

# ECHO INDIA 2019

Silver Jubilee Celebration Conference of  
Indian Academy of Echocardiography

7-10 November 2019 | ITC Royal Bengal, Kolkata



*Organized by*

**West Bengal Academy of Echocardiography**

(West Bengal Chapter of Indian Academy of Echocardiography)

**1B Ritchie Road, Kolkata 700 019**

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Published by:  
Dr Arunangshu Ganguly  
Organizing Secretary, Echo India 2019  
Indian Academy of Echocardiography

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राज्यपाल, पश्चिम बंगाल  
Governor of West Bengal



18<sup>th</sup> October, 2019

Message

I am glad to learn that the West Bengal Academy of Echocardiography (WBAE) entrusting with Echo India 2019 is going to organise a conference of Indian Academy of Echocardiography (IAE) to celebrate its Silver Jubilee in between 7<sup>th</sup> to 10<sup>th</sup> November, 2019 and to bring out a souvenir to commemorate the occasion.

I am sure that interactions of eminent National faculties in the conference will be highly useful in the field of Cardiac Imaging and Echocardiography.

I convey my felicitations to all the members associated with this initiative and wish the Conference all success.

*Jagdeep Dhankhar*

Jagdeep Dhankhar



**Sameer  
Shrivastava**

President, IAE

Practice of medicine is at a crossroads. With a plethora of investigative and treatment modalities available, especially in cardiology, confounders have confused just about any and every aspect of evaluation.

Having said that, one investigation which has withstood the test of time has been echocardiography. Past three decades have witnessed an incremental value not only in terms of numbers and operators, but it has also seen widening indications and applications of this modality.

Though, an investigation with broad based application it has its limitations too and the current era is that of multimodality imaging.

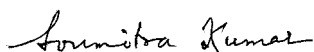
To discuss this modality in all its nuances with limitations etc., we shall threadbare every aspect of this modality in this “Silver Jubilee” year of Indian Academy’s existence.

I extend a warm welcome to all the delegates and faculty to make these four days not only an event to learn and teach but to have an event that will translate into celebrations.

Welcome to all.....!!!

Dear All,

It is a matter of great pleasure and privilege for me to welcome you all to the “City of Joy” – Kolkata on the occasion of “Silver Jubilee Celebration Conference” of IAE (ECHO INDIA 2019) in my dual capacity as “Chairman, Scientific Committee” and “Chairman, Organizing Committee”. It was an extremely stiff challenge for me to perform in these two capacities. With very able and earnest support from my colleagues and the “Event Management Team”, I have tried to deliver to the best of my ability. There is bound to be some shortcomings in an endeavour of this dimension and please accept my sincere apologies for them. We have spared no effort to provide an innovative but useful Scientific programme covering not only various facets of state-of-the-art echocardiography but also include facets of multi-modality imaging which are progressively becoming essential in our day-to-day practice beyond echocardiography. From an organizational point of view, we have tried to provide an ambience and infrastructure that can be considered befitting of the occasion i.e. the Silver Jubilee of IAE. Let us celebrate this occasion amidst the best of learning, bonhomie and enjoyment and make this conference an outstanding one that is going to be remembered for many years to come. With very warm regards and best wishes,



**Prof.(Dr.) Soumitra Kumar,**

MD,DM,FIAE,FCSI,FACC,FESC,FSCAI,FICC,FICP

President-elect, IAE and Chairman,

Scientific Committee, ECHO INDIA 2019

Chairman, Organizing Committee, ECHO INDIA 2019

President, WBAE



**Soumitra  
Kumar**

President-Elect, IAE

ECHO INDIA 2019





**S K  
Parashar**

Chairman, International  
Affairs & Scientific Advisory  
Committee, IAE

It is indeed a matter of great pleasure that the West Bengal Academy of Echocardiography is organizing the Annual Conference of Indian Academy of Echocardiography, supported by American Society of Echocardiography & European Association of Cardiovascular Imaging. This carries a special significance being the silver jubilee year of the academy. Bringing out a souvenir on this occasion is a great effort. This conference will provide a great forum where medical professionals from this country and abroad will have a unique opportunity to discuss various established and emerging concepts of cardiovascular imaging, including recent advances and its impact on therapeutic decision making.,

I am glad that the scientific committee, headed by Prof Soumitra Kumar, is bringing together, not only cardiologists and sonographers, but also point of care clinicians, anaesthesiologists, interventionalists, experts in multimodality imaging etc, With excellent scientific program, it is a noble endeavour to streamline and enrich the knowledge of the participants who will have an ample opportunity to interact with international and national experts. The pre-conference CME, a unique, case based session, will evoke a tremendous interest in the delegates

I would like to thank the entire team connected with this conference for their endless hard work for many months to ensure a grand finale of this conference. I wish the conference a great success, especially in the silver jubilee year.

**S.K. Parashar**  
Chair, Int'l IAE Affairs  
& Scientific Advisory Committee

12th October, 2019

Established in 1994, the Indian Academy of Echocardiography (IAE) is the largest cardiac imaging society in India. Over the last 25 years, the IAE has been constantly striving to enhance the standards of echocardiography practice in India through training, teaching and accreditation. 'Echo India', the annual conference of IAE represents one of the most important events in this endeavor. It brings together the world-leaders in echocardiography and allows echo-practitioners in India a unique opportunity to interact with and learn from these experts. Not surprisingly therefore, Echo India remains the most sought-after echocardiography meeting in India!

This being the silver jubilee of the IAE, Echo India 2019 promises to be an even grander event than ever before! The galaxy of the renowned international and national faculty members, a unique scientific program, magnificent conference venue, wonderful hospitality and the rich cultural heritage of Kolkata together promise to make this event truly memorable for each one of us. On behalf of the IAE, it gives me immense pleasure to invite you all to this scientific feast awaiting you in Kolkata- the cultural capital of India!

Kind regards

**Dr Manish Bansal**

Honorary General Secretary, IAE



**Manish  
Bansal**

Hony General Secretary, IAE



**Arunangshu  
Ganguly**

Organizing Secretary  
Echo India, 2019

#

Ar





**Nandita  
Chakraborty**



**Hirakjyoti  
Sanyal**



**Indranil  
Dutta**

## Editorial

Respected Teachers, Friends and Colleagues,

Welcome to Kolkata. We at Kolkata feel privileged to host the Silver Jubilee celebrations of the Indian Academy of Echocardiography.

This occasion will see a scintillating gathering of echo-experts from all over the world and an array of academic presentations which can be only be equaled by the star where it is being held, Kolkata.

There will be a feast of knowledge, with an emphasis on integrating echo with its imaging brethren of cardiac CT and MRI.

It has been our pleasure to publish this souvenir, and feeling that there was not much we could contribute in this bouquet of knowledge we journeyed on a different pathway.

So here we are on a documentation of history. A bit about Kolkata, a bit about echocardiography, The Academy and WBAE. Hopefully this will be informative as enjoyable.

We have a lot of people to thank. Dr Soumitra Kumar for hand -holding and contributing, Dr Arunangshu Ganguly for his encouragement. Dr. Parashar for his mentorship and article. Dr Indrajit Ray, specially for taking time out from his busy schedule and writing about Kolkata, a city we, who live here are all passionate about. The entire organizing committee and elite members of IAE. And myriads of others who we cannot even begin to list.

Thank You and Happy reading.

The Souvenir Committee.

# Indian Academy of Echocardiography

## Executive Committee 2018-19

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<i>President-Elect</i>	Dr Soumitra Kumar
<i>Vice-President</i>	Dr K Raghu
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Dr Debika Chatterjee (Kolkata)  
Dr S Veeramani (Madurai)  
Dr Rishikesh Shah (Thane)

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Dr S K Parashar  
Dr G Vijayaraghavan  
Dr J C Mohan  
Dr P Krishnamraju  
Dr Rakesh Gupta  
Dr S K Kaushik  
Dr A V Anjaneyulu  
Dr R Alagesan  
Dr R J Manjuran  
Dr S T Yavagal  
Dr R R Kasliwal  
Dr Nitin Burkule  
Dr V Amuthan

# Echo India 2019

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<b>Chairman, Reception Committee</b>	Dr Pradip Kumar Deb
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<b>Vice Chairman Transport Committee</b>	Dr Nurul Islam
<b>Joint Organizing Secretary</b>	Dr Souvik Kanjilal, Dr Arindam Pandey
<b>Executive Secretary</b>	Dr Sulagna Banerjee

# Galaxy of International Luminaries

ECHO INDIA 2019



Dr Madhav Swaminathan  
USA



Dr Sunil Mankad  
USA



Dr K Chandrasekharan  
USA



Dr Mani Vannan  
USA



Dr YS Chandrasekhara  
USA



Dr Raj Janardhanan  
USA



Dr Devyani Chowdhury  
USA



Dr Sudhir Wahi  
Australia



Dr Roxy Senior  
England



Dr Erwan Donal  
France



Dr Bogdan A Popescu  
Romania



Dr Vito Maurizio Parato  
Italy



Dr Fabiola Sozzi  
Italy



Dr Krasimira Hristova  
Bulgaria



Dr Sonia El Saiedi  
Egypt



Dr Hala El Marsafawy  
Egypt



Dr Kameswari Maganti



**ASSEMBLY IN RABINDRANATH TAGORE HALL | Venue: ITC Royal Bengal, Kolkata**

8:30 am – 8:40 am **Assembly, Welcome & Orientation of Venue**  
**Arunangshu Ganguly** - Organizing Secretary, Echo India 2019.

8:40 am – 09:00 am **Welcome & Orientation of Course**  
**Sameer Shrivastava**, President, IAE &  
**Soumitra Kumar**, Scientific Chairman, Echo India 2019

Pattern of All Sessions: (a) Introduction of topic  
(b) How to acquire  
(c) How to measure  
(d) How to analyze and interpret  
(e) How to report and conclude  
(f) we show a case and you interpret  
(g) recorded case demonstration in sessions where applicable

**Rabindranath Tagore Hall**

**09:15 am - 10:30 am**

**Science of performing an ideal Echo & Doppler study: Back to Basics**

1. Role of controls on the echo machine & their setting
2. What are various ideal echocardiographic 2D views and their echo-anatomic correlation
3. Minimum standard recording of a complete echo study
- 3A: Artifacts – how to recognize & how to eliminate
4. Basics of clinical Doppler
5. How to optimize ideal Spectral Doppler and Color Flow mapping
6. Nyquist limit simplified. When to choose PW and CW Doppler; The usual mistakes made and their solution
7. Reporting format – minimum requirements

**Rahul Mehrotra** (Delhi)  
**Hardeep Grewal** (Gurgaon)

EXPERT CRITIQUE  
**Dipankar Datta** (Kolkata)  
**Abhijit Chatterjee** (Kolkata)

**C V Raman Hall**

**09:15 am - 10:30 am**

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7. Reporting format – minimum requirements

**Aniruddha De** (Kolkata)  
**Rajat Subhra Ghose** (Kolkata)

EXPERT CRITIQUE  
**V Amuthan** (Madurai)

**Mother Teresa Hall**

**09:15 am - 10:30 am**

**Science of performing an ideal Echo & Doppler study: Back to Basics**

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7. Reporting format – minimum requirements

**Nitin Burkule** (Mumbai)  
**Rishikesh Shah** (Mumbai)

EXPERT CRITIQUE  
**Fabiola Sozzi** (Italy)  
**Nandita Chakraborty** (Kolkata)

**Amartya Sen Hall**

**09:15 am - 10:30 am**

**Science of performing an ideal Echo & Doppler study: Back to Basics**

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6. Nyquist limit simplified. When to choose PW and CW Doppler; The usual mistakes made and their solution
7. Reporting format – minimum requirements

**U P Singh** (Chandigarh)  
**Gaurav Kapoor** (Amritsar)

EXPERT CRITIQUE  
**Sankar Mitra** (Kolkata)  
**K Raghu** (Hyderabad)

**10:30 am -10:45 am | TEA BREAK**



**Rabindranath Tagore Hall****10:45 am -12:00 pm****Pulmonary hemodynamics in clinical practice**

1. RA pressure
  - IVC method
  - Hepatic vein flow reversals
  - Tricuspid valve Doppler
2. Pulmonary artery peak and mean pressures; 2-D Semiquantitative & Doppler quantitative methods; How do I measure in cases of VSD, PDA, PA diastolic pressure by PR jet?
3. How do I measure RA volume, tricuspid and pulmonary annulus
4. RV functions in daily practice like RVFAC, TAPSE, RV-TDI

**S K Parashar** (Noida)  
**Shahana Zaman** (Bangladesh)  
**Mohammadullah Firoz** (Bangladesh)

EXPERT CRITIQUE  
**G Vijayaraghavan** (Trivandrum)

**12:15 pm – 01:30 pm****3D Echo 360 Degrees**

1. Basic concepts of optimizing a 3-D image, demonstration of cropping modalities & controls
2. Left ventricular Tomographic views: Biplane, Triplane & Multiplane
3. LV 3-D Volume calculation Step by Step: Gold standard of EF
4. 3-D evaluation of tricuspid valve
5. 3-D Evaluation of mitral valve
6. 3-D Evaluation of aortic valve

**R Alagesan** (Chennai)  
**S R Veeramani** (Madurai)

EXPERT CRITIQUE  
**Raj Janardhanan** (USA)

**C V Raman Hall****10:45 am -12:00 pm****Pulmonary hemodynamics in clinical practice**

1. RA pressure
  - IVC method
  - Hepatic vein flow reversals
  - Tricuspid valve Doppler
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3. How do I measure RA volume, tricuspid and pulmonary annulus
4. RV functions in daily practice like RVFAC, TAPSE, RV-TDI

**Rohit Tandon** (Ludhiana)  
**Sunil Bohra** (Bengaluru)

EXPERT CRITIQUE  
**Mani Vannan** (USA)

**12:15 pm – 01:30 pm****3D Echo 360 Degrees**

1. Basic concepts of optimizing a 3-D image, demonstration of cropping modalities & controls
2. Left ventricular Tomographic views: Biplane, Triplane & Multiplane
3. LV 3-D Volume calculation Step by Step: Gold standard of EF
4. 3-D evaluation of tricuspid valve
5. 3-D Evaluation of mitral valve
6. 3-D Evaluation of aortic valve

**K K Kapur** (Delhi)  
**Vinayak Agrawal** (Gurugram)

EXPERT CRITIQUE  
**K Chandrasekaran** (USA)

**Mother Teresa Hall****10:45 am -12:00 pm****Pulmonary hemodynamics in clinical practice**

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  - IVC method
  - Hepatic vein flow reversals
  - Tricuspid valve Doppler
2. Pulmonary artery peak and mean pressures; 2-D Semiquantitative & Doppler quantitative methods; How do I measure in cases of VSD, PDA, PA diastolic pressure by PR jet?
3. How do I measure RA volume, tricuspid and pulmonary annulus
4. RV functions in daily practice like RVFAC, TAPSE, RV-TDI

**Simmi Manocha** (Delhi)  
**Debika Chatterjee** (Kolkata)

EXPERT CRITIQUE  
**R J Manjuran** (Kochi)

**12:15 pm – 01:30 pm****Congenital heart Disease**

1. What all I want to know about ASD and device suitability
2. What all I should see in a child with VSD
3. Complex cyanotic heart disease: A simplified clinical, radiological and ECG approach to narrow down differential diagnosis
4. Case demonstration of congenital mitral valve abnormalities

**K Siva Kumar** (Chennai)  
**Ritchie Solomon** (Chennai)

EXPERT CRITIQUES  
**Sonia El Saiedi** (Egypt)  
**I B Vijayalakshmi** (Bangalore)

**Amartya Sen Hall****10:45 am -12:00 pm****Pulmonary hemodynamics in clinical practice**

1. RA pressure
  - IVC method
  - Hepatic vein flow reversals
  - Tricuspid valve Doppler
2. Pulmonary artery peak and mean pressures; 2-D Semiquantitative & Doppler quantitative methods; How do I measure in cases of VSD, PDA, PA diastolic pressure by PR jet?
3. How do I measure RA volume, tricuspid and pulmonary annulus
4. RV functions in daily practice like RVFAC, TAPSE, RV-TDI

**Rekha Mishra** (Delhi)  
**Sabina Hashem** (Bangladesh)

EXPERT CRITIQUE  
**S Shanmugasundaram** (Chennai)

**12:15 pm – 01:30 pm****Congenital heart Disease**

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2. What all I should see in a child with VSD
3. Complex cyanotic heart disease: A simplified clinical, radiological and ECG approach to narrow down differential diagnosis
4. Case demonstration of congenital mitral valve abnormalities

**Smita Mishra** (Delhi)  
**Saji Philip** (Mannar)  
**BRJ Kannan** (Madurai)

EXPERT CRITIQUES  
**Hala Almarsafawy** (Egypt)  
**Achyut Sarkar** (Kolkata)

**01:30 pm – 02:30 pm | LUNCH**

**Rabindranath Tagore Hall**

02:30 pm - 03:45 pm
<b>Myocardial Strain imaging:</b> 1.What is strain? 2.How to perform speckle –tracking echo & assure quality 3.How to interpret & caveats 4.Clinical Applications 5.Is there a value of Bulls Eye Plot? 6.Limitations & solutions  <b>V Amuthan</b> (Madurai) <b>Manish Bansal</b> (Gurugram)  EXPERT CRITIQUE <b>Erwan Donal</b> (France) <b>Nitin Burkule</b> (Mumbai)

**C V Raman Hall**

02:30 pm - 03:45 pm
<b>Myocardial Strain imaging:</b> 1.What is strain? 2.How to perform speckle –tracking echo & assure quality 3.How to interpret & caveats 4.Clinical Applications 5.Is there a value of Bulls Eye Plot? 6.Limitations & solutions  <b>Rakesh Gupta</b> (Delhi) <b>V Vatchsala Sree</b> (Vellore)  EXPERT CRITIQUE <b>Mani Vannan</b> (USA)

**Mother Teresa Hall**

02:30 pm - 03:45 pm
<b>Myocardial Strain imaging:</b> 1.What is strain? 2.How to perform speckle –tracking echo & assure quality 3.How to interpret & caveats 4.Clinical Applications 5.Is there a value of Bulls Eye Plot? 6.Limitations & solutions  <b>R Manivasagam</b> (Trichy) <b>Shantanu Sengupta</b> (Nagpur)  EXPERT CRITIQUE <b>Krasimira Hristova</b> (Bulgaria)

