Transesophageal Echocardiography. A companion to Kaplan's  
Cardia Anesthesia. Elsevier publications, Philadelphia, USA, p 72-89  
(ISBN: 781455707614).
- 2012                      Deshmukh, A., Narula, J., **Sengupta PP**. Novel Imaging Strategies for Cardiac  
Arrhythmias (2012) Cardiac Mapping: Fourth Edition, pp. 598-611.
- 2012                      Amaki, M., Abe, H., **Sengupta, PP**, Visualization of blood flow with  
echocardiography: The future for heart failure diagnosis  
Interventional Cardiology (London), 4 (6), pp. 609-611.
- 2007                      **Sengupta PP**, Khandheria BK. Natural history of asymptomatic aortic stenosis.  
In: Braunwald E. Harrison's Principle of Internal Medicine.
- 2004                      **Sengupta PP**, Khandheria BK. Echocardiography in heart failure. In:  
Nihoyannopoulos P and Kissolo J. Clinical Echocardiography.
- 2004                      **Sengupta PP**, Khandheria BK. Contrast echocardiography for left ventricular  
opacification. In: Zamarano JL and Garcia Fernandez MA. Contrast  
Echocardiography in Clinical Practice Milan: Springer-Verlag;. p. 105-16
- 2002                      Mohan JC, **Sengupta PP**, Mehta V. Prosthetic valves - Echocardiography  
update. In: Manoria PC. Valvular Heart Disease Volume I. p. 110-2.
- 2000                      **Sengupta PP**, Mohan JC. Evaluation of prosthetic valve function. In:  
Cardiological Society of India. Cardiology Update.
- 1999                      Talwar KK, **Sengupta PP**. Management of ventricular tachyarrhythmia. In:  
Indian College of Cardiology. ICD or Drugs Cardiac Update. p. 244-53.
- 1999                      Prabhakaran D, **Sengupta PP**. Current concepts in obesity. In: Association  
of Physicians of India. Medicine Update Volume 9 (Part I). p. 439-50.

1997                      Sikar RG, Wechalekar AD, **Sengupta PP**. Paraneoplastic syndromes. In:  
APICON. Medicine Update, Volume 7. p. 438-50.

## **TEACHING**

---

2003 – Present            Inpatient, Consultation, and Graphics Rotations as well as Interventional Cardiology Call  
Schedule and Clinical Teaching all in conjunction with fellows of the Cardiovascular Disease and  
Interventional Cardiology Fellowship Programs of WVU School of Medicine.

## **PRESENTATIONS/LECTURES**

---

11/2017                    Disruptive Solutions (Part 1): Artificial Intelligence  
AHA Scientific Sessions 2017  
Anaheim, CA

09/2017                    Mitral Valve Regurgitation  
WVU Cardiology Echo Conference

09/2017                    Mitral Stenosis  
WVU Cardiology Echo Conference

09/2017                    Synthetic Wisdom: mHealth and AI for Consultative Cardiology  
Twenty-first Annual New York Cardiac Center Lecture  
The Cornell Club, New York, NY

07/2017                    Multimodality Imaging in TAVR:  
Echo-guided TAVR: Pre, During, and Post-implantation Assessment  
SCCT 12<sup>th</sup> Annual Scientific Meeting; Washington, DC

06/2017                    American Society of Echocardiography Science Sessions 2017:  
ASE Innovation Chair Address, Echovation 2017

06/2017                    American Society of Echocardiography Scientific Sessions 2017  
The Leading Edge- Where will we be in 5 years?  
Machine Learning and Robotic Echo?

