

<b>Name</b>	Dr Mithu Banerjee
<b>Nationality</b>	Indian
<b>Date of Birth</b>	03 Dec 1970
<b>Marital Status</b>	Married
<b>Spouse Details</b>	Dr Bikram Choudhury, MS(ENT), DNB (ENT) Additional Professor AIIMS, Jodhpur
<b>Permanent Address</b>	AL – 133 Sector II, Salt Lake City, Kolkata West Bengal, India 700091
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<b>E-mail</b>	mithu.banerjee.3@gmail.com
<b>Qualifications</b>	MBBS MD (Biochemistry) MNAMS
<b>Medical Registration</b>	Registration Number : 76862 Maharashtra Medical Council

<b>Memberships</b>	<ul style="list-style-type: none"> <li>• Chair of Diabetes testing &amp; Harmonisation- Asia Pacific Federation of Clinical Biochemistry</li> <li>• Representative from India as corresponding member– International Federation of Clinical Chemistry- Education in the Use of Biomarkers in diabetes – IFCC- C-EUBD</li> <li>• American Association of Clinical Chemistry</li> <li>• Association of Medical Biochemists of India</li> <li>• Association of Clinical Biochemists of India</li> </ul>
<b>Professional Medical Education</b>	<b>1989 – 1993: MBBS</b> Armed Forces Medical College, Pune, India

## **Awards**

1. Global Investigator award for paper titled “Assessment of DHEAS, Cortisol, and the DHEAS/Cortisol Ratio in Patients with Coronavirus Disease: A Pilot Study” at LMCE 2021 (Laboratory Medicine Congress & Exhibition) & Korean Society of Laboratory Medicine 62nd Annual Meeting.

## **Post Graduate Training:**

**2000- 2003 :** MD Biochemistry

Advanced Course in Pathology

Armed Forces Medical College, Pune

University of Pune

**2012** - Certificate course in Molecular Pathology from American Association of Clinical Chemistry

**2013, 2016-** Internal Auditor's course for Clinical laboratories ISO:15189 National Accreditation Board for Laboratories

**2014-** Certificate course in Statistical Methods for the clinical laboratorian from the American Association of Clinical Chemistry

**2014-** Training in Mass spectrometry for the screening of Inborn Errors of metabolism from National Institute of Mental health and Neurological Sciences Bangalore for two weeks

**2015-2016-** Post Doctoral fellowship in Cancer Epigenetics from Johns Hopkins Medical Institute, Baltimore, USA from Nov 2015- Feb 2016.

**2017-** Provider Course on Basic Life Support (BLS) & Advanced Cardiac Life Support (ACLS) from American Heart Association

**2017-** Instructor course on BLS& ACLS from American Heart Association

**2017-** MCI approved Advanced Course in Medical Education (ACME) from Seth GS Medical College & King Edward Memorial Hospital, Mumbai

**2018-** Certificate course in Lab Information systems from AACC

**2018-** Certificate course in Patient Safety Essentials from AACC

**2019-** Practical approach to quality control in the clinical lab.

**2019-** Introduction to LCMS for the clinical Laboratory

## **Job profile:**

- Additional Prof & Head of Department, Biochemistry, All India Institute of Medical Sciences, Jodhpur
- Deputy Medical Superintendant,
- Teaching MBBS, MD, MSc biochemistry and PhD scholars
- Research in Tuberculosis and Head & Neck cancer
- Practising subspecialties of Histopathology, Haematology, Cytology, Microbiology, Biochemistry, Serology, Molecular Biology and Transfusion Medicine
- Performing QC in all subspecialties of pathology
- Research in Epigenetics - specifically on DNA methylation in cancer. AFMC is the first institute in the Indian Armed Forces to initiate research on Epigenetics.
- Was part of the team which got the Clinical Chemistry lab at AFMC NABL accreditation -The first lab in the entire Indian Armed Forces to be accredited by NABL.
- Prepared all the quality system procedures for NABL accreditation of the lab
- Perform internal audit of the lab in accordance with ISO 15189 specifications

## **Previous Work Experience:**

- Commissioned into the Armed Forces in the Army Medical Corps in 1994
- Internship at Military Hospital Kirkee, Pune, which is a Referral centre for Orthopaedics & Spinal Care 1994-1995
- Served the mandatory five years as General Practitioner in the Armed Forces in Military Hospital Dimapur, Nagaland & Military Hospital Ahmedabad 1995-2000
- Qualified for and Completed Advanced Course in Pathology & MD Biochemistry at Armed Forces Medical College, Pune. 2000- 2003  
Was trained in Pathology, Microbiology, Biochemistry, Transfusion Medicine & Haematology during Advanced Course in Pathology
- Posted to Command Hospital, Kolkata as Graded Specialist Pathology 2004-2007.