**Amartya Sen Hall**

02:30 pm - 03:45 pm
<b>Cardiac MRI: Application in day to day practice (Basic &amp; Advanced Integrated)</b> • CMR in Ischemic heart disease – (20 mins) Vijaya Bhaskar Nori (Hyderabad) • CMR in Non-Ischemic Cardiomyopathy – (20 mins) Rajesh Kannan (Kochi) • CMR in Cardiac Masses – (20 mins) Bhavin Jankharia (Mumbai)  EXPERT CRITIQUE <b>Bhavin Jankharia</b> (Mumbai) (Questions – 15mins)

**03:45 pm - 04:05 pm | TEA BREAK**

04:15 pm - 05:30 pm
<b>Prosthetic valve</b> 1. Introduction to types of prosthetic valves 2. How does their hemodynamics differ from native valve – concept of EROA 3. Echo - anatomic demonstration of certain types of prosthetic valves 4. Normal vs abnormal prosthetic valve & gradients 5. Stepwise approach when the gradient is high / increasing in follow up 6. Pannus, thrombus. How to differentiate 7. How to report a prosthetic valve case 8. Recorded studies of dysfunctional prosthetic valve. What is the abnormality  <b>Rishikesh Shah</b> (Mumbai) <b>Ashok Garg</b> (Jaipur)  EXPERT CRITIQUE <b>Sameer Shrivastava</b> (Delhi)

04:15 pm - 05:30 pm
<b>Prosthetic valve</b> 1. Introduction to types of prosthetic valves 2. How does their hemodynamics differ from native valve – concept of EROA 3. Echo - anatomic demonstration of various types of prosthetic valves 4. Normal vs abnormal prosthetic valve & gradients 5. Stepwise approach when the gradient is high / increasing in follow up 6. Pannus, thrombus. How to differentiate 7. How to report a prosthetic valve case 8. Recorded studies of dysfunctional prosthetic valve. What is the abnormality  <b>C K Ponde</b> (Mumbai) <b>Mohsin Ansari</b> (Mumbai)  EXPERT CRITIQUE <b>R R Kasliwal</b> (Gurugram)

04:15 pm - 05:30 pm
<b>Prosthetic valve</b> 1. Introduction to types of prosthetic valves 2. How does their hemodynamics differ from native valve – concept of EROA 3. Echo - anatomic demonstration of various types of prosthetic valves 4. Normal vs abnormal prosthetic valve & gradients 5. Stepwise approach when the gradient is high / increasing in follow up 6. Pannus, thrombus. How to differentiate 7. How to report a prosthetic valve case 8. Recorded studies of dysfunctional prosthetic valve. What is the abnormality  <b>Satish Govind</b> (Bengaluru) <b>Atul Karande</b> (Indore)  EXPERT CRITIQUE <b>S K Parashar</b> (Delhi)

04:15 pm - 05:30 pm
<b>Cardiac CT: Applications in Clinical Practice (Basic &amp; Advanced Integrated)</b> • Cardiac CT in chronic stable angina – (20 mins) Vijaya Bhaskar Nori (Hyderabad) • CCT in stents and CABG – (15 mins) Bhavin Jankharia (Mumbai) • Role of CCT in emergency department – (20 mins) Vijaya Bhaskar Nori (Hyderabad) • Role of CT FFR in Coronary artery-disease – (15 mins) Bhavin Jankharia (Mumbai)  EXPERT CRITIQUE <b>Y Chandrashekhar</b> (USA) <b>Rajesh Kannan</b> (Kochi)

**6:15 pm onwards | IAE EXECUTIVE COMMITTEE MEETING**

## Rabindranath Tagore Hall

8:30 am - 9:30 am

## Case Studies: Unusual Echo Encounters

1. Dissections in the heart (Intramyocardial, LA, RV) **Vinayak Agrawal** (Gurugram)
2. RV dysfunction after pericardiectomy **Vivek Tandon** (Delhi)
3. Fetal spontaneous hemopericardium. Only case reported in literature **U P Singh** (Chandigarh)
4. A forgotten etiology of myocarditis **S K Parashar** (Delhi)
5. High gradient across aortic PHV - immediate post operative period **Sameer Shrivastava** (Delhi)
6. Raghb Syndrome: A rare entity **Amit Misri** (Gurugram)
7. A case of reversible dilated cardiomyopathy **Manish Bansal** (Gurugram)

## Chairpersons:

**V Amuthan** (Madurai)  
**Sourangshu Chatterjee** (Kolkata)  
**Mahesh Chowdhary** (Kolkata)

## C V Raman Hall

8:30 am - 9:30 am

## Case Studies: Congenital Heart Disease

1. Post operative PDA with Cyanosis **G Vijayaraghavan** (Trivandrum)
2. Congenital mitral stenosis **J C Mohan** (Delhi)
3. Rarest of rare case of aneurysm of sinus of Valsalva **I B Vijayalakshmi** (Bengaluru)
4. Anomalous pulmonary artery membrane at the bifurcation causing right pulmonary artery orifice obstruction **Saji Philip** (Kattanam)
5. The Da Vinci Code **Sonia El Saiedi** (Egypt)
6. Congenital severe MS: Parachute mitral valve with large VSD mild PS in 10 yr CHD old male. VSD repaired successfully, however severe MR induced after open valvectomy for MS (appropriate size valve not available with severe PAH and TR post operative period) **K K Kapur** (Delhi)
7. Incidental detection of transposition of great arteries in an adult: Rarest of the rare **Debika Chatterjee** (Kolkata)

## Chairpersons:

**K Sivakumar** (Chennai)  
**Anil Kumar Singhi** (Kolkata)  
**Dhritabrata Das** (Kolkata)

## Mother Teresa Hall

8:30 am - 9:30 am

## Case Studies: Cases where Multimodality Imaging made a difference

1. Multimodality Imaging of STEMI post thrombolysis **Nitin Burkule** (Mumbai)
2. Ruptured SOV aneurysm: Role of multimodality imaging in planning **Raj Janardhanan** (USA)
3. ... Between a rock and hard place **Sudhir Wahi** (Australia)
4. & 5. DiAl a friend if you do not know the answer (2 cases) **R Alagesan** (Chennai)
6. MRI - The third eye of histopathology **Sanjaya Viswamitra** (Bengaluru)
7. A case of complex CHD **Rajesh Kannan** (Kochi)

## Chairpersons:

**Dhiman Kahali** (Kolkata)  
**Sanjaya Viswamitra** (Bengaluru)  
**Tapan Sinha** (Kolkata)

## Amartya Sen Hall

8:30 am - 9:30 am

## Case Studies: Unusual Valvular Lesions &amp; TEE

1. Bicuspid aortic valve and aortopathy-F/u case of AVR... after 9 years presented with ascending aortic aneurysm and dissection...echo picture shows a large mass (thrombus in false lumen) TEE done and case operated **Rekha Mishra** (Delhi)
2. A case of AML perforation - **N Vijayasathy** (Madurai)
3. A case of mitral clip - **Erwan Donal** (France)
4. Unusual case of mitral arcade **K Chandrasekaran** (USA)
5. A cystic cavity on mitral valve: A case of post mitral valve repair **Vinayak Agrawal** (Gurugram)
6. Degenerated tissue mitral PHV with severe MR: What should I do? (mitral valve in valve) **Vinayak Agrawal** (Gurugram)
7. A case of acute severe mitral stenosis **Vivek Tandon** (Delhi)

## Chairpersons:

**Shishu Shankar Mishra** (Bhubaneswar)  
**S Balasubramanian** (Madurai)  
**Ashok Kumar Giri** (Kolkata)

**Rabindranath Tagore Hall**

**C V Raman Hall**

**Mother Teresa Hall**

**Amartya Sen Hall**

9:30 am - 10:30 am	9:30 am - 10:30 am	9:30 am - 10:30 am	9:30 am - 10:30 am
<b>Symposium: Hypertrophic Cardiomyopathy</b> <ul style="list-style-type: none"> <li>Different facets of HCM <b>S Shanmugasundaram</b> (Chennai)</li> <li>Evaluation of HCM mimickers <b>Sameer Shrivastava</b> (Delhi)</li> <li>Multimodality imaging in HCM <b>Raj Janardhanan</b> (USA)</li> <li>Different faces &amp; different treatment <b>G Vijayaraghavan</b> (Trivandrum)</li> </ul> <p><i>Chairpersons:</i>  <b>Sankar Mitra</b> (Kolkata)  <b>Arup Das Biswas</b> (Kolkata)  <b>S T Yavagal</b> (Bengaluru)</p>	<b>Symposium: Congenital Heart Disease</b> <ul style="list-style-type: none"> <li>Tetralogy of Fallots &amp; What all I can get from echo <b>K Siva Kumar</b> (Chennai)</li> <li>Ventricular dysfunction in children - A search for reversible causes <b>I B Vijayalakshmi</b> (Bengaluru)</li> <li>Complex cyanotic heart disease - A simplified approach <b>B R J Kannan</b> (Madurai)</li> <li>Clinical and echocardiographic interpretation of left to right shunts <b>Hala Almarsafawy</b> (Egypt)</li> </ul> <p><i>Chairpersons:</i>  <b>Achyut Sarkar</b> (Kolkata)  <b>Debabrata Roy</b> (Kolkata)  <b>Biswajit Bandopadhyay</b> (Kolkata)  <b>Dipankar Mukherjee</b> (Kolkata)</p>	<b>Symposium: Role of Multimodality Imaging in Evaluation of Pulmonary Hypertension</b> <ul style="list-style-type: none"> <li>Assessment in Echocardiography Lab: Usefulness &amp; fallacies <b>Sudhir Wahi</b> (Australia)</li> <li>Role of Computed Tomography <b>Y Chandrashekhhar</b> (USA)</li> <li>Role of CMR <b>Rajesh Kannan</b> (Kochi)</li> <li>Does exercise testing have a role <b>Abhijit Chatterjee</b> (Kolkata)</li> </ul> <p><i>Chairpersons:</i>  <b>R J Manjuran</b> (Triruvalla)  <b>Biswakes Majumder</b> (Kolkata)  <b>P C Mondal</b> (Kolkata)</p>	<b>Symposium: Traversing the Broad Spectrum of Cardiology</b> <ul style="list-style-type: none"> <li>Management of AF patients with ACS undergoing PCI <b>Suvro Banerjee</b> (Kolkata) *Pfizer</li> <li>Potential roles of ICE (Intracardiac Echocardiography) in Cardiac Interventions <b>Prakash Hazra</b> (Kolkata) *Boston</li> <li>Role of advanced CRT features and how it improves overall outcome of heart failure patients <b>Anil Mishra</b> (Kolkata) *St.Jude's Medical</li> <li>Uses of NOAC in Coronary Artery Disease and Peripheral Artery Disease <b>Subhasish Roy Chowdhury</b> (Kolkata) *Bayer Zydus</li> <li>A tryst with Cardiac Masses <b>Venkatesh Gurajala</b> (Bengaluru)</li> </ul> <p><i>Chairpersons:</i>  <b>S B Nagori</b> (Kolkata)  <b>Saumitra Ray</b> (Kolkata)  <b>B N Jha</b> (Kolkata)  <b>Ashish Sinha</b> (Bhagalpur)</p>
<b>10:40 am - 11:00am   Coffee Break</b>			
<b>11:00 am - 1:00 pm   Plenary Session</b>			
11:00 am - 11:18 am			
<b>Annual IAE Lecture:</b> Point Of Care UltraSound (POCUS) in cardiology practice - A Dark Horse or a White Horse? <b>C K Ponde</b> (Mumbai)			
<p><i>Chairpersons:</i>  <b>H K Chopra</b> (Delhi)  <b>Bogdan A Popescu</b> (Romania)</p>			
11:20 am - 11:40 am			
<b>Bijoy K Khandheria Oration</b> <b>Sameer Shrivastava</b> (Delhi)			
<p><i>Chairpersons</i>  <b>S Shanmugasundaram</b> (Chennai)  <b>Soumitra Kumar</b> (Kolkata)</p>			

Rabindranath  
Tagore HallC V Raman  
HallMother Teresa  
HallAmartya Sen  
Hall

11:45am – 12:45 pm

**Joint Academic Session with  
EACVI**

- Left ventricular diastolic function assessment - what's new? **Bogdan A Popescu** (Romania)
- Heart Failure with Preserved Ejection Fraction : New insights and dilemmas **S K Parashar** (Delhi)
- GLS vs Strain Rate: Comparative significance: In whom & when **Erwan Donal** (France)
- 3-D RVEF: Has it come of age **Satish Govind** (Bengaluru)

*Chairpersons:***Sameer Shrivastava** (Delhi)**Roxy Senior** (UK)

12:50 pm – 1:05 pm

**Special Lecture:**

Does Artificial Intelligence Truly Augment Our Intelligence **Devyani Chowdhury** (USA)

*Chairpersons***Anjan Lal Dutta** (Kolkata)**Satish Govind** (Bengaluru)

1:05 pm – 2:00 pm | Lunch &amp; Visit Exhibits



**Rabindranath Tagore Hall**

8:30 am – 9:30 am
<b>Cases Exotica: Mixed bag</b> 1. Intra-operative echo: Cases where echo made a difference <b>Madhav Swaminathan</b> (USA) 2. A rare case of pulmonic endocarditis <b>Maurizio Parato</b> (Italy) 3. An interesting case of LV hypertrophy <b>Raj Janardhanan</b> (USA) 4. Coronary Anomalies <b>J C Mohan</b> (Delhi) 5. Ostium Primun ASD with persistent LSVC opening in to unroofed coronary sinus - A Rare Entity <b>Ashok Garg</b> (Jaipur) 6. A strange case of interventricular septum bulging in an autoimmune disease <b>Maurizio Parato</b> (Italy) 7. What is causing this "Cherry on Top" on strain imaging? <b>Kameswari Maganti</b> (USA)  <i>Chairpersons:</i> <b>Satish Govind</b> (Bengaluru) <b>Pranita Nandy</b> (Kolkata) <b>Indranil Dutta</b> (Kolkata)
9:30 am - 10:40 am

**C V Raman Hall**

8:30 am – 9:30 am
<b>Case Studies: Congenital Heart Disease</b> 1. A case of double orifice mitral valve <b>N Vijayasathy</b> (Madurai) 2. Congenitally unguarded pulmonary valve orifice in adults <b>Madhu Shukla</b> (Delhi) 3. Mitral atresia, aortic atresia in HLHS, surviving due to coronaries from pulmonary artery <b>I B Vijayalakshmi</b> (Bengaluru) 4. Series of 3 cases of divided LA, RA and both in the same case <b>I B Vijayalakshmi</b> (Bengaluru) 5. A series 3 cases of unguarded tricuspid orifice with absent pulmonary valve <b>U P Singh</b> (Chandigarh) 6. Prenatal diagnosis of absent one cusp of aortic valve causing severe AR with autopsy confirmation <b>U P Singh</b> (Chandigarh) 7. The rarest of the rare <b>Sonia El Saiedi</b> (Egypt)  <i>Chairpersons:</i> <b>Achyut Sarkar</b> (Kolkata) <b>Anil Kumar Singhi</b> (Kolkata) <b>Nurul Islam</b> (Kolkata)
9:30 am – 10:40 am

**Mother Teresa Hall**

8:30 am – 9:30 am
<b>Case Studies: Intracardiac Masses &amp; Pericardium</b> 1. Rare site of a mass <b>Aniruddha De</b> (Kolkata) 2. HIV cardiomyopathy and mass <b>Aniruddha De</b> (Kolkata) 3. A collection of masses in RA <b>Kameswari Maganti</b> (USA) 4. Vegetations in a normal heart <b>Nitin Burkule</b> (Mumbai) 5. Pericardial effusion with RV mass <b>G Vijayaraghavan</b> (Trivandrum) 6. Cardiac tamponade due to extra cardiac compression ..turned out to be anterior mediastinum Hodgkin's lymphoma ..follow up echo done <b>Rekha Mishra</b> (Delhi) 7. Mass attached to MV <b>Rakesh Gupta</b> (Delhi)  <i>Chairpersons:</i> <b>R Alagesan</b> (Chennai) <b>Neil Bardoloi</b> (Guwahati) <b>Biswarup Lahiri</b> (Kolkata)
9:30 am – 10:40 am

**Amartya Sen Hall**

8:30 am – 9:30 am
<b>Case Studies: Echo in Acute Cardiac Care Setting</b> 1. A rare complication post PCI <b>Vivek Tandon</b> (Delhi) 2. Echo in emergency room - The ticking "bomb" that exploded on our face - A most dramatic real life shocker caught on ECHO <b>Prayaag Kini</b> (Bengaluru) 3. Pericardial tamponade due to main pulmonary artery dissection <b>Shivam Dutt</b> (Ludhiana) 4. Post MI free wall rupture , VSR cases <b>Anitha Ponnarasu</b> (Bengaluru) 5. Post VSR vs free wall rupture <b>Aniruddha De</b> (Kolkata) 6. Where Echo saved two lives <b>Prayaag Kini</b> (Bengaluru) 7. Idiopathic infantile arterial calcification presenting as refractory heart failure in a newborn <b>Ganesan Nambirajan</b> (Madurai)  <i>Chairpersons:</i> <b>Arup Das Biswas</b> (Kolkata) <b>Bikash Bhattacharya</b> (Kolkata) <b>Rajat Datta</b> (Kolkata)
9:30 am – 10:40 am

## Rabindranath Tagore Hall

### Symposium: Myocardial Ischemia

- Acute coronary syndrome in young women **Fabiola Sozzi** (Italy)
- Perfusion imaging in stress echo comes of age **Roxy Senior** (UK)
- Contribution of nuclear cardiology in diagnosis, prognosis and risk stratification in coronary artery disease **GN Mahapatra** (Mumbai)
- Regional wall motion abnormality: Methods to improve diagnostic accuracy **Atul Karande** (Indore)

#### Chairpersons:

**Sudhir Wahi** (Australia)  
**Manoranjan Mondal** (Kolkata)  
**Suvro Banerjee** (Kolkata)

## C V Raman Hall

### Symposium: Congenital Heart Disease

- Ebstein Anomaly: What is new & its variants **Sonia El Saiedi** (Egypt)"
- What all should I look for in a child with VSD ? **Saji Philip** (Kerala)
- Echocardiographic diagnosis of coarctation of aorta: Evolution from a pediatric patient to an adult **Devyani Chowdhury** (USA)
- Congenital abnormalities of mitral valve **S Ramakrishnan** (Delhi)"