- 06/2017 American Society of Echocardiography Scientific Sessions 2017  
From Bench to Bedside- Machine Learning Approaches  
for Mining Speckle Tracking Big Data
- 06/2017 Outpatient Lecture for Fellows at the Cardiology Grand Rounds
- 06/2017 Cardiac Imaging Grand Rounds: Echo/TEE
- 06/2017 IM Residents Noon Lecture: Use of Technology in Bedside Clinical Diagnosis
- 05/2017 The Living Heart Project Keynote, The Heart has its Reasons, Washington, DC
- 05/2017 Live Structural Heart Cases: MitraClip, Mount Sinai Structural Heart Sessions
- 04/2017 AMA 2017 Inspiration in Medicine Plenary Speech:  
What if advancement in visualization technology  
could transform patient care?
- 03/2017 ACC Scientific Sessions 2017: 3D Printing and Holographic Images:  
Is the Future Here?
- 03/2017 ACC Scientific Sessions 2017: Concordance of Conventional 2D-Doppler  
Versus Speckle Tracking Echocardiography-Based Classification  
of Left Ventricular Diastolic Function
- 03/2017 ACC Scientific Sessions 2017: Functional Tricuspid Regurgitation
- 03/2017 European Society of Cardiology  
European Heart House Spring Summit Key Note:  
“Cardiology of Tomorrow-Virtual cardiology and mHealth”
- 03/2016 Visiting Professor, Cleveland Clinic, Ohio
- 03/2016 Grand Rounds, University of California, San Francisco  
•Are we going the way of Robotics and mechanical intelligence?
- 03/2016 Grand Rounds, Washington Heart Center, Washington  
•The Future of Echocardiography: What Should We Expect in 2025?

*Curriculum Vitae – Partho P. Sengupta*

- 11/2015 AHA Scientific Session, Orlando Florida.  
•The Future of Clinical Cardiology: What Should We Expect in 2025?
- 10/2015 15th Annual Echo of NY. Crown Plaza, NYC  
•Diastology: New Guidelines  
•Diseases of the Pericardium and Restrictive Cardiomyopathy  
•Principles of Strain and Clinical Uses  
•Echo for TAVR and Mitral Clip  
•Moderators: 3D and 4D Echo Image Acquisition,  
•Cropping and Display: Case Studies
- 09/2015 Sight & Sound of Echocardiography, Sheraton Hotel NYC  
•Constrictive Pericarditis, slam dunk and not so easy cases to highlight each
- 09/2015 Northwestern 37th Annual Echo Conference. Chicago, IL  
• Strain-not to stressful  
• Twist and shout  
• Panel Discussion (cases)
- 08/2015 CSANZ 2015 63rd Annual Scientific Meeting of The Cardiac Society of Australia & New Zealand.  
• Future of Echocardiography and Emerging Paradigms: Are we Going theWay of Robotics and Mechanical Intelligence.  
• Speckle tracking echo: applications & future directions.  
• Echo in remote & disadvantage.  
• Role of Echocardiography in assessing patients undergoing transcatheter aortic valve replacement.  
• What’s hot in imaging?
- 03/2015 Cardiology 64th Annual Scientific Session. San Diego, CA, American College of Poster Moderator /Discussant- Multimodality Imaging for Prognosis in Aortic Stenosis.
- 01/2015 UMASS Memorial Medical School. Worchester, MA  
• Noninvasive Assessment of Cardiac Structure and Function: Are we On-target to Meet Today’ Challenges?
- 12/2014 Euro Echo Imaging. Vienna Austria.  
• Euro Echo Imaging-Basic Approach to Cardiac Mechanics: Imaging the Squeeze and the flow redirecting features of the left ventricular; From Physiology to Pathology: Subclinical disease and effects on left ventricular mechanics  
• Oral Abstract Session: New Insights in Ventricular Function  
• Beyond left Ventricular ejection fraction: tissue Doppler Imaging speckle tracking in clinical practice.  
• Valvular Heart Disease: When left ventricular ejection fraction becomes old-fashioned;  
• Young Investigator Award Session: Basic Science; Latest advances in Anatomical Intelligence and  
• Peri-interventional Imaging: How Anatomical Intelligence can be applied in daily clinical practice-Panel discussion illustrated by clinical cases;  
• Cardiac Mechanics: Cardiac Mechanics: rotation, twist, untwist;

*Curriculum Vitae – Partho P. Sengupta*

- Oral Abstract Session: New insights in Ventricular function
- Case based session: Cases from Outside Europe.