- Posted to AFMC as Faculty (Asst & Assco Prof) in 2007 in the Dept of Biochemistry.
- Initiated work on cancer epigenetics for the first time in the Armed Forces.
- Classified Specialist in Pathology & Biochemistry at Command Hospital Northern Command Aug 2013- Aug 2014
- Senior Advisor in Pathology & Biochemistry at Command Hospital Northern Command from 01 Sep 2014 till 11 Nov 2016. Supervised Diagnostic lab services of all labs in northern command.
- Professor & Head of Department of Biochemistry & Lab Director at Armed Forces Medical College Nov 2016-Dec 2017
- Senior Adviser Pathology & Biochemistry at Military Hospital Jodhpur, Jan 2018 onwards. Head of all diagnostic lab services in the states of Rajasthan, Madhya Pradesh & Gujarat.

### **Practical Skills:**

- Classes for MBBS, MD, PhD, Nursing and paramedical students
- Post graduate guide for DM, MD, MSc & PhD students
- Performance of routine & specialised clinical chemistry tests
- Experience with Excel 600, 300 & Siemens dimension, Bechman AU 680 fully automated chemistry analysers
- Performing ELISA, Cellulose Acetate & Agarose gel electrophoresis
- Performing immunofixation electrophoresis for the diagnosis of multiple myeloma
- Performing Radio Immuno Assay on semi automated and Fully automated Stratec RIA system
- Experience with ELFIA in Vidas
- Experience with Roche Real time PCR for HIV, HBV, HCV & H1N1 PCRs
- Standardisation of Methylation Specific PCR by Conventional as well as Real time PCR protocols in the dept
- Reporting Histopathology & Haematology
- CT & USG guided FNAC

- Running of a microbiology lab
- Running of a blood bank.
- Conducting Internal Audits in Department as per ISO : 15189

### **Research:**

- Was PI in several research projects granted by Defence Research Development Organisation (DRDO)
- Wrote grant for DNA methylation in p16 gene in urine as noninvasive marker of bladder cancer
- AFMRC 4518/2014 Genotyping of cryptosporidium species in Irritable bowel syndrome- 6,50,000
- AFMRC 4306/2012 Study of dna methylation in promoter region of p15 & E cadherin genes in head and neck cancers-15,39,000/-
- AFMRC 4148/2011 relation between ferritin and lipid peroxidation in patients with thalassemia major receiving multiple transfusions- 3,00,000
- AFMRC 3857/2008 DNA methylation in p15, p16 & E cadherin genes from PAP smear in cervical cancer patients- 9,00,000/-
- AFMRC 3856/2005 ratio of serum : ascitic fluid LDH, cholesterol and ferritin as a biomarker of malignant ascites- 78,000/-
- ICMR-STS projects 21/MA/AFM-11/09-BMSD Mannose as a preservative for blood glucose in blood
- 2011-02062 To check diagnostic accuracy of estimating GFR by (i)Cockcroft-Gault method (ii)Modification of diet in renal disease (MDRD) formula in chronic kidney disease patients.
- 2017-03241- Prevalence of hyponatremia in critically ill patients

### **Extramural Project as PI**

1. "Pharmacogenomic, Biochemical, Epigenetic and population pharmacokinetic study in TB patients-Multicentric Study". Project funded by ICMR- TB consortium.

### **Intramural Projects as PI**

1. DNA methylation in promoter region of MGMT & EDNRB genes from saliva as a biomarker of head & neck cancers
2. SARS-Cov-2 IgG antibodies & its clinical correlates in convalescent plasma donors
3. Viral Load estimation & T cell counts in predicting severity of COVID-19
4. Cytokine profile mapping for severity assessment of COVID-19

### **Intramural Projects as CO PI**

1. Assessment of DHEAS/Cortisol ratio as a prognostic marker of COVID-19
2. Predictors of Clinical Outcomes in Adult COVID-19 Patients Admitted to a Tertiary Care Hospital in India: an analytical cross-sectional study.
3. Clinical outcome, viral response and safety profile of chloroquine in COVID-19 patients
4. Endocrine dysfunction among patients with COVID-19:
5. Evaluation of Clinical & Lab parameters of Post COVID -19 patients
6. Immunoclinical Characterisation of Diabetes in children & Adolescents & their characterisation in time & Space
7. Quantitative sensory testing of allodynia in migraine: Its association with endogenous sex hormones & TRPV1 expression

### **Reviewers of Journals**

1. Medical Journal of Armed Forces India,
2. Medical Journal of Dr DY Patil Vidyapeeth

3. Indian Journal Clinical Biochemistry
4. Journal of Laboratory Physicians

## **POST GRADUATE STUDENTS GUIDED**

### **MD Biochemistry**

1. Maj Mukul Sharma - Study of DNA methylation in p16 gene in urine as a screening tool for bladder cancer.
2. Capt Yan Nai Soe- A study of p 16 promoter DNA methylation from blood in breast cancer patients.
3. Dr Shruti Gupta – Incidence of Drug induced liver injury and DNA hypermethylation in CYP4501A1, CYP4501B1 and Glutathione S transferase genes in Anti tubercular treatment induced hepatitis

### **PhD**

1. Jyoti Kanwar- Study of salivary hypermethylation in promoter region of MGMT, TIMP3 & EDNRB genes as biomarkers of head & neck cancers and evaluation of Hydralazine, Procainamide as demethylating agents.