#### Chairpersons:

**I B Vijayalakshmi** (Bengaluru)  
**Dipankar Mukherjee** (Kolkata)  
**U P Singh** (Chandigarh)

## Mother Teresa Hall

### Symposium: Quantification of LV Systolic Function in Daily Practice: Status 2019

- Techniques which I can use in daily clinical practice **R J Manjuran** (Triruvalla)
- Should I be using strain routinely **R Manivasagam** (Trichy)
- Strain vs 3-D echo: Which one to use if I have a choice **V Amuthan** (Madurai)
- Myocardial fibrosis: Is it the new EF? **Mani Vannan** (USA)

#### Chairpersons:

**Geetha Subramanian** (Varanasi)  
**Hansa Gupta** (Gurgaon)  
**Debasish Bandopadhyay** (Kolkata)

## Amartya Sen Hall

### Symposium: For beginners: The Added Value of Strain to Widen your Clinical Skills

- What is strain, how to acquire & assure quality **Manish Bansal** (Gurugram)
- How to interpret and what are the caveats. Should it be routinely employed in daily clinical practice **Rakesh Gupta** (Delhi)
- Common clinical scenarios where strain gives significant information **G Vijayaraghavan** (Trivandrum)
- Role in improved detection of ischemia in coronary artery disease **Rahul Mehrotra** (Delhi)
- Role in assessing risk for sudden cardiac death **Krasimira Hristova** (Bulgaria)

#### Chairpersons:

**Sankar Mitra** (Kolkata)  
**P S Banerjee** (Kolkata)  
**Sudarshan Nagpal** (Saharanpur)

10:40 am – 11:00 am | Coffee Break

11:00 am – 1:00 pm | Plenary Session

11:00 am – 11:20 am

### IAE Silver Jubilee Lecture

How to interpret discordant aortic stenosis? **Roxy Senior** (UK)

#### Chairpersons:

**H K Chopra** (Delhi)  
**Rakesh Gupta** (Delhi)

11:20 am – 11:40 am

### Navin C Nanda Oration

Perioperative Echocardiography: Unique challenges of the intraoperative environment  
**Madhav Swaminathan** (USA)

#### Chairpersons:

**S K Parashar** (Delhi)  
**Soumitra Kumar** (Kolkata)

**Rabindranath Tagore Hall**

**C V Raman Hall**

**Mother Teresa Hall**

**Amartya Sen Hall**

**11:45 am – 12:45 pm**

**Joint Academic Session with American Society of Echocardiography**

- Stress induced CM: Mechanisms including microvascular dysfunction **Sunil Mankad** (USA)
- Echoes from left atrium ! Early warning of CV risk **Nitin Burkule** (Mumbai)
- 3D Echo: Where does it fit into everyday practice? **Sunil Mankad** (USA)
- Mysteries of Pericardium **G Vijayaraghavan** (Trivandrum)

*Chairpersons:*

**Sameer Shrivastava** (Delhi)  
**Madhav Swaminathan** (USA)

**12:50 pm - 1:05 pm**

Top 10 Recent Advances in Echocardiography : An Editor's Viewpoint **Y Chandrashekhar** (USA)

*Chairpersons:*

**Bogdan Popescu** (Romania)  
**P Krishnam Raju** (Hyderabad)

**1:10 pm – 2:00 pm | Lunch & Visit Exhibits**

**2:00 pm – 3:00 pm**

**Special lectures by Masters**

- Myocardial Viability – A concept that's not dead **Sunil Mankad** (USA)
- The future of stress testing - Will it be different? **Y Chandrashekhar** (USA)
- Four decades experience in infective endocarditis (Case based presentation) **R Alagesan** (Chennai)
- PET, CT Fusion imaging in cardiology **P Krishnam Raju** (Hyderabad)

*Chairpersons:*

**G Vijayaraghavan** (Trivandrum)  
**Pradip Kumar Deb** (Kolkata)  
**Vivek Tandon** (Delhi)

**2:00 pm – 3:00 pm**

**Symposium: Become Expert in Doppler: We show, you interpret: An Interactive Session**

*Presenters:*

**Kameswari Maganti** (USA)  
**J C Mohan** (Delhi)  
**Sudhir Wahi** (Australia)

*Chairpersons:*

**K Chandrasekaran** (USA)  
**Roxy Senior** (UK)  
**A V Anjaneyulu** (Hyderabad)

**2:00 pm – 3:00 pm**

**Symposium: Stress Echocardiography with the Experts**

- Ischemic heart disease cases **Roxy Senior** (UK)
- Non ischemic heart disease cases **Rishikesh Shah** (Mumbai)
- Cases where 2-D strain & contrast echo proved diagnostic **Nitin Burkule** (Mumbai)
- Which stress echo variables have strong prognostic power **Fabiola Sozzi** (Italy)

*Chairpersons:*

**G Gnanavelu** (Chennai)  
**Debika Chatterjee** (Kolkata)  
**R L Joshi** (Kolkata)

**2:00 pm – 2:30 pm**

**Symposium: Imaging in TAVR**

- Role of Echo (TTE/TEE) in pre, per and post procedural assessment of TAVR **Manish Bansal** (Gurugram)
- CT -guideline in planning & execution of TAVR procedure **Praveen Chandra** (Delhi)  
\*(Medtronic)

*Chairpersons:*

**Subhanan Ray** (Kolkata)  
**Debashis Ghosh** (Kolkata)  
**Sajal Banerjee** (Bangladesh)

Rabindranath  
Tagore HallC V Raman  
HallMother Teresa  
HallAmartya Sen  
Hall

			2:35 pm – 3:15 p.m
			<b>Symposium: Imaging for Guidance of Device Therapy in HF</b> <ul style="list-style-type: none"> <li>• Role of imaging in selecting patients for CRT- P, ICD &amp; CRT- D <b>Aditya Kapoor</b> (Lucknow)</li> <li>• Comparison of adaptive CRT pacing with Echo-guided optimization <b>Amit Vora</b> (Mumbai)</li> <li>• CV Imaging for evaluation of patients before and after ventricular assist devices <b>Sanjay Mittal</b> (Delhi) *(Medtronic)</li> </ul> <p><i>Chairpersons:</i>  <b>Fazlur Rahman</b> (Bangladesh)  <b>B P Pandey</b> (Kolkata)  <b>Prakash Hazra</b> (Kolkata)</p>
3:00 pm – 4:30 pm	3:00 pm – 4:30 pm	3:00 pm – 4:00 pm	3:30 pm – 4:30 pm
<b>Symposium: Valvular Heart Disease</b> <ul style="list-style-type: none"> <li>• Aortic regurgitation: Assessment of etiology &amp; severity : <b>Rachel Daniel</b> (Kollam)</li> <li>• Gradient vs valve area, mismatch in MS: How do I interpret severity <b>Vinayak Agrawal</b> (Gurugram)</li> <li>• Cardiac MRI in valve disease: When to do it .what is the incremental value <b>Sanjaya Viswamitra</b> (Bangalore)</li> <li>• Role of echo in transcatheter interventions <b>Sanjay Mittal</b> (Delhi)</li> <li>• Present &amp; future of percutaneous mitral valve <b>Sunil Mankad</b> (USA)</li> </ul> <p><i>Chairpersons:</i>  <b>Anjan Lal Dutta</b> (Kolkata)  <b>Dipak Sarma</b> (Jorhat)  <b>Manish Bansal</b> (Gurugram)</p>	<b>Symposium: Unwanted Problems in Prosthetic Heart Valve: Diagnosis &amp; Management</b> <ul style="list-style-type: none"> <li>• For the beginners: How to evaluate prosthetic valve and avoid common errors. <b>Sunil Mankad</b> (USA)</li> <li>• Patient- prosthesis mismatch <b>Rishikesh Shah</b> (Mumbai)</li> <li>• Issues in Prosthetic valve obstruction : Look beyond the elevated gradients <b>Venkatesan Sangareddi</b> (Chennai)</li> <li>• Quantifying abnormalities of MVR and AVR <b>Ashok Garg</b> (Jaipur)</li> <li>• Bioprosthetic valve thrombosis <b>Nandita Chakraborty</b> (Kolkata)</li> </ul> <p><i>Chairpersons:</i>  <b>D P Sinha</b> (Kolkata)  <b>Neil Bardoloi</b> (Guwahati)  <b>Munna Das</b> (Kolkata)  <b>Biswajit Majumder</b> (Kolkata)</p>	<b>Symposium: Disorders of Aorta; Multi-modality Imaging (case based presentation with take home message)</b> <ul style="list-style-type: none"> <li>• Aortic dissection <b>Mona Bhatia</b> (Delhi)</li> <li>• Aortic aneurysm <b>D Karthikeyan</b> (Chennai)</li> <li>• Bicuspid aortic valve disease or Bicuspid aortic valve syndrome <b>D Karthikeyan</b> (Chennai)</li> <li>• Role in aortic surgery; what does the surgeon need from the imager <b>Raj Janardhanan</b> (USA)</li> <li>• Aorto-arteritis in 2019 <b>D Karthikeyan</b> (Chennai)</li> </ul> <p><i>Chairpersons:</i>  <b>Y Chandrashekhhar</b> (USA)  <b>Najrul Islam</b> (Bangladesh)  <b>Arunangshu Ganguly</b> (Kolkata)  <b>Sunip Banerjee</b> (Kolkata)</p>	<b>Symposium: AF and HEART FAILURE- A Deadly Cocktail</b> <ul style="list-style-type: none"> <li>• Case Studies on HF/AF – 2 Case Studies</li> <li>1. Echo of a young man with aborted sudden cardiac death - <b>Nitin Burkule</b> (Mumbai)</li> <li>2. Arrhythmogenic left atrial cardiomyopathy - <b>J C Mohan</b> (Delhi)</li> <li>• Role of Imaging (TEE &amp; ICE) in percutaneous closure of LAA <b>Praveen Chandra</b> (Delhi)</li> <li>• Multimodality Imaging for best dealing with patients in atrial arrhythmias <b>Erwan Donal</b> (France)</li> <li>• Anticoagulation therapy and NOACs in heart failure <b>Arup Das Biswas</b> (Kolkata)</li> </ul> <p><i>Chairpersons:</i>  <b>R J Manjuran</b> (Triruvalla)  <b>Pranab Kumar Biswas</b> (Kolkata)  <b>Sujit Kumar Saha</b> (Kolkata)</p>

Rabindranath Tagore Hall	C V Raman Hall	Mother Teresa Hall	Amartya Sen Hall
		4:05 pm – 4:35 pm	
		<b>Free Interactive Discussion with Masters on RV Function</b> <i>Moderator:</i> <b>Satish Govind</b> (Bengaluru) <i>Discussants:</i> <b>Mani Vannan</b> (USA) <b>Rahul Mehrotra</b> (Delhi) <b>Mona Bhatia</b> (Delhi)	
1:10 pm – 2:00 pm   Lunch & Visit Exhibits			
4:30 pm – 4:45pm   Coffee Break			
4:45 pm – 6:00 pm	4:45 pm – 6:00 pm	4:50 pm – 6:00 pm	4:45 pm – 6:00 pm



## Rabindranath Tagore Hall

### Case Studies from around the Globe by National & International Icons

1. Isolated LA cardiomyopathies **Nitin Burkule** (Mumbai)
2. Post Traumatic VSR **G Vijayaraghavan** (Trivandrum)
3. Cactus in my heart **J C Mohan** (Delhi)
4. Post TAVR complication **Roxy Senior** (UK)
5. A complex case of multiple LVOT obstruction **Maurizio Parato** (Italy)
6. Coronary artery fistula **Fabiola Sozzi** (Italy)
7. A case of tricuspid clip **Erwan Donal** (France)

#### Chairpersons:

**Nitin Burkule** (Mumbai)  
**Suvro Banerjee** (Kolkata)  
**Goutam Datta** (Kolkata)

## C V Raman Hall

### Symposium: Special Echo Salsa Session: Unforgettable topics

- Challenges in diagnosis and management of tricuspid regurgitation **CK Ponde** (Mumbai)
- Restrictive cardiomyopathy: Tips and tricks in diagnosis, caveats **S Shanmugasundaram** (Chennai)
- Cardio-oncology: An upcoming specialty. How is echo useful to monitor therapy **Hardeep Grewal** (Gurgaon)
- Echo guided percutaneous closure of common congenital defects **Achyut Sarkar** (Kolkata)
- Diagnosing Grade 1 diastolic dysfunction in "Hale and healthy": Perils and pearls **Venkatesan Sangareddi** (Chennai)
- Hemodynamic collapse in CCU: How to approach **Rahul Mehrotra** (Delhi)

#### Chairpersons:

**Rahul Mehrotra** (Delhi)  
**Dipankar Ghosh Dastidar** (Kolkata)  
**Arindam Pandey** (Kolkata)

## Mother Teresa Hall

### A Positive Duet between Echo & Multimodality Imaging: Case Studies

1. It takes two to tango **G N Mahapatra** (Mumbai)
2. It was the light at the end of the tunnel **Johann Christopher** (Hyderabad)
3. We had barked up the wrong tree **Mona Bhatia** (Delhi)
4. We were shooting in the dark **G N Mahapatra** (Mumbai)
5. It's time to bury the hatchet **Johann Christopher** (Hyderabad)
6. The third umpire **Mona Bhatia** (Delhi)

#### Chairpersons:

**A K Kar** (Kolkata)  
**Rabin Chakraborty** (Kolkata)  
**Hansa Gupta** (Gurgaon)

## Amartya Sen Hall

### Unforgettable Case Studies in Congenital Heart Disease

1. Congenital coronary arterial fistula from RCA into LA is rare **S M Shankar Rajan** (Chennai)
2. Cortriatriatum sinister with osteum secundum atrial septal defect. An unusual presentation in late adulthood **Chintaka Wickramarachchi** (Sri Lanka)
3. Prenatal echo diagnosis of Ebstein's Anomaly; an autopsy correlation predicting poor prognosis **Saji Philip** (Kattanam)
4. A case of double inlet single ventricle of LV type with TGA with pulmonary stenosis presented with infective endocarditis of the pulmonary valve **Varshit Hathi** (Bengaluru)
5. Supracardiac TAPVC presenting in third decade in an adult **B Karthikeyan** (Chennai)
6. The Shy Tricuspid valve **Anil Kumar Singhi** (Kolkata)
7. Curious case of young infant presenting with shock **Debadatta Mukhopadhyay** (Kolkata)
8. RCC Perforation **Dhritabrata Das** (Kolkata)
9. A rare case of unicuspid aortic valve associated with mitral valve prolapse **Arun B S** (Bengaluru)

#### Chairpersons:

**S Ramakrishnan** (Delhi)  
**Rajat Subhra Ghose** (Kolkata)  
**Hala Almarsafawy** (Egypt)  
**Paramartha Bhattacharya** (Kolkata)

6:15 pm onwards | IAE Annual General Body Meeting in Rabindranath Tagore Hall

\*Session supported by an unrestricted academic grant from....

<b>Rabindranath Tagore Hall</b>	<b>C V Raman Hall</b>	<b>Mother Teresa Hall</b>	<b>Amartya Sen Hall</b>
<b>8:15 am – 9:05 am</b>	<b>8:15 am – 9:15 am</b>	<b>8:15 am – 9:00 am</b>	<b>8:15 am – 9:15 am</b>
<b>Echo Vignettes</b> 1. Low gradient severe mitral stenosis <b>J C Mohan</b> (Delhi) 2. Sequential apical ballooning <b>K Chandrasekaran</b> (USA) 3. Apical cardiomyopathy: A challenge in diagnosis <b>Kameswari Maganti</b> (USA) 4. Challenges faced after Heart Transplant <b>Satish Govind</b> (Bengaluru) 5. How to look for subclinical cardiomyopathy in Diabetes <b>Nitin Burkule</b> (Mumbai) 6. Masqueraders of vegetations <b>Rajat Mohan</b> (Delhi)	<b>Mixed Bag of Cases: Cases that Stumped Me</b> 1. Device closure of Post MI VSD: Is it possible for all? <b>Atul Karande</b> (Indore) 2. Uncommon case of HFpEF <b>Debika Chatterjee</b> (Kolkata) 3. Unusual cause of rapidly progressive aortic regurgitation from relapsing polycondritis <b>Sunil Mankad</b> (USA) 4. Rapidly appearing cardiac masses <b>Vassant Bikkad</b> (Mumbai) 5. The vanishing cardiac tumour <b>Hardeep Kaur Grewal</b> (Gurgaon) 6. Vanishing Vegetation <b>Aniruddha De</b> (Kolkata) 7. Making Surgical Risk Minimal for Future Correction in a Cyanotic child. <b>Nurul Islam</b> (Kolkata)	<b>Case Studies of Structural Heart Disease Leading to Left Ventricular Dysfunction</b> 1. AIDS related cardiomyopathy <b>Krasimira Hristova</b> (Bulgaria) 2. A case of amyloidosis <b>Erwan Donal</b> (France) 3. Diastology in degenerative MV <b>Shantanu Sengupta</b> (Nagpur) 4. Rare case of restrictive cardiomyopathy <b>Mehul Oswal</b> (Mumbai) 5. HFpEF and HFpEF: Does SGLT2i benefit both <b>Saubhik Kanjilal</b> (Kolkata) *(Boehringer)	<b>Sonographers: Case Study Competition</b> 1. Is there an entity called ventricularised atria? <b>S Arutpriya</b> (Chennai) 2. Cardiac masses- Vegetation on PPI lead <b>Kalyani Hendre</b> (Pune) 3. Surgical palliation of TGA with aortopulmonary window with severe pulmonary artery hypertension <b>Asavari S Tawade</b> (Chennai) 4. Right ventricular dilation with aneurysm <b>K Glory Varkey</b> (Vellore) 5. Pseudoaneurysm of mitral-aortic intervalvular fibrosa <b>Sangeeta Porwal</b> (Pune) 6. Right Atrial Thrombus in transit through patent foramen ovale <b>P Priya</b> (Tanjore)
<b>Chairpersons:</b> <b>Sukumar Ghosh</b> (Kolkata) <b>Hemendra Pandey</b> (Kolkata) <b>Sanjeev Garg</b> (Kolkata)	<b>Chairpersons:</b> <b>Rishikesh Shah</b> (Mumbai) <b>Abhijit Biswas</b> (Kolkata) <b>Dipankar Sarkar</b> (Kolkata)	<b>Chairpersons:</b> <b>Sunil Bohra</b> (Bengaluru) <b>Nandita Chakraborty</b> (Kolkata) <b>Hirakjyoti Sanyal</b> (Kolkata)	<b>Judges:</b> <b>Shishu Shankar Mishra</b> (Bhubaneswar) <b>Rakesh Gupta</b> (Delhi) <b>Manish Bansal</b> (Gurugram)
<b>9:10 am – 10:20 am</b>	<b>9:20 am – 10:00 am</b>	<b>9:00 am – 10:00 am</b>	<b>9:20 am – 10:00 am</b>