- 10/2014 Third Annual Symposium. National Doral Resort, Miami, Florida.
- Echocardiography Symposium – Thirty-third Annual Symposium: Role of Echocardiography in Assessing Patients Undergoing Transcatheter Aortic Valve Replacement Trump
  - Differential Diagnosis of Restrictive Cardiomyopathy versus Constrictive Pericarditis
  - Challenging Cases: Testing Your Skills-Faculty and Audience Participation
  - Future of Echocardiography and Emerging Paradigms: Are we Going the Way of Robotics and Mechanical Intelligence
- 10/2014 44<sup>th</sup> Annual Cardiology Teaching Day: Mitral regurgitation And Aortic Stenosis with insights into TAVR. Poughkeepsie, New York.
- 10/2014 Echo NY, Mount Sinai Hospital, NYC
- Diastolic Dysfunction: Pitfalls and Pearls.
  - Echo NY, Mount Sinai Hospital, NYC Disease of the Pericardium and Restrictive Cardiomyopathy.
  - Role of Echo for TAVR.
  - Image Acquisition, Cropping and Display
- 10/2014 Learning Objectives: How to assess the right heart with echocardiography: The normal Ventricle ESC
- 09/2014 New techniques in Echocardiography  
Speckle tracking echocardiography: Principles and application;  
Future of echocardiography: Emerging Paradigms.  
Buenos Aires (Argentina)
- 07/2014 Noninvasive Assessment of Cardiac Structure, Mayo Clinic, Rochester, MN. Are we On-Target to Meet Today's Challenges?
- 06/2014 25th Annual Scientific Session, Portland, OR
- Early Diagnosis of Disease by Myocardial Deformation
  - Strain in Hypertension Disease and HCM
- 06/2014 2014 Complex Coronary, Valvular & Vascular Cases Symposium-Mount Sinai Hospital (NY, NY)Live Cases
- 05/2014 19th World Congress of Echocardiography and Allied Techniques (Sibui, Romania).
- Cardiac Muscle Mechanics: Newer Applications
  - Cardiac Vortex Imaging Novel Pathophysiological Insights
- 02/2014 27th Annual State of the Art Echocardiography, Scottsdale AZ

*Curriculum Vitae – Partho P. Sengupta*

- Wild Wild West, Cases from the Echo Corral
- 2D and 3D Imaging of Functional and Ischemic Mitral Regurgitation.
- Demystifying Strain Imaging

- 01/2014 The Accelerated Future of Echo Cardiology.  
Mount Sinai Medical Center (New York, New York)
- 12/2013 Assessment of Subclinical Cardiovascular Disease Using Cardiac  
Ultrasound– Emerging Paradigms. The University of Texas MD  
Anderson Center (Houston Texas)
- 12/2013 European Society of Cardiology-Istanbul, Turkey  
3D Strain: What 3 D strain is? Different approaches to measure  
myocardial deformation in 3D.  
Rotation, twisting and torsion: what does it mean and what  
can we learn from it?
- 11/2013 Echocardiography: Clinical Application of Myocardial Strain Imaging-  
American Heart Association (Dallas, Texas)
- 08/2013 Myocardial Fiber Architecture-from anatomy to in vivo imaging.  
European Society of Cardiology Conference:  
(Amsterdam Netherlands)
- 07/2013 14th Feigenbaum lecturer: Intelligent Platforms for  
Disease Assessment: Novel Approaches in Functional Echocardiography.  
Annual Scientific Session, American Society of Echocardiography (Minneapolis)
- 07/2013 Nitty Gritty of Cardiac Mechanics: Ischemic Heart Disease.  
Annual Scientific Session, American Society of Echocardiography
- 06/2013 Live cases, Course Co-director. 2013 Structural Heart /  
Complex Coronary Symposium Agenda.  
Mount Sinai Medical Center (New York)
- 05/2013 Workshop on Myocardial Mechanics 101:  
Understanding gaps and applying standards.  
Sights and Sounds of Echocardiography in the Big Apple (New York)
- 05/2013 Constrictive pericarditis: pathognomonic echo/doppler features.  
Do I need more? CT/MRI? Sights and Sounds of Echocardiography  
in the Big Apple (New York)
- 02/2013 American Society of Echocardiography's 26th Annual State-of-the-Art  
Echocardiography Conference (Scottsdale, AZ)