## Rabindranath Tagore Hall

### Young Investigators Research Award Session

- Assessment of 3D strain in left bundle branch block patients and their association with cardiovascular events **Niyas K Naseer** (Calicut)
- A study of left Atrial Deformation Properties By Strain imaging in mitral stenosis patients and its correlation with left atrial appendageal thrombosis **Aditya Verma** (Kolkata)
- Myocardial Acceleration during Isovolumic contraction as a novel non invasive tool to assess early RV dysfunction in patients with pulmonary hypertension **Alen Binny** (Chennai)
- Measurement of Aortic Root Dimensions by transthoracic echocardiogram in normal Indian population **Deepak Nenwani** (Chennai)
- Clinical profile of AL cardiomyopathy and response to CyborD regimen - a single tertiary care centre experience **Damodhar Reddy Gouni** (Kochi)
- 3D Echocardiographic study of acute mountain sickness **RVA Ananth** (Delhi)

#### Judges:

**Nitin Burkule** (Mumbai)  
**Satish Govind** (Bengaluru)  
**K Raghu** (Hyderabad)

## C V Raman Hall

### Symposium: Heart Failure: Why and When do people need an echo?

- Clinical decision making of HF with impaired LVEF (HFrEF) **U P Singh** (Chandigarh)
- Results of selected studies that have identified echocardiographic prognostic markers in both HFrEF and HFpEF **Sanjay Mittal** (Delhi)
- Mechanistic insights in benefits derived from SGLT2 inhibitors which may establish them as HF drugs **Arunangshu Ganguly** (Kolkata) \*(Glenmark)

#### Chairpersons:

**Ashok Kumar Kar** (Kolkata)  
**Amal Kumar Khan** (Kolkata)  
**Sukumar Ghosh** (Kolkata)

## Mother Teresa Hall

### Special Case Study Session

1. Submitral Aneurysm - A cystic mystery- a rare case of submitral aneurysm **Thomas Varghese Attumalil** (Trivandrum)
2. Valvular Heart Disease - Massive LA clot - a ticking bomb & a therapeutic dilemma **Gaurav Agarwal** (Bengaluru)
3. Aortic Syndrome - ruptured myxomatous aortic cuspal aneurysm : a singularly rare presentation **Harnish Bhatia** (Jaipur)
4. A petty quarrel leading to Hay-fire **Chakradhar DM** (Kochi)
5. Surprising case of severe aortic regurgitation in an young girl **Kishore Phepale** (Chennai)
6. Rhabdomyoma in fetus and neonate : A rare cause of heart failure and arrhythmia **Krishna Prasad** (Chandigarh)
7. A rare case of ventricular mass mimicking myocardial infarction **Amit Gangwani** (Chennai)

#### Chairpersons:

**Sankha Subhra Das** (Kolkata)  
**Chandan Misra** (Kolkata)  
**Sulagna Banerjee** (Kolkata)  
**Kaustabh Kumar Biswas** (Kolkata)

## Amartya Sen Hall

### Sonographers: Educative Symposium: What extra they need to know

- Hemodynamics; Revision of basics & flow dynamics **Mohd. Firoz** (Bangladesh)
- Normal variants in Echo **Atul Karande** (Indore)
- Principle & analysis of pulmonary and hepatic veins **Debika Chatterjee** (Kolkata)
- Interpretation & value of 2-D strain Bulls eye **S K Parashar** (Delhi)

#### Chairpersons:

**V Amuthan** (Madurai)  
**Vivek Gupta** (Delhi)  
**Aniruddha De** (Kolkata)

**10.00 am – 10.20 am | Coffee Break**

**10:30 am – 1:45 pm | PLENARY SESSION**

**10:30 am – 10:50 am**

### Natesa G Pandian Oration

Clinical skills in 2019 - What can 2D strain add to EF ? **Rakesh Gupta** (Delhi)

#### Chairpersons:

**Sunil Mankad** (USA)  
**J C Mohan** (Delhi)

Rabindranath Tagore Hall	C V Raman Hall	Mother Teresa Hall	Amartya Sen Hall
<b>10:30 am – 10:50 am</b> <b>Natesa G Pandian Case Study Competition</b> <ul style="list-style-type: none"> <li>Valvular Heart Disease - Multiple Sinus Of Valsalva aneurysm with multiple coronary artery aneurysm Lokesh <b>Pramod Chaudhuri</b> (Bengaluru)</li> <li>Ivemark Syndrome - A rare congenital heart disease <b>Anamika Gupta</b> (Jaipur)</li> <li>Acute Rheumatic Fever causing sub mitral aneurysm - A very rare case <b>M Rangamanikandan</b> (Madurai)</li> <li>An interesting case of reversible cardiomyopathy <b>S Murugarajan</b> (Chennai)</li> <li>Rare case of LV aneurysm and diverticula in tuberous sclerosis <b>S Ramesh</b> (Chennai)</li> <li>Pulmonary Hypertension - Glimpse from an upper window can help! Pratheesh <b>George Mathen</b> (Vellore)</li> <li>Coronary Cyanotic Heart Disease Case Sushant <b>Kumar Pathak</b> (Kolkata)</li> <li>Chunk of thrombus - lysis or surgery? <b>G Sailendri</b> (Chennai)</li> <li>Unusual Valve Destruction <b>Ishita Majumdar</b> (Kolkata)</li> </ul> <p><i>Judges:</i>  <b>S K Parashar</b> (Delhi)  <b>G Vijayaraghavan</b> (Trivandrum)  <b>S Ramakrishnan</b> (Delhi)</p>			
<b>12:30 pm – 1:30 pm</b>			

## Rabindranath Tagore Hall

**Echo Jeopardy: A highly educative fun filled program**  
Quiz Master: **Sunil Mankad** ( USA)

**Team A** (Defending Champions)  
Captain: **Mani Vannan** (USA)  
Members:  
**Satish Govind** (Bengaluru)  
**Manish Bansal** (Gurugram)

**Team B:**  
Captain: **Sudhir Wahi** (Australia)  
Members :  
**J C Mohan** (Delhi)  
**Shantanu Sengupta** (Nagpur)

**Team C:**  
Captain: **K Chandrasekaran** (USA)  
Members:  
**Nitin Burkule** (Mumbai)  
**K K Kapur** (Delhi)

OFFICIAL SCORERS  
**Dipankar Datta** (Kolkata)  
**Ashish Sinha** (Bhagalpur)

FINAL ARBITRATORS:  
**Sameer Shrivastava** (Delhi)  
**Soumitra Kumar** (Kolkata)

## C V Raman Hall

## Mother Teresa Hall

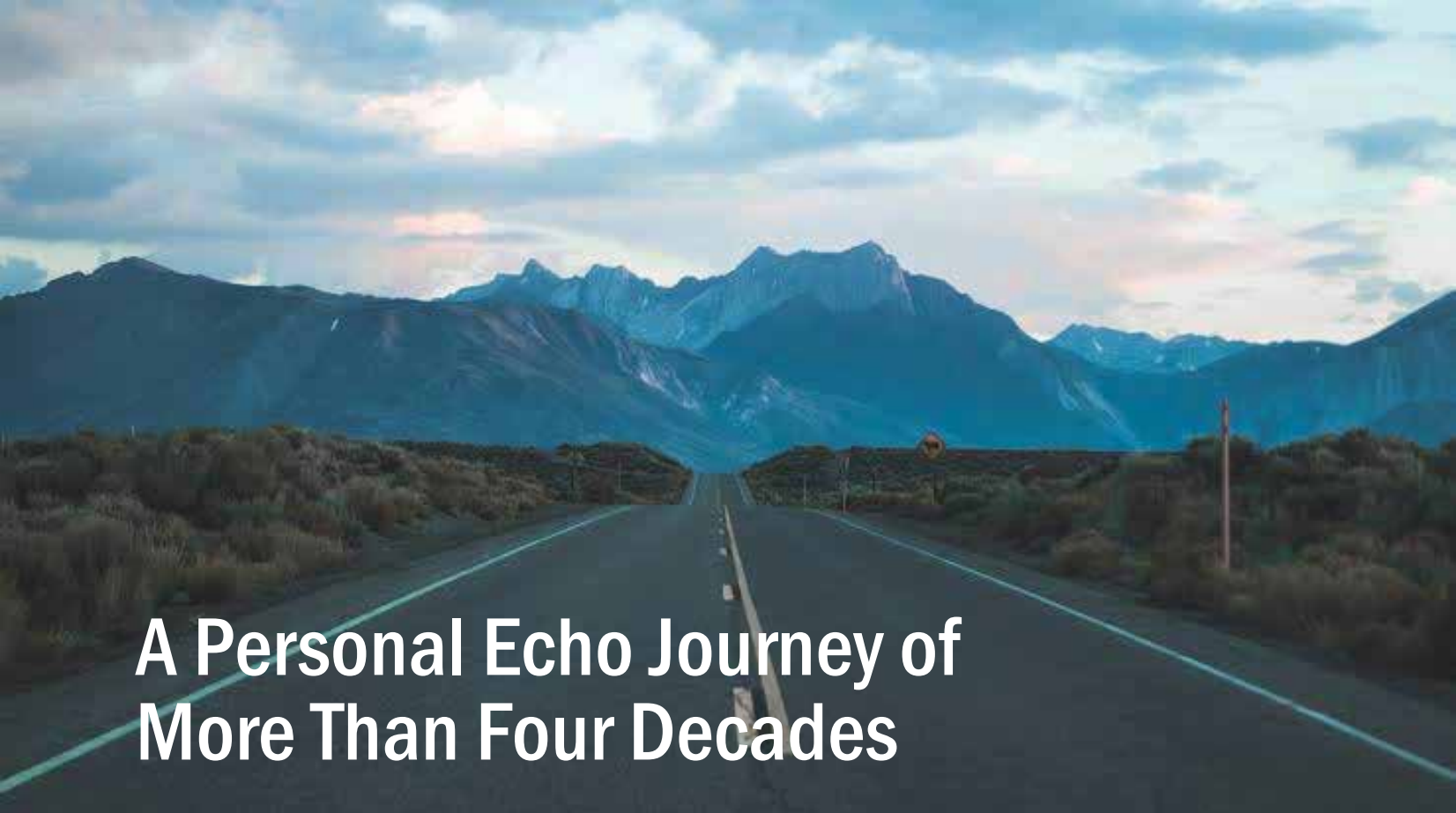
## Amartya Sen Hall

**1:45 pm – 2:00 pm**

**Next meet you at ECHO INDIA-2020, BENGALURU**

*\*Session supported by an unrestricted academic grant from...*





# A Personal Echo Journey of More Than Four Decades

Satish K Parashar\*, MD, FACC, FCSI, FIAE

Before this article was written, I would like to clarify three points. Point one, I was hounded for it by the editor for it, “being the senior most person in this field” Secondly it is not an academically oriented paper but more historical. Thirdly, even a 1% hint of self praise is fully inadvertent and unintentional.

**Beginning of the journey:** In 1975, a very senior officer of Army Medical Corps, visited Bombay (now Mumbai). There was some excitement in medical fraternity as an echo machine was installed in Port Trust Hospital. Not to lag behind, an M-mode machine was ordered for Army Hospital, Delhi. Same year, my study leave for two years in advanced cardiology in UK was approved. As such I proceeded to Army Hospital to get acquainted with this “toy” During that period, there were no echo books available to guide us nor there were any application specialists. So there was no way to learn and interpret images. I

recollect that there was a clinical and radiologically diagnosed case of pericardial effusion. So that was one of the few cases I finally recorded in mid 1975 but could interpret only in late 1975 following a good exposure to echo in UK.

## **Actual exposure to clinical echocardiography.**

In UK I had placement under Prof. Desmond Julian, at Newcastle General Hospital. During the introductory round of the department, he took me to a room having an M-Mode echo machine. His actual words were “try this machine, someday it might be useful to you”. Ultimately this short statement changed the course of my career. The echo laboratory, was operated by a young, brilliant Spanish doctor namely Dr Carlos Mortera. I virtually owe my echo career to him who really helped me in understanding this complex topic.

The present young generation may not know -that in the era of only M-mode echo, it was a Herculean task to get images as it consisted of a small screen and a pen like transducer which was manipulated

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Non-Invasive Cardiac Laboratory  
Metro Hospital & Heart Institute, New Delhi. 110024  
Tel: 91+ 9810146231 | E-mail: drparashar@yahoo.com

“blindly” to get an ice pick, single dimensional image. There were no pre-determined imaging planes and nothing on screen to guide you for further image acquisition. So it required dexterity and experience in manipulating the transducer. Moreover they were all static images with no AVI displays,.

### **A great learning experience in pediatric echo & peripheral contrast echo:**

Pediatric cardiac catheterization was performed for full two days in a week in that centre. In the evening Carlos and myself would push the echo machine to the pediatric ward which was in a separate building. Infants and children who were due for cardiac catheterization next day were echoed and an M- mode diagnosis was made. Next day, once a final diagnosis was obtained, these patients were re-echoed by us to know how much right or wrong we were and echo pictures again obtained. As the patients were on drip, so a peripheral venous contrast echo was done in relevant cases. One has to believe that excellent diagnostic pictures were obtained of all forms of complex congenital lesions.

Right to left intracardiac shunts at various levels, TGA, diagnosing patency or obstruction of atrial baffle in TGA and many other lesions were excellently demonstrated by contrast echo. One case is still fresh in my memory even after 43 years. We used to diagnose TGA from suprasternal route. It was believed that irrespective of origin of great vessels the aorta is always superiorly oriented to PA. The transverse M-mode images of aorta and PA were obtained with some difficult transducer manipulations. So if after contrast the aorta was opacified first, this indicated its origin from RV. In this particular case, the PA was differentially opacified in diastole and in systole (static image). This gave us a diagnosis of TGA with PDA. This case was presented in the Annual Scientific Meeting of British Cardiac Society.

**30 Period 1977 onwards:** That was the period of intense working, teaching, presentations etc.. I had to constantly update my knowledge as I used to

get cases from premier civil institutions in Delhi for special studies.

**My first tryst with Harvey Feigenbaum:** In the year 1984/85, in one of the cardiology conferences in Mumbai, Harvey Feigenbaum was invited. Going through my old collections, I prepared a paper entitled “M –Mode echo signs of inoperable LV aneurysm”. That was the period when any echo topic would have been selected for presentation, because echo was in an infantile stage. Harvey was one the two chairperson of that session His few words of encouragement further inspired me to get deeply absorbed in this speciality. It is a different story that how I made him smile during that session which is a rare occurrence with him. During that time 2-D echo & Doppler machines were also in use but were of substandard quality, with some equipments having only Pulsed Doppler. During that phase some of us, doing echo, were invited in virtually every medical conference to give lectures pertaining to echo. My sole aim of attending was to propagate echo as much as possible

### **Exposure to Color Doppler Echocardiography (CDE):**

During the period. 1984 – 1985, there were many publications, in international literature, of this fascinating technology and was considered as a major breakthrough in cardiovascular ultrasound. CDE was the work of a Japanese surgeon namely Omoto in Japan and Aloka was one of the first companies to produce Color Doppler equipment Our group, for the first time in 1985, organised a National Workshop on CDE in Delhi under guidance of Navin C Nanda and it was a big teaching experience. In 1985 I proceeded to Dr Nanda’s lab to get more exposure to CDE. During the period 1986-1987, several centres in India, including ours, were actively involved in using this technology and providing more complete hemodynamic information. Workshops were conducted by us in several centres in India.

**Exposure to other technologies:** In 1990/1991, I proceeded to Natesa Pandian’s laboratory in Boston to gain more experience in other newer technologies

including TEE which was a great learning experience and continues till date.

**Few frustrations & solutions:** As mentioned earlier, one of my utmost desires was to promote echocardiography in India, as there was a general lack of its awareness. Moreover that was also the period when various young cardiologists and physicians were realizing the potential of echo and wanted more knowledge and training in this specialty. However there was no forum where this facility could be provided. On my insistence a session on echo was added in Annual CSI meetings, However realizing the above facts and to promote echocardiography in India on a scientific basis, the I began to feel that there was a dire necessity to form a society dedicated to echocardiography. This

formed the basis of formation of Indian Academy \ of Echocardiography (IAE) in 1994. Since then, with the help of other colleagues, I have been actively involved in holding CME's in various parts of India and neighbouring countries, being part of training programs, organizing national and international conferences and thereby bringing IAE to international standards and recognition. How satisfying it is for me to see IAE celebrating its silver jubilee this year and my trainees and younger colleagues doing such a commendable work in echo.

***My journey continues, though not known when it will be nearing a station now!***

### What is my Future Vision in Echo

- To continue promoting dialogue, exchange and disseminating knowledge
- To implement echo quality improvement initiatives
- To facilitate education & research
- To bridge / link specialists of different levels / backgrounds as is an era of multimodality imaging & clinical based echocardiography
- To deliver more scientific guidelines & recommendations
- To provide standardized training to overall improve the echo standards in the country and maintain uniformity
- Try to becoming a worldwide reference for education in the field of echo

### What should be our Goals in 2020–2021

- Try to standardize the various echo laboratories in India
- Focus peer review on funding outstanding individuals, in addition to excellent science
- To bring a large number of young cardiologists in the fold of IAE
- To get journal of IAE indexed and bring it to an international standard which is being done under guidance of Satish Govind

# History of Echocardiography

A Pictorial Journey contributed by  
Prof Soumitra Kumar

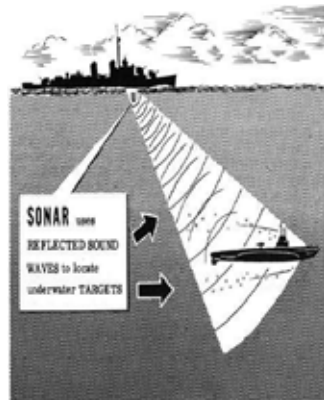


LAZZARO SPALLANZINI IN 1794  
TALKED ABOUT ECHOLOCATION IN  
RELATION TO BATS

With the  
discovery of  
*piezoelectricity*  
by the *Jacques  
Curie and  
Pierre Curie* in  
1880 came the  
ability to create  
ultrasonic  
waves from  
quartz crystals



*Paul Langevin*  
1917



- The Austrian *K. T. Dussik* was the first to apply ultrasound for medical diagnosis in 1941.
- He tried to outline the ventricles of the brain using echo-transmission, a principle similar to X-ray imaging.
- Dussik can be regarded the 'father of diagnostic ultrasound'.



Karl Theo (Theodor) Dussik  
1908 - 1988

## Clinical Cardiac Ultrasound

- The first use of echocardiography as we know it today is usually credited to *Paul Edler and Hellmuth Hertz*. 1953

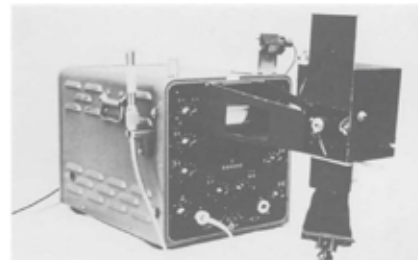
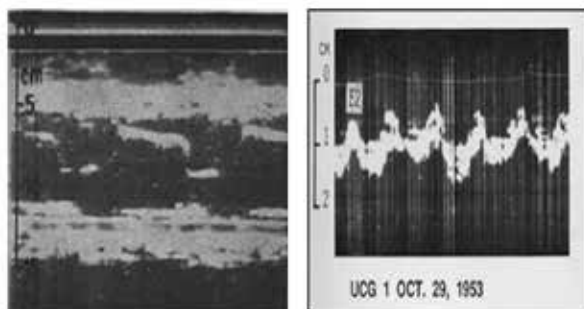


Fig. 1. The first echocardiograph. Shown is an apparatus for material testing by echo sound from Siemens and a camera with continuously running 15 mm film according to Edler and Hertz (9). The amplitude-modulated display is transmitted by means of a film in front of the film to a signal lamp. The electrocardiogram is measured by means of a reflecting galvanometer on to the fluorescent screen and is projected from there endogenously to the echo signal.





One of the earliest M-mode echocardiograms of the mitral valve, recorded by I. Edler and C. H. Hertz in December 1953. The sensitivity of the transducers used at that time allowed the recording of echoes from diseased valves only, and not from normal valves



John Wild c. 1953



John M Reid c. 1970s

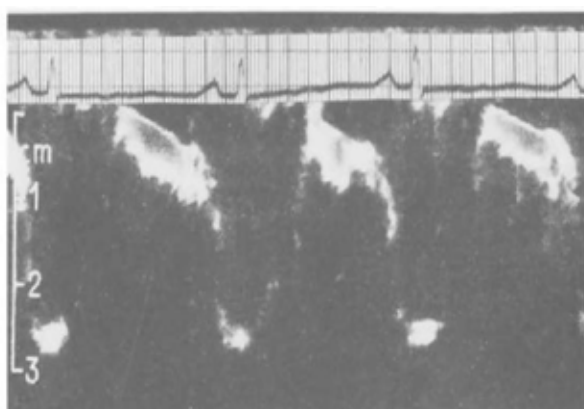


Fig. 2. First published echocardiogram of the anterior mitral valve [9]

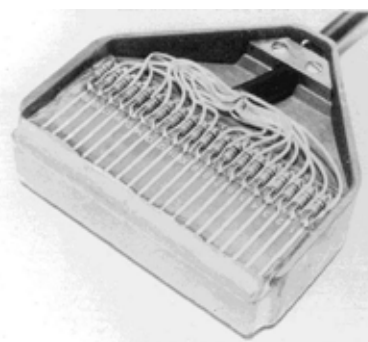


Dr. Feigenbaum with an early echocardiography machine at the IU School of Medicine. Photo courtesy the Krannert Institute of Cardiology

- The first real-time, two-dimensional scanner that gained popularity was developed by **Bom** at Rotterdam.
- This was a linear scanner, and it produced images that were like seeing the heart through a venetian blind.
- This development was a breakthrough because it had demonstrated dramatically the potential of real-time, two-dimensional cardiac imaging and turned out to be one of the major ultrasonic scanning devices for non cardiac uses.




Photograph of a multi-element transducer that provides an electronic linear scan and represents the first real-time, two-dimensional, echographic system (from Bom et al52 ).



Harvey Feigenbaum Circulation. 1996;93:1321-1327



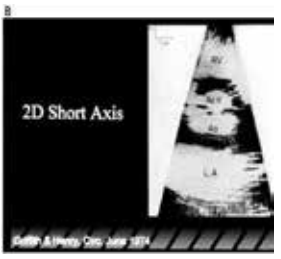
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**A**

Sector Scanner

Cutler & Henry, Circ June 1974



**B**

2D Short Axis

Cutler & Henry, Circ June 1974

A) Two-dimensional sector mechanical device using a single crystal developed by Griffith and Henry.

B) Two dimensional image of the short-axis aortic valve from that system. Ao indicates aorta; AoV, aortic valve; LA, left atrium; and RV, right ventricle.


Photograph of an early real-time sector scanner that originated as a modified electric toothbrush.



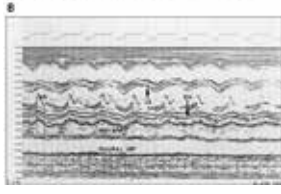
Harvey Feigenbaum Circulation. 1996;93:1321-1327

American Heart Association

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**A**




**B**

(A) Sonographer Joan Korfhagen examining a neonate with an old Hoffrel unit. Note the reel-to-reel videotape equipment at the bottom of the Hoffrel unit, which then could transfer M-mode data to a multichannel strip chart recording


(B). EN indicates endocardium; LS, left septum; and MV, mitral valve




Jan C. Somer




Somer's phased array probe.  
The frontal face is 1 x 1 cm.



**A**



**B**




**C**

Figure 8. A, Early 2-dimensional scanner. B, Examples of early 2-dimensional pointing handouts. C, Early stage of a 2-dimensional multiportal scan. Ao indicates aorta; CW, chest wall; LA, left atrium; LV, left ventricle; AoV, aortic valve; RV, right ventricle; and S, septum.

### DOPPLER ECHOCARDIOGRAPHY

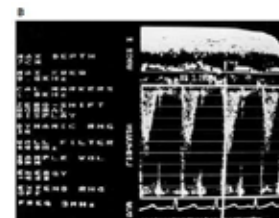
- The Austrian **C. A. Doppler (1803-1853)** worked out the mathematical relationship between the frequency shift of sound and the relative motion of the sound source and the observer, a theory tested in practice in 1845 by
- C. H. D. Buys Ballot (1817 - 1890)** in Utrecht



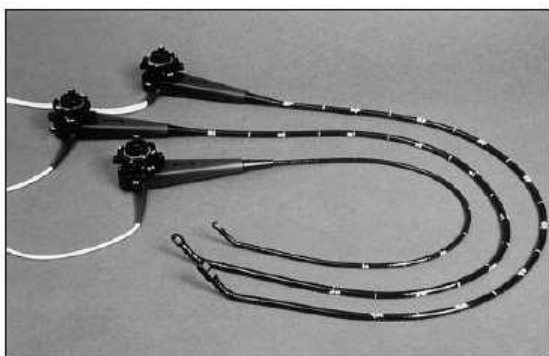
Christian Doppler  
(1803-1853)



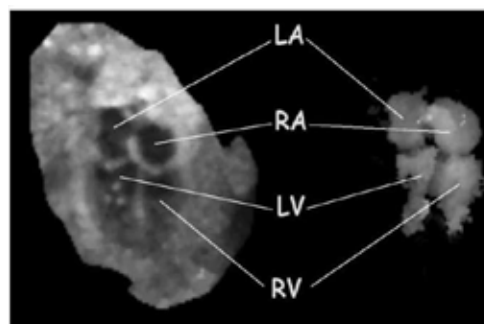
- The Bernoulli equation is now the cornerstone of the Doppler assessment of cardiac haemodynamics and was published by the Dutch born *D. Bernoulli* (1700-1782) in his treatise '*Hydrodynamica*' in 1738.
- He had formulated the relationship of the pressure drop across the inlet of an obstruction in a flow channel to the flow rate through it.



A. Early duplex scanner combining 2-dimensional and Doppler imaging.  
B. Typical pulsed Doppler data from early scanners.



Examples of transesophageal phased array element transducers mounted on endoscopes.



Static image of gated 4-dimensional fetal heart image acquisition: left, 4-chamber view; right, volume-rendered interior of the 4 chambers in the same orientation. LA indicates Left atrium; LV, left ventricle; RA, right atrium; and RV, right ventricle. (courtesy of Thomas R. Nelson, Department of Physics and Engineering, University of California, San Diego, CA).

## Twelve Years of WBAE – the journey so far...

**Prof (Dr) Soumitra Kumar**, MD, DM, FCSI, FESC, FACC, FSCAI, FICC, FICP, FIAE

Professor & HOD, Dept. of Cardiology, Vivekananda Institute of Medical Sciences, Kolkata

Chief Coordinator of Academic Services (Cardiology), NH-RTIICS, Kolkata

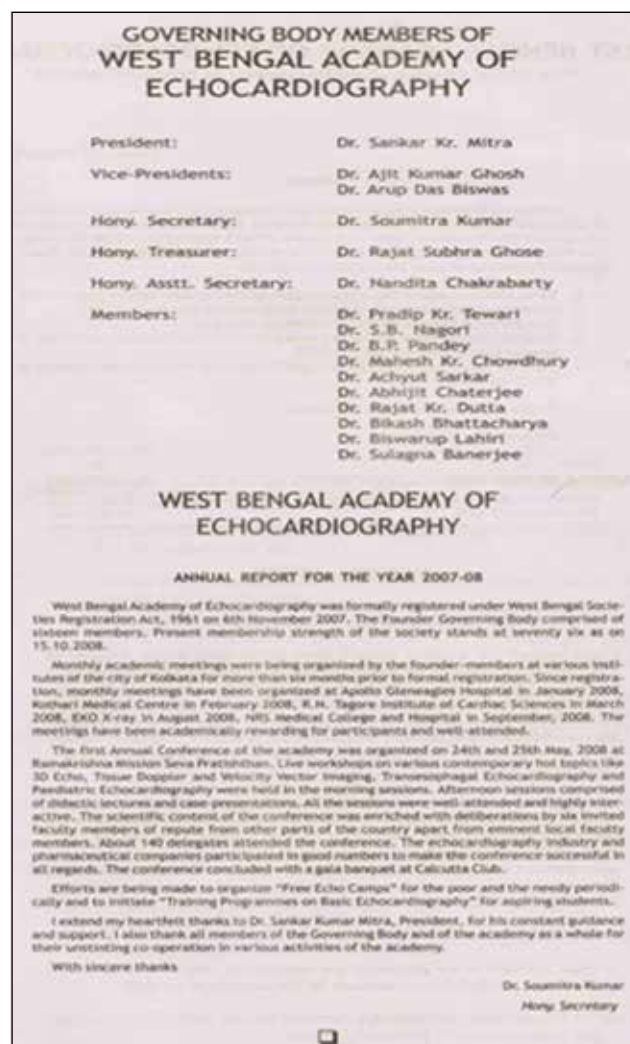


A few avid echocardiographers hailing from Kolkata were spotted by me during the API conference in 2006 discussing about the prospects of forming a local body of echocardiographers. I joined them in the discussion and volunteered to give the lead in the process. A local informal “Echo Club” was formed in Kolkata and monthly meeting on interesting Echo-cases were held at various centres. When the core group was identified, it was decided unanimously by all involved to proceed with formation of an officially registered body. “Indian Academy of Echocardiography” (IAE) in the meantime was progressively assuming the stature of a national body and it was therefore resolved that an application would be sent to IAE to seek permission for the formation of “West Bengal branch” of IAE. The requisite formalities were completed in this regard and in due course, IAE granted permission for the inception of a West Bengal branch. Dr. S.B. Nagori came forward to help us out with the seed-money of approx. Rs.2.25 lakhs that he had saved as “Organizing Secretary” of the National Conference of IAE held earlier at Kolkata. Papers were submitted to the office of Registrar of West Bengal Societies. I managed to expedite the process though some “God-sent” channels; however the Registrar objected to registration as “IAE-West Bengal Chapter” citing that the using the word “Indian” has a very broad connotation and cannot be allowed by a state body. Hence, he suggested that the association may be named as “West Bengal Academy of Echocardiography” (WBAE) and thus WBAE came into being as a formally registered body (under West Bengal Societies Registration Act, 1961) on 6th November, 2007. In essence of course, it would function as the West Bengal branch of IAE.

I took charge as the “Founder Secretary” and Dr. Sankar Mitra was the first President. Monthly academic meetings began to be organized by the founder-members in various leading institutions of

the city of Kolkata. The Governing Body members began to contemplate the scope of organizing “Free Echo Camps” for the poor and “Training Programmes on Basic Echocardiography” for aspiring learners. The membership strength of the society rose to seventy-six in the first year itself.

The first Annual Conference of the academy was organized on 24th and 25th May, 2008 at Ramakrishna Mission Seva Pratishthan. About 140 delegates attended the very first conference and all the sessions were well-attended and highly interactive.





Venue of the Conference

24th March, 2008



Dear Colleagues,

You are probably aware that "West Bengal Academy of Echocardiography" came into being as a registered society in November 2007 and it can be aptly said to be in infancy. However, it has been organizing monthly academic meetings in various institutions of the city for over a year. Formed with a view to popularize, standardize and develop the practice of echocardiography in the state, the academy is steadily progressing on its course and its first annual conference to be organized on **24th & 25th May 2008** at **Ramakrishna Mission Seva Pratishthan** is a major step in that direction.

The programme will be held in two state-of-the-art auditoria and feature live-workshops (using most modern echo-machines), guest lectures, interactive CD presentations. Eminent speakers from the region and other parts of the country will grace this exciting and educative scientific programme. A gala banquet has also been planned to break the monotony of our day-to-day lives.

However, it is only your participation that will help this toddler-society to stand up firmly on its feet. We are sure that you will all register yourselves as delegates to make our maiden endeavour highly successful.

With regards and best wishes,

Dr. Sanjay K. Mitra  
President, WBAE  
Chairman, Organising Committee

Dr. Ajit Kumar Ghosh  
Chairman, Response Committee

Dr. Nandini Chakrabarty  
Organising Secretary

Dr. Soumitra Kumar  
Media Secretary, WBAE

## PROGRAMME

# 1st Annual Conference of WEST BENGAL ACADEMY OF ECHOCARDIOGRAPHY

(West Bengal Chapter of Indian Academy of Echocardiography)

24th &amp; 25th May, 2008

Venue: Ramakrishna Mission Seva Pratishthan, Kolkata



**WEST BENGAL ACADEMY OF ECHOCARDIOGRAPHY**  
Ramakrishna Mission Seva Pratishthan  
Room No. 2, VIMS Building  
99 Sarat Bose Road, Kolkata 700026  
Phone: (033) 32-44 2888

24TH MAY, 2008

## LIVE WORKSHOP:

Venue: Hall - B, VIMS Building, 2nd Floor.

TIME: 9:00 A.M. - 9:30 A.M. (30 Minutes)  
TOPIC: NORMAL ANATOMY DEMONSTRATION  
Faculty: Dr. S.P. Pandey  
Chairpersons: Dr. Abhijeet Chatterjee  
Dr. Sree Balaji Nagori  
Dr. Ranjan Sharma

TIME: 9:30 A.M. - 10:00 A.M.  
TOPIC: HOW TO ASSESS HAEMODYNAMICS WITH ECHODOPPLER  
Faculty: Dr. Anup Das Biswas  
Chairpersons: Dr. Subhash Handi  
Dr. Mahesh Kumar Choudhary  
Dr. Jayant Raja

TIME: 10:00 A.M. - 11:00 A.M.  
TOPIC: TIPS & TRAPS in ECHO Assessment for CRT  
Faculty: Dr. Rakesh Gupta  
Chairpersons: Dr. P.K. Deb  
Dr. Nandini Chakrabarty  
Dr. Anil Khan

TIME: 11:00 A.M. - 12:00 NOON

TOPIC: PEDIATRIC CASE  
Faculty: Dr. Nagendra Rao Kanoli  
Chairpersons: Dr. Achyut Sarkar  
Dr. Bikash Majumdar  
Dr. Bikash Bhattacharyya

TIME: 12:00 - 1:00 P.M.  
TOPIC: LIVE WORKSHOP ON 3-D ECHO (Sponsored by M/s. Philips)  
Faculty: Dr. Srikanth Aagman  
Chairpersons: Dr. Partha Sarathi Banerjee  
Dr. Ajit Kumar Ghosh  
Dr. Rajat Dutta

TIME: 1:00 P.M. - 1:45 P.M.

LUNCH

## POST LUNCH PROGRAMME

Venue: Hall - A, Swami Dayananda Hall (1st Floor)

TIME: 1:45 P.M. - 2:30 P.M.

INAUGURATION

25th MAY, 2008

Venue: Hall - B, VIMS Building, 2nd Floor

TIME: 9:00 - 10:30 A.M.  
Topic: TEE WORKSHOP ON ECHO  
Faculty: Dr. Pradyumn Kumar Tiwari  
(Sponsored by M/s. GE)  
Chairpersons: Dr. Debasis Ghosh Roy  
Dr. Subodha Bhattacharyya  
Dr. Sumit Banerjee

10:30 A.M. - 12:00 NOON  
Topic: PEDIATRIC CASE DEMONSTRATION  
Faculty: Dr. Samrat Radhakrishnan  
Chairpersons: Dr. Anup Das Biswas  
Dr. Rajat Subhra Ghosh  
Dr. Sahidul Islam

12:00 - 1:00 P.M.  
Topic: POST CRT ECHO EVALUATION  
Faculty: Dr. Aditya Kapoor  
Chairpersons: Dr. Robin Chakrabarty  
Dr. Dipankar Mukherjee  
Dr. Swapan Kumar Paul

1:00 P.M. - 2:00 P.M. LUNCH

2:00 P.M. - 2:15 P.M.  
Presidential Oration : Dr. Sanjay Kumar Mitra  
Chairpersons : Dr. Ajit Kumar Ghosh  
Dr. J. Naha

2:15 P.M. - 2:35 P.M.  
GUEST LECTURE: Dr. Samrat Radhakrishnan  
Topic: DEXTROCARDIA - ECHO EVALUATION FOR THE BEGINNERS  
Chairpersons: Dr. Anjanil Dutta  
Dr. Kojal Ganguly

2:35 P.M. - 2:55 P.M.  
GUEST LECTURE: Dr. Aditya Kapoor  
Topic: ECHO in CRT  
Chairpersons: Dr. Ajit Kumar Ghosh  
Dr. Anisul Haque

3:00 P.M. - 4:00 P.M.  
SYMPOSIUM: ECHO IN CRITICAL CARE  
Chairpersons: Dr. Soumitra Kumar  
Dr. Anmol Kanti Das  
Dr. Sharma Day Ray

3:00 P.M. - 3:30 P.M.  
Topic: HAND HELD ECHO REVOLUTION & ITS USE IN CRITICAL CARE SETTING  
Speaker: Dr. Rajinder Gauri

3:30 P.M. - 3:40 P.M.:

Topic: ECHO IN CORONARY CARE UNIT  
Speaker: Dr. Debika Chatterjee

3:40 P.M. - 4:00 P.M.:

Topic: ECHO IN NEONATAL INTENSIVE CARE UNIT  
Speaker: Dr. Achyut Sarkar

4:00 P.M. - 5:30 P.M.:

Topic: INTERESTING ECHO CASE PRESENTATIONS  
Panelists: Dr. Debasish Ghosh  
Dr. P.C. Mondal  
Dr. Bhupaneswar Halder  
Dr. Kanak Kumar Mitra

Presenters: Dr. R.L. Joshi  
Dr. Naseem Akhtar  
Dr. Jaydeep Mukherjee  
Dr. Sumita Sengupta  
Dr. Kaustav Biswas  
Dr. Abhijeet Chatterjee

5:30 P.M. - 6:00 P.M.:

VALEDICTORY SESSION





The second annual conference of the academy was held in five-star ambience at Oberoi Grand, Kolkata on 19th and 20th September 2009. Again, about 150 keen delegates participated. The academy donated Rs.10,500/- to RKM Seva Pratishthan for sponsoring “Free Echo” on needy patients. The process for organizing the first basic echo-training programme to be held in January 2010 was initiated.