*Curriculum Vitae – Partho P. Sengupta*

- 11/2012 American Heart Association (Los Angeles)
- 10/2012 CT Surgery Grand Rounds: Structure and Function of the Left Ventricle:  
A Changing Paradigm
- 09/2012 ISIIC (Poland)  
What is new in the assessment of myocardial function?
- 08/2012 Echo Nagpur 2012 (India)
- Chamber Quantification: Techniques and Interpretation  
Quantifying the Left Heart (LV and LA): Case Studies Mitral Regurgitation:  
Functional vs Ischemic vs Degenerative
- Interpreting cardiac function and Contractility: Interpreting the  
Heart in motion
- Live Demonstration of 3D TEE-GE HealthCare Congenital Heart Diseases Exotica
- Cardiac Restriction or Constriction: Still a challenge
- Cases Illustrating Echo-guided Interventions in the Cath Lab
- Interesting cases from the Faculty
- 06/2012 23rd Annual Scientific Session of the American Society of Echo  
(National Harbor, MD)  
Quantifying Regional Myocardial Function: New ASE/EAE Recommendations  
(Joint EAE Session)- Chair  
All You Wanted to Know About Myocardial Mechanics- Chair
- 05/2012 Sights & Sounds of Echocardiography In the Heart of the Big Apple  
(New York)
- Myocardial Mechanics 101: Understanding, gaps and applying standards
- Learn how to acquire data on different ultrasound machines  
Learn how to analyze the data
- Constrictive Pericarditis: Pathognomonic Echo/Doppler Features.  
Do I Need More? CT/MRI? (Chair/Moderator)
- 03/2012 American College of Cardiology (Chicago)
- 02/2012 State of the Art Echocardiography (Scottsdale)

- 08/2011 Pericardial diseases: Echocardiography  
Annual Scientific Sessions, European Society of Cardiology  
Paris, France
- 06/2011 Cardiovascular Physiology and Cardiac Flow  
Faculty of Engineering, University of Cagliari, Cagliari (Italy)  
Euromech Colloquium
- 06/2011 Bubble: what are they and how do they help?  
Annual Scientific Sessions of the American Society of echocardiography  
Montreal, Canada
- 06/2011 Contrast Applications in the Echo Lab: LVEF, Masses, Doppler  
and Beyond Annual Scientific Sessions of the American Society  
of Echocardiography Montreal, Canada
- 06/2011 Physiologic Basis of Vortex Flow Imaging  
Annual Scientific Sessions of the American Society of echocardiography  
Montreal, Canada
- 06/2011 Multiple faculty presentations  
Echocardiography Today and tomorrow, St Wolfgang, Austria
- 02/2011 24th Annual State-of-the-art Echocardiography  
Scottsdale, Arizona  
Myocardial Mechanics 101: Strain, Strain Rate and Speckle Tracking  
Myocardial Mechanics 101: twist and torsion Tissue Doppler and Strain Imaging:  
Why? How? Case studies in infective endocarditis  
Contemporary assessment of pericardial constriction:  
A practical guide for comprehensive assessment
- 09/2010 Multiple Faculty Presentations: Echo Magpur 2010  
Nagpur, India
- 07/2010 Diastolic Heart Failure Indo-American Metabolic Meeting  
Beijing, China
- 07/2010 Systolic Heart Failure Indo-American Metabolic Meeting  
Beijing, China
- 03/2010 FIT Sessions: Best Poster  
Annual Scientific Sessions of the American College of  
Cardiology Atlanta, Georgia

*Curriculum Vitae – Partho P. Sengupta*

- 11/2009 Novel Imaging Strategies for Predicting Remodeling and Evolution of Heart Failure Annual Scientific Sessions of the American Heart Association Orlando, Florida
- 10/2009 Myocardial Mechanics: New Insights from Speckle Tracking Annual Scientific Sessions Portuguese Society of Echocardiography Tomar, Portugal
- 06/2009 Case Presentations Echocardiography Today and Tomorrow 2009, St. Wolfgang, Austria
- 06/2009 LV form and function Echocardiography Today and Tomorrow 2009 St. Wolfgang, Austria
- 06/2009 LV strain, twist and torsion Echocardiography Today and Tomorrow 2009 St. Wolfgang, Austria
- 06/2009 Workshop: Speckle tracking strain Echocardiography Today and Tomorrow 2009 St. Wolfgang, Austria
- 06/2009 Myocardial Strain A to Z: Preclinical cardiomyopathy Annual Scientific Sessions American Society of Echocardiography Washington, District of Columbia
- 05/2009 Twist, Torsion, Vortex, Simplifying Terminologies, Sights and Sounds of Echocardiography New York, New York
- 03/2009 Filling Pressure/ Mechanics: ACC Integrated Imaging 2009 Annual Scientific Sessions, American College of Cardiology
- 02/2009 Vortex Imaging: Newer Concept With Emerging Clinical Applications, Echocardiography today and tomorrow Phoenix, Arizona
- 01/2009 Cardiac Dysfunction: Early Detection New Insights From Vortex Imaging Phoenix, Arizona
- 11/2008 Simplifying the Terminology. Twist, Torsion, Vortex Formation Time Chicago, Illinois
- 11/2008 Imaging the Vortex. What Is the “Vortex”? Should We Evaluate Myocardial Mechanics or Flow or Both?