**Second Annual Conference of ECHOCARDIOGRAPHY**  
(Organized by: WEST BENGAL ACADEMY OF ECHOCARDIOGRAPHY)

**HOTEL OBEROI GRAND**  
19th & 20th September 2009

**WEST BENGAL ACADEMY OF ECHOCARDIOGRAPHY**  
Programme of 2nd Annual Conference on 19th & 20th Sept., 2009 at Oberoi Grand Hotel, Kolkata

**SATURDAY, 19TH SEPTEMBER, 2009**

**9:00 am - 9:45 am**  
Mitral Valve repair or replacement for non-rheumatic MR ? A male patient, 28 years, SOBE NYHA Class 2.

Chairpersons: Dr. Sudeshna Majumdar & Dr. Biswajit Bandyopadhyay  
Moderator: Dr. Anup Das Biswas  
Echocardiologist: Dr. Debika Chatterjee  
Presentation of TTE & TEE findings (15 mins.)  
Surgeon: Dr. Satyjit Bose  
Surgeon's appreciation & apprehensions (15 mins.)  
(Discussion : 15 mins.)

**9:45 am - 10:30 am**  
Balloon mitral valvuloplasty : A female patient, 22 years, tight MS, NYHA Class II in AF

Chairpersons: Dr. Sibabanda Dutta & Dr. Rajal Ganguly  
Moderator: Dr. Abhinav Chatterjee  
Echocardiologist: Dr. Sanjay Banerjee  
Presentation of TTE & TEE findings (15 mins.)

Panel of Cardiologists sharing their views:  
Dr. Sukumar Ghosh, Dr. D.R. Senha, Dr. Madhusudhan Choudhury, Dr. Debikanta Ghosh Roy

**10:30 am - 11:30 am**  
Live workshop sponsored by M/s. Philips India  
Three-dimensional echocardiography in defining structural anomalies in congenital heart disease.

Chairpersons: Dr. Muthu Kumar (Apollo Hospital, Chennai)  
Moderator: Dr. Biswajit Bandyopadhyay

**11:30 am - 12:30 pm**  
Haemodynamic assessment by Doppler (Live Workshop)

Chairpersons: Dr. K. K. Kapur, Indraprastha Apollo, New Delhi  
Moderator: Dr. Rabindra K. Bhattacharya, Dr. Raja Roy

**12:30 pm - 1:15 pm • INAUGURATION**

**1:15 pm - 1:45 pm • LUNCH**

**1:45 pm - 2:30 pm**  
Congenital Heart Disease session

Chairpersons: Dr. Dipankar Dutta, Dr. Bandita Bose and Dr. Debakshi Biswas

- How do we scan systemic and pulmonary veins? - Dr. Muthu Kumar (12 mins.)
- ASD Device Closure : Post-procedure assessment: Dr. Bhattacharya Das (12 mins.)
- Congenital heart disease : Post-intervention echo assessment: Dr. Biswajit Bandyopadhyay (12 mins.)

(Discussion : 8 mins.)

**2:30 pm - 3:00 pm**  
Our best Echo Loop

Chairpersons: Dr. Sankar K. Mitra, Dr. H. Paria  
Guest Lecturer: Dr. K.K. Kapur, Indraprastha Apollo, New Delhi

**3:00 pm - 4:30 pm**  
Heart failure: CRT and echocardiography (Sponsored by M/s. Biotronic)

Moderators: Dr. Raban Chatterjee, Dr. P.A. Hazra

- Status report 2009: Dr. Anil Mishra (20 mins.)
- Case selection for CRT by echo: What to measure? How to measure? Dr. K.K. Kapur, Indraprastha Apollo, New Delhi (20 mins.)

Panel discussion:  
Cardiologists: Dr. Biswajit Majumdar, Dr. Dipankar Chatterjee, Dr. Anil Hazra, Dr. Debabrata Roy

**4:30 pm - 6:30 pm**  
ECHO IN ICU

Chairpersons: Dr. K.K. Das, Dr. P.A. Biswas  
Moderator: Dr. Sanjay Banerjee

- Male patient, aged 48 years, dyslipidaemic, stroke, presented with typical anginal pain for preceding 2 hours; as far as serial ECG normal, where is the echocardiologist's role in decision-making? (Discussion : 15 mins.)

**4:30 pm - 5:30 pm**  
ECHO Q&A: Dr. Anuradha Dey

Chairpersons: Dr. A. K. Ghosh, Dr. Sankar Mitra

**5:30 pm onwards**  
COCKTAILS & DINNER

**SUNDAY, 20TH SEPTEMBER, 2009**

**9:00 am - 9:45 am**  
Valvular Heart Disease

Chairpersons: Dr. A.L. Dutta, Dr. P.S. Banerjee, Dr. A.K. Khan

- TV dysfunction: how to perform a meaningful assessment - Dr. Rajal Subhra Ghose (12 mins.)
- Aortic Regurgitation: Progress in quantification - Dr. Santanu Sengupta (12 mins.)
- What a clinician should do with these information - Dr. Sankar Pal Choudhury (12 mins.)

**9:45 am - 10:30 am**  
Ray measurements used in evaluation of LV diastolic function : Live Workshop (Dr. Santanu Sengupta (Moderator))

Chairpersons: Dr. Nandita Chatterjee

**10:30 am - 11:30 am**  
Interesting images for discussion

Dr. Santanu Sengupta, Dr. Sankar Mitra, Dr. P.A. Biswas, Dr. Anup Das Biswas, Dr. Nandita Chatterjee

Moderator: Dr. A.K. Ghosh, Dr. Santanu Sengupta

**11:30 am - 12:00 Noon**  
Debate

Chairpersons: Dr. A.R. Ray, Dr. Atik Majumdar  
“USP (Strength) is no more relevant in current ECHO practice”  
Dr. Anurag Ganguly (12 mins.)  
Dr. Santanu Roy (12 mins.)

**12:00 noon - 12:30 pm**  
Guest Lecture: Myocardial Imaging (Coronary, Strain rate)  
Chairpersons: Dr. S.S. Chatterjee, Dr. Anup Banerjee  
Speaker: Dr. Santanu Sen Gupta (Moderator)

**12:30 pm - 1:30 pm**  
Chairpersons: Dr. P.A. Biswas, Dr. K.K. Das, Dr. P.A. Biswas, Dr. Bhaskar Bhattacharya

Back to basics

- Basics of cardiac ultrasound: Dr. Anup Das Biswas (15 mins.)
- Right ventricle: Dr. Gautam Dutta (15 mins.)
- An ideal echo report format: Dr. Santanu Kumar (15 mins.)

(Discussion : 15 mins.)

**1:30 pm - 2:15 pm**  
LUNCH

**2:15 pm - 3:15 pm**  
A male patient presented with gradual onset of SOB, fatigue, swelling of feet, abdomen and face over last 4 months. His CXR and basic investigations show.....

Chairpersons: Dr. A.K. Roy, Dr. G.C. Das  
Moderator: Dr. Santanu Das

1. I diagnose the case as obstructive Pericarditis - Dr. Santanu Das (12 mins.)
1. I diagnose the case as Restrictive Cardiomyopathy - Dr. A.K. Mitra (12 mins.)

**3:15 pm - 3:40 pm**  
Aortic stenosis and LV systolic dysfunction

Chairpersons: Dr. U.N. Sarkar, Dr. Rajal Dutta, Dr. Jharna De Roy

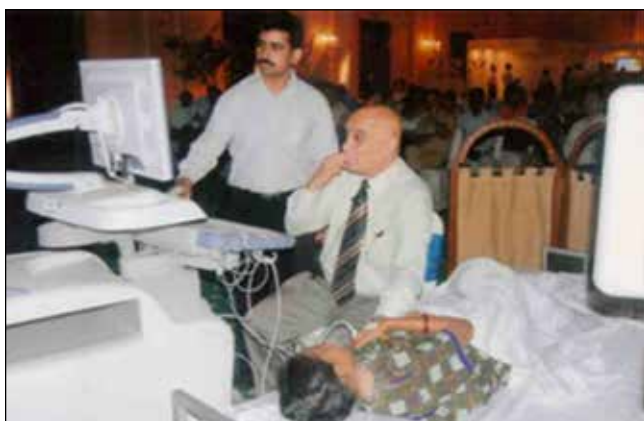
1. The diagnostic challenge - valve or the pump - Dr. Atik Majumdar (15 mins.)
2. Therapeutic challenge - surgical or medical - Dr. Bhaskar Biswas (15 mins.)

(Discussion : 15 mins.)

**3:40 pm - 4:40 pm**  
A male patient, 48 years, post-anterior wall MI given 100 mg Tenecteplase at 4 hrs from onset of chest pain has presented 3 weeks later with effort angina class II, VEF 35% (Sponsored by CAD : proximal LAD 90% proximal LCA 85% - what should be the approach. Sponsored by Elicare Pharma)

Moderator: Dr. Santanu Roy  
Panelists: Dr. Rajan Ghosh, Dr. Sanjay Dey, Dr. Sankar Bhattacharya

1. Echocardiologist's viability assessment in decision making - Dr. Santanu Das (15 mins.)



The membership strength grew to ninety by second year. Dr. Rajat Subhra Ghose took charge in December, 2009 as the second Hony. Secretary of WBAE and Prof. Arup Dasbiswas as second President.

GOVERNING BODY MEMBERS OF WEST BENGAL ACADEMY OF ECHOCARDIOGRAPHY	
President	Dr. Arup Dasbiswas
Vice Presidents	Dr. Ajit Kumar Ghosh Dr. Achyut Sarkar
Hony. Secretary	Dr. Rajat Subhra Ghose
Hony. Treasurer	Dr. Soumitra Kumar
Hony. Asstt. Secretary	Dr. Abhijit Chatterjee
Members	Dr. Pradip Kr. Deb Dr. Subhash Nandi Dr. Minnal Kanti Das Dr. Dipankar Dutta Dr. Kanak Kr. Mitra Dr. Sanjay Kr. Mitra Dr. Debabrata Ray Dr. Debika Chatterjee Dr. Biswarup Lahiri Dr. Sulagna Banerjee Dr. Pranita Ohol (Nandy)

WEST BENGAL ACADEMY OF ECHOCARDIOGRAPHY	
ANNUAL REPORT FOR THE YEAR 2009-10	
<p>In the third year of its existence, WBAE has progressed further in its academic activities, building on the strengths of the previous two years. There has been an increase in membership along with induction of eminent academics in the newly formed governing body. Present membership strength as on 19.9.2010 is 98.</p>	
<p>Monthly clinical meetings continue to be held as in the previous years. While there is a sizable attendance of the regular enthusiasts in these meetings, the participation in such meetings will increase further with adequate notice and better communication that we intend to implement in the forthcoming year.</p>	
<p>The Academy has successfully conducted its first training program for postgraduates and the teaching faculty has participated in an overwhelming manner and even provided hands on teaching in some institutions. This has increased the demand for more such training programs in future. However there is a need to analyse how effective the program has been vis-a-vis the goals achieved and we need to deliberate further regarding the structure of future training programs.</p>	
<p>The third annual conference of the Academy was organized on the 18th and 19th of September, 2010 at Swabhum, well attended despite inclement weather conditions. The participation this year has grown to about 180 and a well conceived scientific program ensured keen interest in the proceedings throughout both the days. The guest faculty this year included Dr. R. Alagesan, President, Indian Academy of Echocardiography, Dr. K. K. Ravi, Dr. Balu Vishwanathan and Dr. Sanku Sengupta.</p>	
<p>The Academy has also successfully acquired a conveniently located office on rent at 218 Rukh Road which includes a small conference room.</p>	
<p>My sincere thanks to Dr. Arup Dasbiswas, President, for his constant guidance and support. I also thank the members of the governing body for their active participation and co-operation in running the Academy.</p>	
<p>With sincere thanks, Dr. Rajat Subhra Ghose Hony. Secretary</p>	

The third annual conference of the Academy was organized on 18th and 19th of September, 2010 at Swabhum, Kolkata and participation was seen to have grown to about 200.



## Third Annual Conference of ECHOCARDIOGRAPHY

**18 SEPTEMBER, 2010**

**TIME: 9:00 A.M. REGISTRATION**

**PROBLEM IN DIASTOLE**  
**TIME: 9:30 A.M. - 10:50 A.M.**  
**Topic:** Assessment of diastolic function in atrial fibrillation  
**Speaker:** Dr Subhas Banerjee  
**Chairpersons:** Dr Anishtha Ganguly, Dr Siddhartha Bandyopadhyay

**SYMPOSIUM**  
**TIME: 10:00 A.M. - 10:20 A.M.**  
**Topic:** Normal Ejection Fraction - is Heart Failure present?  
**Speaker:** Dr Abhijit Chatterjee  
**Chairpersons:** Dr B P Pandey

**TIME: 10:30 A.M. - 10:40 A.M.**  
**Topic:** Systolic Dysfunction - EF is not all  
**Speaker:** Dr Prasanta Nandy  
**Chairpersons:** Dr Debabrata Ray

**PEDIATRIC WORKSHOP**  
**TIME: 10:45 A.M. - 11:40 A.M.**  
**Topic:** Hemodynamic assessment in Congenital Heart Diseases  
**Speaker:** Dr Balu Vaidyanathan  
**Chairpersons:** Dr Achyut Sarkar, Dr Kanak Mitra

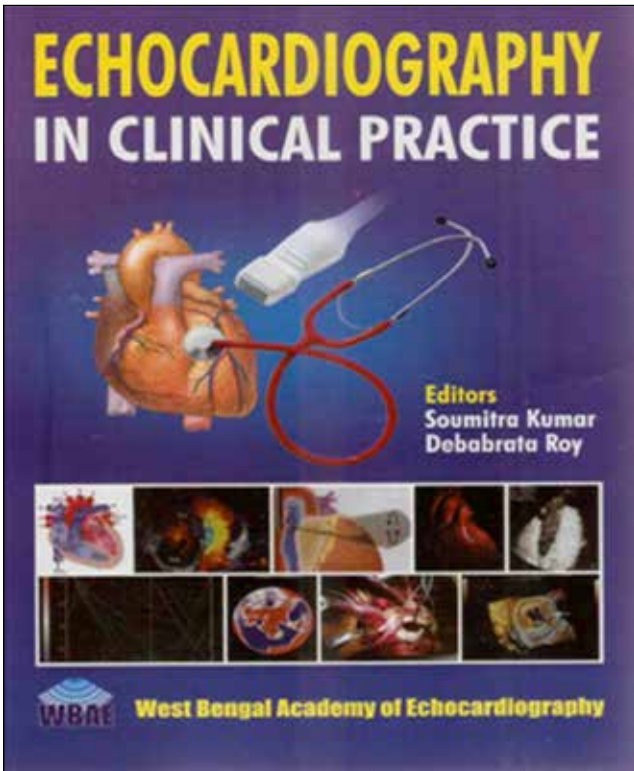
18 SEPTEMBER, 2010		19 SEPTEMBER, 2010	
<b>RENO-VASCULAR CASE</b> <b>TIME: 11:45 A.M. - 12:15 P.M.</b> <b>Topic:</b> Hemodynamic assessment in ren-vascular method <b>Speaker:</b> Dr Suresh Ganguly <b>Chairpersons:</b> Dr Suresh Ganguly, Dr B P Pandey, Dr S C Gupta	<b>12:15 P.M. - 12:30 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta	<b>11:45 A.M. - 12:15 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta	<b>12:15 P.M. - 12:30 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta
<b>POSTER PRESENTATION</b> <b>TIME: 12:30 P.M. - 1:00 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta	<b>1:00 P.M. - 1:30 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta	<b>1:00 P.M. - 1:30 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta	<b>1:00 P.M. - 1:30 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta
<b>1:30 P.M. - 2:00 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta	<b>2:00 P.M. - 2:30 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta	<b>2:00 P.M. - 2:30 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta	<b>2:00 P.M. - 2:30 P.M.</b> <b>Topic:</b> Echocardiography - Based study <b>Speaker:</b> Dr Arup Dasgupta <b>Chairpersons:</b> Dr Suresh Ganguly, Dr S C Gupta

<b>RECORDED IMAGES</b> <b>TIME: 10:45 A.M. - 12:30 P.M.</b> <b>Topic:</b> Echo in ICCU - an essential aid in management <b>Speaker:</b> Dr Aniruddha De <b>Chairpersons:</b> Dr Sudeshna Majumder, Dr A K Kar, Dr Sulagna Banerjee <b>TIME: 12:30 P.M. - 1:15 P.M.</b> <b>Topic:</b> Myocardial Contrast Echocardiography <b>Speaker:</b> Dr R Alagesan <b>Chairpersons:</b> Dr Amal K Banerjee, Dr P K Deb	<b>DEBATE</b> <b>TIME: 15:30 P.M. - 16:00 P.M.</b> <b>Topic:</b> "Echocardiography has made Clinical Cardiology Redundant" <b>Speaker:</b> Dr B P Pandey (against) <b>Chairpersons:</b> Dr Arunangshu Ganguly (for) <b>Chairpersons:</b> Dr Suvanan Roy, Dr Subhas Nandy
<b>LUNCH</b> <b>TIME: 13:15 P.M. - 14:00 P.M.</b>	<b>CAROTID DOPPLER STUDY</b> <b>TIME: 16:00 P.M. - 16:30 P.M.</b> <b>Topic:</b> Carotid IMT: identifying vulnerable patient. How to acquire, how to interpret? <b>Speaker:</b> Dr Sankar Mitra <b>Chairpersons:</b> Dr Arup Dasgupta, Dr Souro Mukherjee
<b>RECORDED IMAGES</b> <b>TIME: 14:00 P.M. - 14:45 P.M.</b> <b>Topic:</b> Refining techniques in Stress Echocardiography <b>Speaker:</b> Dr K K Kapoor <b>Chairpersons:</b> Dr Gautam Dutta, Dr Debika Chatterjee	<b>R&amp;D</b> <b>TIME: 16:30 P.M. - 16:45 P.M.</b> <b>Topic:</b> The Achilles Heel - when Echo fails; the Doctor speaks. The latest developments - The Industry speaks <b>Speaker:</b> Dr Kaustabh Biswas <b>Chairpersons:</b> Dr Dipankar Dutta, Dr Abhijit Chatterjee, Dr Nandita Chakraborty
<b>MITRAL STENOSIS</b> <b>TIME: 14:45 P.M. - 15:00 P.M.</b> <b>Topic:</b> A complete echocardiographic evaluation of Mitral Stenosis <b>Speaker:</b> Dr Nandita Chakraborty <b>Chairpersons:</b> Dr K K Kapoor, Dr Topan Sinha, Dr Mahesh Choudhury	<b>VALEDICTORY SESSION</b>
<b>LIVE WORKSHOP</b> <b>TIME: 15:00 P.M. - 15:25 P.M.</b> <b>Topic:</b> How to Evaluate Diastolic Function <b>Speaker:</b> Dr R Alagesan <b>Chairpersons:</b> Dr Kajal Ganguly, Dr Soumitra Kumar	

The Academy by the end of 2010 also boasted of acquiring a conveniently located office on rent at 2/1B, Ritchie Road, Kolkata.

After having organized three state conferences, the Governing Body of WBAE resolved to promote it to a Zonal Conference by the name of "EZECHO". The first EZECHO in 2011 witnessed participation of distinguished international and national Faculty and delegate strength also surpassed previous records. A text entitled "Echocardiography in Clinical Practice" was published by the Academy under the editorship of myself and Dr. Debabrata Roy. Apart from a well-illustrated text, it also comprised of a DVD of standard and interesting echocardiography images.











Dr. Dipankar Datta assumed responsibility as the third Hony. Secretary in December 2011 and Dr. Ajit Kumar Ghosh as the third President. November 2011 and May 2012 witnessed two successive nine-day courses entitled “Primer Course in Cardiology – including Hands-on Training in Echocardiography”. The objective was to impart basic knowledge in clinical cardiology to the students which is essential for performance of good echocardiographic studies. State-of-the-art Echo-machines and actual cardiac patients of a wide variety were arranged too to train the students on skills in echocardiography. Seventeen students enrolled for the first programme while fifteen participated in the second. Many free echocardiography cases were done by the faculty during both training programmes.





The 5th Annual Conference of WBAE and second EZECHO was very successfully organized at Swabhumi, Kolkata on 11th and 12th August, 2012 with increasing participation of international and national faculty. Registration too crossed 300.



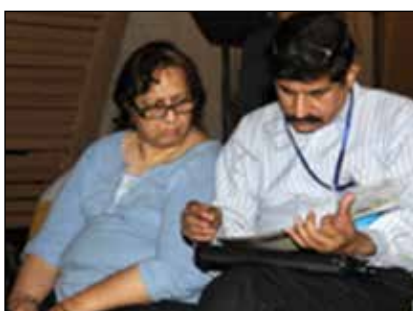


November 2012, July 2013, September 2013 & November 2013 witnessed four more “Primer Course in Cardiology” programmes under my stewardship. Fifty six more students were trained in Clinical Cardiology and basic echocardiography skills.

Silver Jubilee Celebration Conference of Indian Academy of Echocardiography



EZECHO 2013 was successfully held at the same venue, Swabhumi. Apart from participation of international and national faculty, about 10 faculty members and delegates took part from the eastern zone.











Dr. Rajat Subhra Ghose assumed charge for a second term as “Hony Secretary” in September 2013 on popular request and Dr. Achyut Sarkar took over as President. Two more training programmes were organized in first half of 2014.





An advanced Echocardiography Workshop on Strain and Strain rate imaging was conducted in January 2014 by Dr. K. Chandrasekharan of Mayo Clinic, USA.



EZECHO 2014 continued to be a success story and for the first time featured a pre-conference workshop. Very sadly, the Academy suffered from the untimely demise of its Past President, Dr. Ajit Kumar Ghosh in June 2014, whose passion for Echocardiography was highly motivating for all of us.







EZECHO 2015 was blessed with 342 registrations for the conference and 115 for the Pre-conference Workshop. The Zonal participation was seen to grow further.







Two more training programmes were held in September 2014 and August 2015. In view of increasing office-work, Dr. Sulagna Banerjee, a founder-member was appointed as “Executive Secretary” and of course, Mr. Bibhuti Mukherjee continued to render his unstinting services as “Office Secretary” which he has done from the very first day of inception of WBAE. Under unavoidable circumstances, the office of the Academy had to be shifted from the 2/1B, Ritchie Road to 1/B, Ritchie Road across the street.

Dr. Mrinal Kanti Das and Dr. Aniruddha De took over as “President” and “Hony Secretary” of the Academy in September 2015. EZECHO 2016 was enriched by a big number of national and zonal faculty-members. The number of delegates again crossed 300 and preconference workshop gathered 135 delegates. Two echocardiography training programmes in a new mould were held in January and July 2016.















The tenth Annual Conference of West Bengal Academy of Echocardiography and eleventh Conference (EZECHO 2017 and 2018 respectively) were held at Hotel Hyatt Regency on 27th and 28th May 2017 and 19th and 20th May 2018 respectively. Both surpassed previously set standards and records. Nearly four hundred delegates attended the Conferences and over thirty faculty members from national and zonal arena participated. Prof. Y. Chandrashbekhar, Chief Editor, JACC Imaging graced the conference nby his presence in EZECHO 2018. Both the conferences witnessed good number of participants (both as faculy and delegates) from “Bangladesh Society of Echocardiography (BSE) and a reciprocal relationship has been developed between WBAE and BSE.

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An advanced hands-on “Transesophageal Echardiography Workshop” was organized under the auspices of WBAE on 25th and 26th March 2017. I took over as sixth President of WBAE and Dr. Arunangshu Ganguly as “Honorary Secretary” in September 2017.



In the meantime, the application from WBAE to host the “Silver Jubilee Celebration Conference of IAE in 2019” was passed unanimously in the AGM of IAE in October 2017. Thus, the “Crowning Glory” in the history of WBAE so far, organization of ECHO INDIA 2019 was conceived and preparations for the same began in September 2018. The Conference is going to be held in a grandiose venue, ITC Royal Bengal, Kolkata, which has the perfect ambience and infrastructure to host the Silver Jubilee Conference. A good number of “International Faculty and National (including local) Faculty” have confirmed their participation and the “Scientific Programme” promises to be deeply engrossing and educative. Let us hope that with best wishes, support and active co-operation of all involved, ECHO INDIA 2019 will emerge as a very memorable and successful conference.

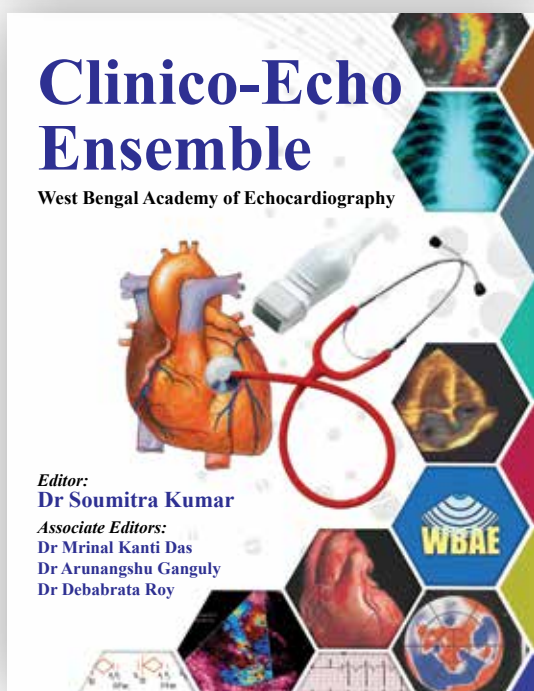
Looking back, it has been an enjoyable and gratifying journey for all of us comprising the core-team of WBAE. Of course, we could have grown faster or we could have delivered more to the lovers of



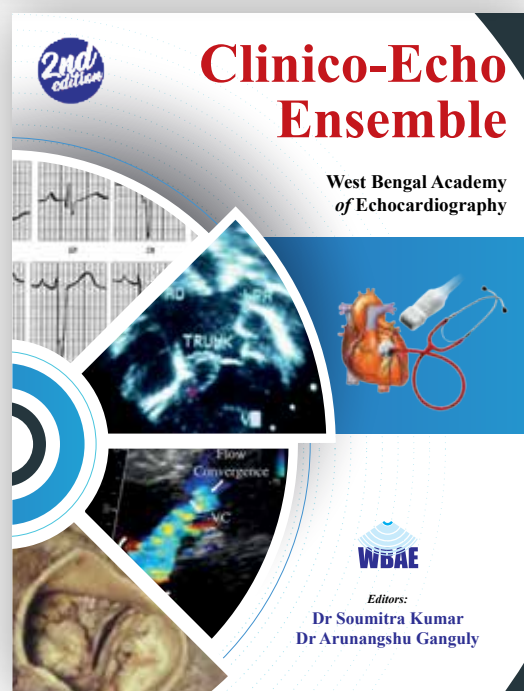
echocardiography. Forgive us for our shortcomings; but feel assured that our effort has been and will remain thoroughly sincere at heart.



Book published by WBAE



1st edition release in 2017



2nd edition release in 2019



# Nobel Laureates & the City of Joy



**Sir Ronald Ross** KCB KCMG FRS FRCS (13 May 1857, Almora, North-Western Provinces, British India - 16 September 1932, London, UK), was a British medical doctor who received the Nobel Prize for Physiology or Medicine in 1902 "for his work on malaria, by which he has shown how it enters the organism

and thereby has laid the foundation for successful research on this disease and methods of combating it". His work on the transmission of malaria, becoming the first British Nobel laureate, and the first born outside of Europe. His discovery of the malarial parasite in the gastrointestinal tract of a mosquito proved that malaria was transmitted by mosquitoes, - was heavily influenced by the hypothesis of Mason and laid the foundation for the method of combating the disease. At that time he was posted in the famous Presidency General Hospital, Kolkata [Now SSKM Hospital] [- as he worked in the Indian Medical Service for 25 years. He was a polymath, writing a number of poems, published several novels, and composed songs. He was also an amateur artist and natural mathematician. After resigning from his service in India, he joined the faculty of Liverpool School of Tropical Medicine, and continued as Professor and Chairman of Tropical Medicine of the institute for 10 years. In 1926 he became Director-in-Chief of the Ross Institute and Hospital for Tropical Diseases, which was established in honour of his works, until his death.



Ross's Notebook-page Then Presidency General Hospital, Kolkata



Ronald Ross Memorial  
SSKM Hospital, Kolkata



Ross's grave at Putney Valley  
Cemetery, London

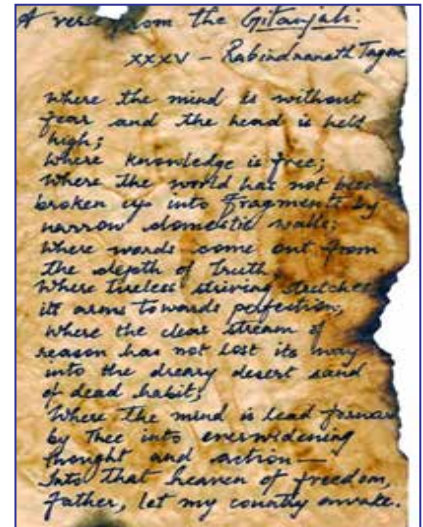
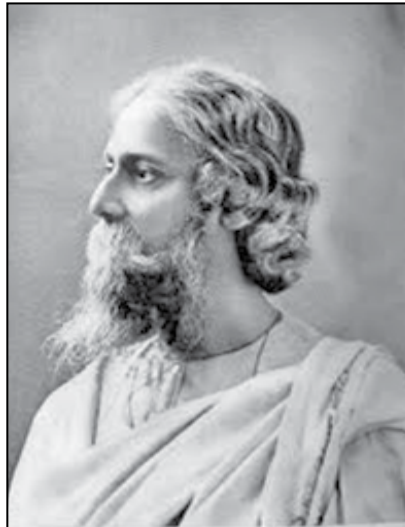
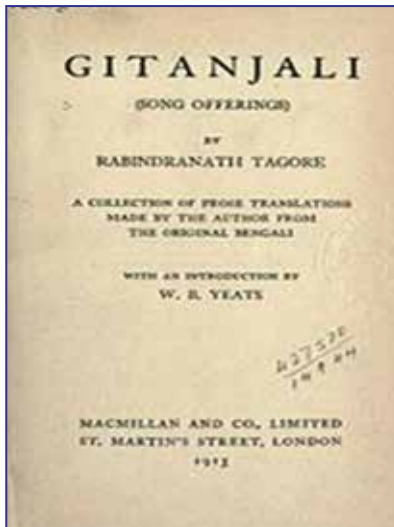


Ross's name remembered on the London  
School of Hygiene and Tropical Medicine





# Nobel Laureates & the City of Joy



*Rabindranath Tagore* *রবীন্দ্রনাথ ঠাকুর*

**Rabindranath Tagore** (7 May 1861 – 7 August 1941), sobriquet Gurudev, was a Bengali-polymath who reshaped Bengali literature and music, as well as Indian art with Contextual Modernism in the late 19th and early 20th centuries. He is the First Asian as well as the first non-European to win the Nobel Prize in Literature in 1913 for his “Gitanjali” (Song Offerings) and the Swedish Academy stated “because of his profoundly sensitive, fresh and beautiful verse, by which, with consummate skill, he has made his poetic thought, expressed in his own English words, a part of the literature of the West”. He was awarded a knighthood by King George V in the 1915 Birthday Honours, but renounced it after the 1919 Jallianwala Bagh massacre. He studied mostly at home though he was Ramtanu Lahiri Professor of Bengali at Calcutta University from 1932 to 1933 and for the first time, that the Convocation Address of Calcutta University was delivered in Bengali by him, in 1937. He introduced “Rakhi Utsav” in 1905 in protest against the division of then undivided Bengal. He is the ONLY poet as the writer of National Anthems of India [ “Jana gana mana”] and Bangladesh [“Amar sonar bangla, ami tomai bhalobasi” ] and his poem was (probably) translated into Sinhalees and sung as National Anthem of Srilanka [though highly debatable].



Childhood



Younghood



Tagore & his wife Mrinalini Devi, 1883



Tagore & Helen Keller

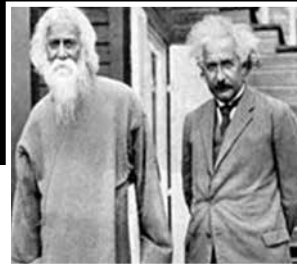
# Rabindranath Tagore



Tagore performing the title role in Valmiki Pratibha (1881) with his niece Indira Devi



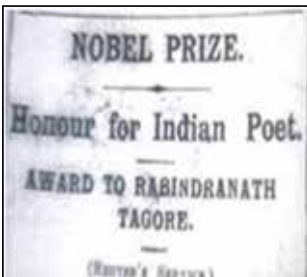
Last picture of Rabindranath, 1941



Tagore & Einstein

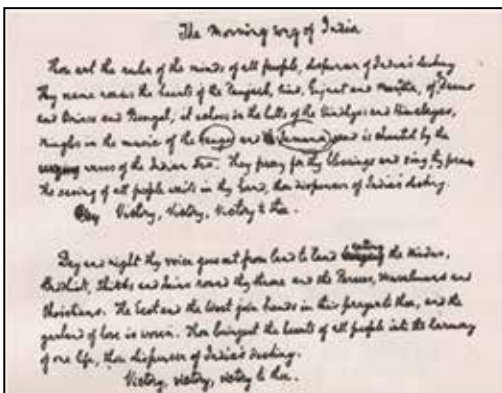


Mahatma Gandhi and Kasturba, at Shantiniketan, on 20.02.1940

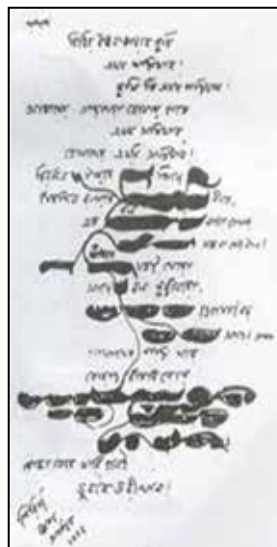
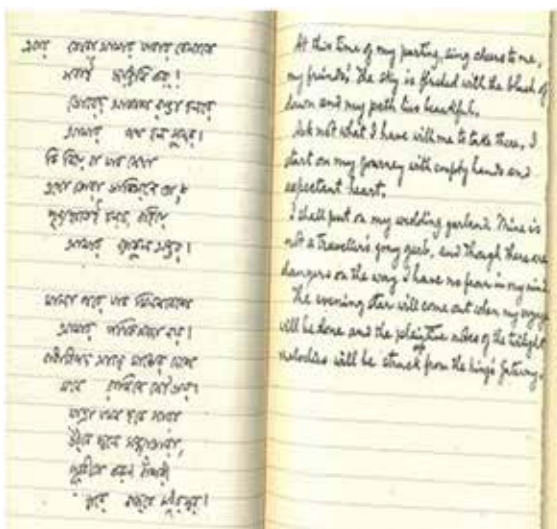


Newspaper on Nobel Prize

Manuscripts in Bengali & English :



Newspaper on rejection of Knighthood







# Nobel Laureates & the City of Joy



*S. V. Raman*



*At his classroom*



*With his wife*

**Sir Chandrasekhara Venkata Raman** (7 November 1888 – 21 November 1970) was an Indian physicist born in Thiruvanaikoil, Tiruchirappalli, Madras Presidency, British India, Presently Tamil Nadu, who carried out ground-breaking work in the field of light scattering, which earned him the 1930 Nobel Prize for Physics, as the first Asian and first non-white to receive any Nobel Prize in the sciences. He discovered that when light traverses a transparent material, some of the deflected light changes in wavelength. This phenomenon, subsequently known as Raman scattering, results from the Raman effect. In 1954, India honoured him with its highest civilian award, the Bharat Ratna and received prestigious Lenin Peace Prize (1957) & became the Fellow of the Royal Society. He was married on 6 May 1907 to Lokasundari Ammal (1892–1980). They had two sons, Chandrasekhar and radio-astronomer Radhakrishnan. He was appointed in 1917 the first Palit Professor of Physics at the University of Calcutta. At the same time, he continued doing research at the Indian Association for the Cultivation of Science (IACS), Calcutta, where he became the Honorary Secretary. Raman used to refer to this period as the golden era of his career. Raman also worked on the acoustics of musical instruments. He worked out the theory of transverse vibration of bowed strings, on the basis of superposition velocities. He was also the first to investigate the harmonic nature of the sound of the Indian drums such as the tabla and the mridangam. Raman was the paternal uncle of Subrahmanyam Chandrasekhar, who later won the Nobel Prize in Physics (1983) for his discovery of the Chandrasekhar limit. Raman died on 21 November 1970. India celebrates National Science Day on 28 February of every year to commemorate the discovery of the Raman effect in 1928.