Chicago, Illinois

- 11/2008            Myocardial Form Follows Function: New Concepts for  
Quantification of Myocardial Function  
6th Annual Echocardiography From Pictures to Information  
Phoenix, Arizona
- 09/2008            Left ventricular muscle and fluid mechanics:  
Novel applications in cardiovascular ultrasound imaging  
7th Annual Conference for Advanced Echocardiography  
Osaka, Japan
- 09/2008            Left ventricle: Form follows Function Annual Scientific Sessions  
Japan College of Cardiology  
Tokyo, Japan
- 09/2008            Case-Based Introduction to Myocardial Mechanics and Concepts  
of Motion, Strain, Rotation, Torsion  
John Hopkins, Baltimore, Maryland
- 06/2008            Workshop on Myocardial Strain  
Annual Scientific Sessions, American Society of Echocardiography  
Toronto, Ontario, Canada
- 11/2007            Filling Pressures in ADHF-Beyond Biomarkers iMAX  
Orlando, Florida
- 09/2007            Myocardial Strain, Velocity, Torsion by Speckle Tracking  
– Workshop 6th Annual Echocardiography from Pictures to Information  
Phoenix, Arizona
- 05/2007            Vortex Imaging: A new frontier  
Sedona, Arizona
- 03/2007            Illustrating How to Incorporate Echo Data in the AS  
Structured Faculty Session, Annual Scientific Session of  
the American College of Cardiology
- 10/2006            Myocardial Form Follows function-Implication for the Imager  
5th Annual Echocardiography from Pictures to Information  
Phoenix, Arizona
- 03/2006            There is a Twist to the Descent  
E3-Essential Echocardiography with Experts - ASE  
Atlanta, Georgia

- 10/2005                    It Does Not Pump, It Does Not Squeeze, What Does It Do?  
4th Annual Echocardiography from Pictures to Information  
Phoenix, Arizona
- 03/2005                    Illustrating How to Incorporate Echo Data in the  
Myocardial Infarction Patient after Perfusion  
Structured Faculty Session, Annual Scientific Sessions of the  
American College of Cardiology
- 12/2004                    Genesis of Waveforms in Doppler Myocardial Imaging,  
Spotlight Sessions, Annual Scientific Sessions of European  
Society of Echocardiography, Athens, Greece
- 11/2004                    Understanding the Function of the Myocardium.  
Physiologic Basis for 'Squiggles'  
2nd Annual Echocardiography from Pictures to Information  
Phoenix, Arizona
- 06/2001                    Tropical Echocardiography: Interesting Cases  
New England Medical Center  
Boston, Massachusetts
- 06/2001                    Percutaneous Mitral Commissurotomy: Single Center Experience  
New England Medical Center  
Boston, Massachusetts
- 02/2001                    Live Case Demonstration: Normal Echocardiographic Approach  
Annual Conference of Indian Academy of Echocardiography  
Calcutta, India
- 02/2001                    Controversy: Constrictive Pericarditis vs Restrictive Cardiomyopathy:  
Echocardiography is the Diagnostic Test  
Annual Conference of Indian Academy of Echocardiography  
Calcutta, India
- 2000                        Diagnosis of Constrictive Pericarditis  
APICON 2000  
New Delhi, India

### **US Patent Awarded**

Method for imaging intracavitary blood flow patterns (US 8,328,724 B2) Coinventors: **Sengupta, Partho P.**  
;Belohlavek, Marek; and Khandheria, Bijoy K.

### **US Patent Pending**

Diagnosis and Classification of Diastolic Dysfunction using a computerized algorithm

**Consulting/Entrepreneurship/Advisory Roles**

2015-ongoing	Consultant: Hitachi Aloka Medical Systems
2012-ongoing	Founder Member: TruVision LLC, Rhode Island
2012-ongoing	Advisor: Tele HealthRobotics LLC
2012-ongoing	Advisor: Tele Health Now LLC
2010-ongoing	Founder Member: Foundation-I4 (International Innovations in Imaging and Interventions, Nonprofit organization)
2015	Consultant: GE Healthcare
2013-2015	Consultant: Edward Lifesciences
2012-2015	Strategic Advisor: Saffron Intel Technologies Inc
2012-2014	Chief Medical Advisor: Medical Intelligence LLC
2010	Chief Advisor: National Science Foundation (NSF) SBIR Phase I Study, Interactive Flow Studies Corporation