# Nobel Laureates & the City of Joy



*Receiving Nobel Prize*



*Caring Mother Teresa & Orphans*

*Mother Teresa*

**Mother Teresa** (26th Aug, 1910 – 5th Sept, 1997): The Nobel Peace Prize was awarded to Mother Teresa in 1979 “For work undertaken in the struggle to overcome poverty and distress, which also constitutes a threat to peace.” Ethnic Albanian parentage, Agnes Gonxha Bojaxhiu was born at Skopje, Macedonia, now in Yugoslavia. She joined the Irish order of the Sisters of Loretto at Dublin in 1928 and came to Kolkata in 1929 as a missionary, only to find the misery of the abandoned and the destitute. Concern for the poor and the sick prompted her to found a new Roman Catholic congregation, Order of the Missionaries of Charity in 1950. Having become an Indian citizen, Mother Teresa served the cause of dying destitutes, lepers and drug addicts, through Nirmal Hriday (meaning Pure Heart), a hospice, established in 1952, near the Kalighat Kali Temple, the main centre of her activity. She opened a hospice for leprosy patients in 1955 at ‘Shantinagar’, near Asansol and Nirmal Shishu Bhavan for the orphans & homeless youth. Her selfless service and unique devotion, not only to helpless fellow-Indians but also to the cause of world peace, earned her and India the first Nobel Peace Prize. She received Ramon Magsaysay Peace Prize & Padmashri in 1962, Bharatratna in 1980. She was finally declared as “Saint” by Pope Francis on 4th September, 2016.

Silver Jubilee Celebration Conference of Indian Academy of Echocardiography

# Mother Teresa



*Mother & orphan*



*Mother & Dr. Manmohan Singh*



*Bharatratna from the President*



*Missionaries of Charity*



*Nirmal Hriday at Kalighat*



*Memorial House of Mother Teresa  
in her native Skopje*



*With Ronald & Nancy Reagan*



*Mother & Princess Diana*



*Pope & Mother Teresa*





# Nobel Laureates & the City of Joy



JIA 2019



*Amartya Sen receiving his Prize from the hands of His Majesty the King.*



*All 1998 Nobel Laureates on stage at the Stockholm Concert Hall. Sen is seated first from right.*

**Amartya Kumar Sen** (3rd November 1933, Now 84 years) Rabindranath Tagore gave Amartya Sen his name (Bengali ômorto, lit. “immortal”). His father was Ashutosh Sen, Professor of Chemistry at Dhaka University and mother was Amita Sen, Rabindranath Tagore’s friend Kshitimohan Sen’s daughter. Sen began his high-school education at St Gregory’s School in Dhaka in 1940. From fall 1941, Sen studied at Patha Bhavana, Santiniketan. In 1951, he went to where he earned a B.A. in Economics with First Class. While at Presidency, Sen was diagnosed with oral cancer, and given a 15% chance of living five years. With radiation treatment, he survived, and in 1953 he moved to Trinity College, Cambridge, where he earned a second B.A. in Pure Economics in 1955 with a First Class, topping the list. He was elected President of the Cambridge Majlis. While Sen was officially a Ph.D student at Cambridge (he finished his research in 1955-6), he was offered the position of Professor and Head of the Economics Department of the Jadavpur University in Calcutta, and he became the youngest chairman to head the Department of Economics (1956-1958). He taught as Professor of Economics (1963-1971) at the Delhi School of Economics (where he completed his magnum opus *Collective Choice and Social Welfare* in 1969). During this time he was also a frequent visitor to various other premiere Indian economic schools and centres of excellence like Jawaharlal Nehru University, Indian Statistical Institute, Centre for Development Studies, Gokhale Institute of Politics and Economics and Centre for Studies in Social Sciences. He joined the London School of Economics as a Professor of Economics (1972-1977). From 1977 to 1986 he taught at the University of Oxford, where he was first a Professor of Economics and Fellow of Nuffield College, and then the Drummond Professor of



# Amartya Kumar Sen

Political Economy and a Fellow of All Souls College from 1980. In 1987, he joined Harvard as the Thomas W. Lamont University Professor of Economics. In 1998 he was appointed as Master of Trinity College, Cambridge, becoming the first Asian head of an Oxbridge college. He also established the Eva Colorni Trust at the former London Guildhall University in the name of his deceased wife. Amartya Sen, was awarded the 1998 Nobel Prize in Economic Sciences for his contributions to welfare economics and social choice theory and for his interest in the problems of society's poorest members. He established Pratichi Trust. Sen was best known for his work on the causes of famine, which led to the development of practical solutions for preventing or limiting the effects of real or perceived shortages of food. Sen, was awarded Bharat Ratna Award in 1999 & Leontief Prize in 2000. Sen has received over 90 honorary degrees from universities around the world & Honorary citizenship of Bangladesh, 1999. Sen was a member of the Encyclopædia Britannica Editorial Board of Advisors (2005-2007). In 2008 India donated \$4.5 million to Harvard University to establish the Amartya Sen Fellowship Fund to enable deserving Indian students to study at the institution's Graduate School of Arts and Sciences. He wrote many renowned books & papers like Development as Freedom (1999); Rationality and Freedom (2002), The Argumentative Indian: Writings on Indian History, Culture, and Identity (2005); Commodities & Capabilities (1985), Inequality Reexamined (1992), The Idea of Justice (2009). In May 2007, he was appointed as chairman of Nalanda Mentor Group & was named the first chancellor of the proposed Nalanda University (19.07.2012 - 20.02.2015). He has served as president of the Econometric Society (1984), the International Economic Association (1986-1989), the Indian Economic Association (1989) and the American Economic Association (1994), President of the Development Studies Association and the Human Development and Capability Association. He is permanent resident of the U.S. for almost 50 years but chose to retain only his Indian citizenship.



*Felicitaton*



*Interview session*



*With Speaker, PM & Vice-President*



*Deshikottam at Vishwabharati*

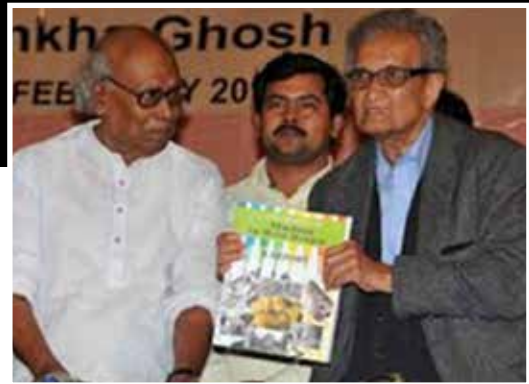
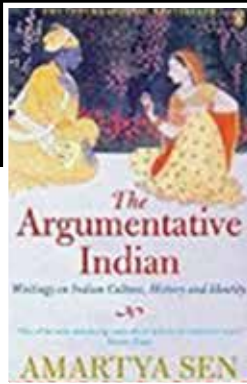


*With President Narayanan*

# Amartya Kumar Sen



Lecture at meeting of his "Pratichi Trust" His book



With poet Shankha Ghosh at Kolkata Book-Fair



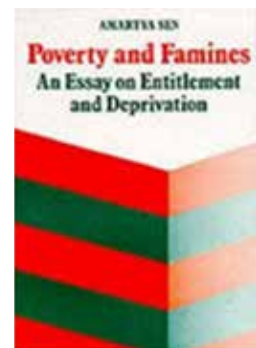
Felicitation



At Jaipur Literature Festival



At the library



His book



Lecture



With daughter, Nandana Sen



At the Presidency University, with VC



Book inauguration, with PM



His book



With Mother Amita Sen & daughter Antara Dev Sen





# Nobel Laureates & the City of Joy



**Abhijit Binayak Banerjee** was born in Mumbai, India, to Nirmala Banerjee (née Patankar), a Marathi and a professor of economics at the Centre for Studies in Social Sciences, Calcutta, and Dipak Banerjee, a Hindu Bengali professor and the head of the Department of Economics at Presidency College, Calcutta.[22]

He received his school education in South Point High School, a renowned educational institution in Kolkata. After his schooling, he took admission in the University of Calcutta in Presidency College, Kolkata where he completed his B.Sc.(H) degree in economics in 1981. Later, he went on to obtain a Ph.D. in Economics at Harvard University in 1988. The subject of his doctoral thesis was “Essays in Information Economics.”

Banerjee is currently the Ford Foundation International Professor of Economics at the Massachusetts Institute of Technology; he has taught at Harvard University and Princeton University.

His work focuses on development economics. Together with wife Esther Duflo he has discussed field experiments as an important methodology to discover causal relationships in economics. He was elected a fellow of the American Academy of Arts and Sciences in 2004.

In 2013, he was named by United Nations Secretary General Ban Ki-Moon to a panel of experts tasked with updating the Millennium Development Goals after 2015 (their expiration date). In 2014, he received the Bernhard-Harms-Prize from the Kiel Institute for the World Economy.

In 2019, he was awarded the Nobel Prize in Economics, together with Esther Duflo and Michael Kremer, for their work alleviating global poverty.





# Kolikata - Calcutta - Kolkata

*.... and quiet flows the Hooghly*



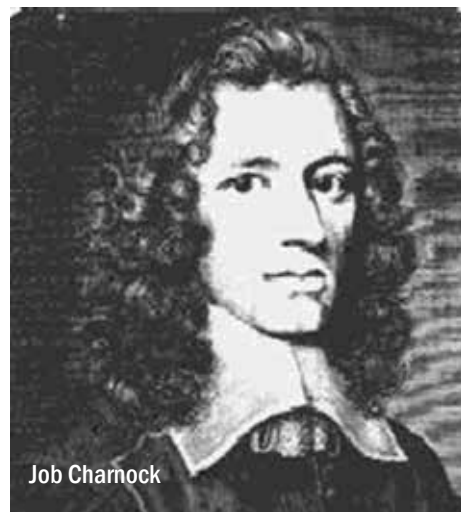
Compiled by **Dr Indrajit Roy**  
Renowned Neurosurgeon Former Sheriff of Kolkata

Long ago in the age of truth (Satya-yuga) Sati, the daughter of Daksha, and the consort of Shiva, is fabled to have turned into stone when her father insulted her husband. An infuriated Shiva picked up his wife's petrified body and started the dance of destruction bringing entire creation into peril. In order to save the world Vishnu used his sharp discus and cut the body of Sati into many pieces. Wherever these pieces fell there came up places of pilgrimage. The toes of the right foot of Sati is believed to have fallen at the place we now know as Kalighat, and according to believers the spirit of Sati resides there as Goddess Kali. The early history of Kolkata is thus mired in folklore and mythology.

Three small villages: Sutanuti, Gobindapur and Kolikata had come up on the banks of the river Hooghly, founded and inhabited mainly by cotton merchants and weavers. When Job Charnock became the Chief Agent of the British East India Company at Hooghly in 1686, he had a confrontation with the Mughal Fouzdar and the Company's forces sailed to Sutanuti. The Mughals came chasing and Charnock was forced to flee with his troops to Hijli. An understanding with the Fouzdar saw the British back in Sutanuti. In 1688 the Company's Court of Directors sent a fleet under the command of Captain Heath who made Charnock close operations in Bengal and took him to Fort St. George in Madras. More than a year later the new Nawab allowed the English to return. On 24th. August 1690 Job Charnock landed in Sutanuti in his third attempt, laying the foundations of a city that would one day become the Eastern headquarters of the mighty British Empire.



One of the earliest photograph of Kalighat Temple



Job Charnock



Nawab Siraj-Ud-Daullah



Robert Clive

Being a riverine port with a rich hinterland Calcutta prospered and soon became a busy and opulent centre of trade and commerce. This in its turn brought about a great deal of attention from the local rulers. Skirmishes and battles between the East India Company went on at regular intervals until the 17th. of June, 1757 when the Battle of Plassey finally decided the fate of the city and possibly of India as well. At the Battle of Plassey the Nawab's Commander in chief, Mir-Jaffar, betrayed his master and the East India Co., led by Robert Clive, had an easy victory.

At the Battle of Plassey the Nawab's Commander in chief, Mir-Jaffar, betrayed his master and the East India Co. had an easy victory. Mir-Jaffar became a puppet Nawab and the East India Co. became the virtual rulers of the Eastern Province of the Mughal Empire.

Mir-Jaffar became a puppet Nawab and the East India Co. became the virtual rulers of the Eastern Province of the Mughal Empire. Robert Clive also obtained the Diwani of Bengal from the Emperor at Delhi giving the Company the right to collect revenue and maintain its own army.

One of the first great roads to be built was Chowringhee, now known as Jawaharlal Nehru Road. Since it was built with the sand and mud that came from Europe as ballast in the ships that sailed into the Hooghly and were replaced with valuable cargo on their return journey, some historians have jocularly called it an "imported road". The name Chowringhee has been attributed by some to a holy man of the same name, while others believe it to have been derived from "Cherangi", another name for the Goddess Kali. The road still serves as one of main arterial roads of the great metropolis.

The rapidly developing city soon became the control center of trade and commerce in India and ultimately the Capital of India.

The Writers' Buildings was initially taken on lease by the East India Company in 1780 in order to provide rent free accommodation to its clerks (writers). The structure was a simple and unattractive row of houses with thatched awnings. In 1882 it was renovated and transformed into the majestic structure of red brick style with a Corinthian façade and Baroque statuary at the top. Since that time it remained the seat of power in Bengal (later West Bengal) till recently when the Government offices had to be shifted out to allow extensive repair and restoration work which are reportedly still in progress.

Marquis Wellesly, Governor General of Bengal (1798 - 1805) had famously declared that India should be ruled from a palace and not from











a counting house; with the ideas of a Prince and not with those of a retail dealer in muslin and indigo. Thus the Government House (Raj Bhavan) came into existence its construction having been completed on 18th January, 1803 at a total cost of 178,000 Pounds Sterling.

The Town Hall was constructed from 1st December 1807 to 22nd March 1814, entirely out of funds raised by public lottery. It was one place in British Calcutta where colour br was not practised and Europeans and Indians were allowed to use it on an equal footing. It even witnessed a protest meeting against the partition of Bengal in 1905.



The first Medical college for teaching modern Medicine in mainland Asia was established in 1835. The University of Calcutta started functioning in 1837.

The High Court at Calcutta is a magnificent Gothic style building dating back to 1862. The city architect Walter Granville had designed it after the Clothes Hall at Ypres in Belgium. During the war the latter got destroyed and when peace returned, architects and artists came to Calcutta and copied the High Court's structure. The restored Town Hall at Ypres is thus a copy of the High Court at Calcutta.

Clothes Hall, Ypres, Belgium







The Victoria Memorial conceived by Lord Curzon is one of the grandest structures built in the modern world. It was designed by Sir William Emerson, Architect, in 1903, and formally opened by the Prince of Wales (later King Edward VIII) on 28th December 1921. It houses a very large collection of priceless artwork and historical documents and artefacts. The entire cost was raised as donations from the people and princes of India.



The Howrah Bridge, considered to be an engineering marvel, is now known as the Rabindra Setu. It was opened to traffic in 1943 and remains a beautiful gateway to the city and one of its main connections to the rest of India.



Vidyasagar Setu also links Kolkata with Howrah and has been constructed in recent times.







Bankim Ch. Chattopadhyay



Martyr Khudiram

Calcutta provided leadership to the Freedom struggle during the British rule. Bankim Chandra gave the nation its song of Freedom and the words VANDE MATARAM became the war cry of the freedom fighters. It means I worship the Mother(land). Khudiram was sent to the gallows at the age of 19 for attempting armed rebellion. He became the subject of folk songs and legends

Netaji escaped from India and formed a free Govt in exile. The Indian National Army gave Indians their National slogan JAI HIND, meaning Victory to India. Aurobindo started as a fiery revolutionary but later became a philosopher and his Ashrama at Pondicherry has branches and followers all over the world.



Aurobindo Ghosh



Netaji Subhas Ch. Bose



15th August 1947





Nandan is the hall for showing Art Films and holds regular exhibitions and festivals. Calcutta has always been a great contributor to the film industry and the coveted Oscar came to this city for Satyajit Ray, one of the greatest directors of all times.



A whole road dedicated to book shops exists in this city. Known as College Street, it is a treasure house for bibliophiles.







Calcutta or Kolkata has been home to most of the Nobel Laureates from India. Anoble city indeed!

- Sir Ronald Ross : Medicine
- Rabindra Nath Tagore : Literature (Two Nations, India & Bangladesh use his songs as their National anthems)
- Sir C. V. Raman : Physics
- Mother Teresa : Peace
- Amartya Sen : Economics
- Abhijit Binayak Bannerjee : Economics



Partition of Bengal during independence put the city under enormous pressure due to massive influx of refugees. Calcutta bravely withstood and accepted the load and to this day its sprit is visible on every celebration and the name **CITY OF JOY** remains as true as ever.