**Mentorship**

2014-ongoing	Ines Sheriffi- Description: Cardiology Fellow
2015-2017	Alaa Omar (Post-Doc Research Fellow)- Description: Mount Sinai Hospital
2014-2015	Sharath Vallabhajosyula (Clinical Research Coordinator)- Description: Icahn School of Medicine
2013-2015	Brandon Wiley (Cardiology Fellow)- Description: Mount Sinai Hospital
2013-2015	Sukrit Narula (Research Student)- Description: Icahn School of Medicine
2012-2014	Chan Seok Park (Research Fellow)- Description: Icahn School of Medicine
2012-2014	Karen Modesto (Post-Doc)- Description: Icahn School of Medicine
2011-2014	Makoto Amaki (Visiting Clinician)- Description: Icahn School of Medicine

*Curriculum Vitae – Partho P. Sengupta*

2011-2012	Giuseppe Caracciolo (Post-Doc)- Description: Icahn School of Medicine
2011-2012	Ayume Nakabo (Visiting Clinician)- Description: Icahn School of Medicine
2011-2012	Georg Goliash (Visiting Clinician)- Description: Icahn School of Medicine
2011-2012	Daniela Borges (Visiting Clinician)- Description: Icahn School of Medicine
2010-2011	Caleb Thompson (Instructor, Cardiology)- Description: University of California, Irvine
2010-2011	Timothy Gong (Internal Medicine Resident)- Description: University of California, Irvine
2009-2010	Haruhiko Abe (Research Fellow)- Description: Mayo Clinic Arizona, University of California, Irvine
2009-2010	Haruhiko Abe (Research fellow)- Description: Mayo Clinic Arizona
2009-2010	Mayank kansal (Echo Clinical Fellow)- Description: Mayo Clinic Arizona
2009 – 2010	Nupoor Narula (Medical Student)- Description: Mayo Clinic Arizona
2009 – 2010	Raina Roy (Clinical Fellow)- Description: Mayo Clinic Arizona
2009 – 2010	Nisha Bhatia (Clinical Fellow)- Description: Mayo Clinic Arizona
2008-2009	Arredondo, Michael (Internal Medicine Resident)- Description: Mayo Clinic Arizona
2008 – 2009	Buetler, David (Medical Student)- Description: Mayo Clinic Arizona
2008 – 2009	Caracciolo, Giuseppe (Research Fellow)- Description: Mayo Clinic Arizona
2008 – 2009	Geyer, Holly (Internal Medicine Resident)- Description: Mayo Clinic Arizona
2007-2009	Elied, Mackram (Internal Medicine Resident) Current Status: Chief Medical Resident, Mayo Clinic Arizona
2007-2008	Joo Cho, Eun (Resident)- Description: Mayo Clinic Arizona
2005-2007	Krishnamoorthy, V.K. (Research Fellow)- Description: Mayo Clinic Rochester

**Media Links**

<http://www.mountsinai.org/about-us/newsroom/press-releases/partho-p-sengupta-md-of-the-mount-sinai-medical-center-honored-by-the-american-society-of-echocardiography>

<http://www.medscape.com/viewarticle/791150>

<http://www.forbes.com/sites/larryhusten/2013/07/17/a-glimpse-of-the-future-of-cardiology-including-star-wars-holograms/>

<http://www.medpagetoday.com/Cardiology/MyocardialInfarction/55965>

<http://www.informationweek.com/healthcare/analytics/future-als-cardiac-treatments-from-existing-products/d/d-id/1297739>

<http://www.medscape.com/viewarticle/858343>

<http://www.medscape.com/viewarticle/829858>

<http://www.news-medical.net/news/20150427/Study-explains-how-NYC-doctor-can-perform-tele-robotic-ultrasound-over-the-Internet-on-patients-in-Chicago.aspx>

<http://medicalxpress.com/news/2015-04-robotic-ultrasound-york-chicago.html>

<http://www.businesswire.com/news/home/20151203005995/en/Mount-Sinai-Initiates-Clinical-Study-Evaluate-Hear-t>

<http://www.businesswire.com/news/home/20151201005812/en/TomTec-Imaging-Systems-Study-Proves-Efficiency-Automated>