### **MSc Biochemistry**

1. Kavya Gauba- A study of antioxidant status and gene polymorphism of Glutathione S

Transferase gene in ATT induced liver injury patients. **MSc Biochemistry**

### **Co guides**

### **DM Pulmonary Medicine**

1. Clinical utility of BAL cellular analysis & BAL biomarkers (KL-6 & CRP) in evaluating disease severity and prognosis in chronic fibrosing interstitial lung disease. Dr Benhur Shadrach



2. Calprotectin level in patients with pleural effusion and it's correlation with their etiology - Dr Amartya Chakraborty

### **DM Nephrology**

1. Study of the correlation of Hepcidin in absolute & functional iron deficiency anemia in Chronic kidney disease -Dr Santosh Kumar V
2. Study of electrocardiographic patterns, echocardiographic parameters and biochemical markers of heart failure in patients with chronic kidney disease – Dr Sanjeeb Bharadwaj

### **DM Endocrinology**

1. Assessment of BMD & TBS in patients of hyperthyroidism and determining predictors of bone loss- Dr Prasoon Rastogi.
2. Assessment of Bone mineral density by DEXA in type-1 diabetes patients and correlation with glycemic & non glycemic parameters-An observational study – Dr Shijan Patro

### **DM Neonatology**

1. Weight Loss Pattern in Exclusively Breastfed Healthy Newborns ( $\geq 36$  weeks) in Semi-Arid Region During Birth Hospitalization – Dr Ramandeep
2. Correlation of cytokine pattern in moderate to severe perinatal asphyxia with neurodevelopmental outcome: Prospective cohort study.- Dr Adil Khan

### **MS ENT**

1. Predictors of Post- operative hypocalcemia in patients undergoing thyroidectomy. Dr Jibin
2. Dr Hage - mucor
3. Dr Bhavesh- mucor

## **MD Paediatrics**

1. Association between serum Periostin and Asthma control in children. – Dr Sarita Choudhary
2. Assessment of Renal anginal index and cystatin C as predictive markers in severe Acute Kidney injury in children with septic shock: A prospective cohort study- Dr Anil Kumar JS

## **MD Medicine**

1. Procalcitonin vs Hs- CRP as a predictor marker for long term functional outcome in patients with Ischemic stroke. Dr Venkat Teja

## **EXPERT FOR RESEARCH**

Was nominated in the experts group meeting of Pathology & allied subjects by DGAFMS for selection of Armed Forces Medical Research Projects 2016, 2017. Have been nominated as reviewer by DGAFMS for completed AFMRC projects.

## **Volunteer & Community Activities:**

1. Participated in cervical cancer screening camps held at Command Hospital Kolkata, annually from 2004-2007 and at CH(NC) in 2014-2016. Evaluated 100 PAP smears on an average from each of the camps.
2. Was leader of the teams for Blood donation camps held in & around Kolkata between 2004-2007. My team collected approximately 300 units of blood from each of the camps held at Pandua, Shewda Puli & Diamond harbour. Led Blood donation drives at Udhampur from 2013-2016.
3. Participated in Health Camps in the interiors of Jammu & Kashmir as a goodwill gesture under the aegis of the Armed Forces in “Operation Sadbhavna”

### **Extra Curricular Activities:**

1. Co Editor of the college almanac-‘AFMANAC’ which is a quarterly publication from AFMC.
2. In charge of the Musimatics Club – ie Music & Dramatics club from 2009-2011.
3. Competent Communicator & Competent leader levels at Toastmasters International Club
4. Officers in Charge of the Girls Hostel from 2011
5. Awarded College Blues for Scientific Society for winning the first prize in the Bombay Medical Congress on two consecutive years – 1992 & 1993. Presented ‘Manifestations of child abuse’ & ‘Heal the Healer’.

### **PUBLICATIONS**

1. Banerjee Mithu, Guliyani R, Srikhande DY. Congenital Adrenal Hyperplasia as a cause of dehydration. Indian Journal of Medical Biochemistry 2006;10: 2: 44-7.
2. Banerjee Mithu, Chatterjee T, Chaudhary GS. Unusual presentations of Dengue. Indian Journal of Clinical Biochemistry 2008; 23: 16-18.
3. Banerjee M, Chatterjee T, Srinivas V, Kataria VK. A Clinicohaematological profile of Dengue in a tertiary care centre. Medical Journal Armed Forces India 2008; 64:2: 33-36.
4. Banerjee M, Singh Rajeshwar, Srinivas VS, Arora MM. Biomarkers of Malignant Ascites – Myth or Reality. Medical Journal Armed Forces India 2011; 67: 2:108-12.
5. Banerjee M, Bandyopadhyay S, Arora MM, Somani BL. Effect of Hormone Replacement Therapy on lipid profile & lipid peroxidation in post menopausal women. Indian Jrl of Medical Biochemistry 2011;15:2: 54-59.

6. Somani BL, Arora MM, Bhatia K, Arora D, Banerjee M. A comparative study of the different diagnostic criteria of gestational diabetes mellitus and its incidence. Medical Journal Armed Forces India 2012; 68: 6-11
7. DB Gund Patil, Somani BL, Saha TK & Banerjee M. Serum urea : albumin ratio as a prognostic marker for critical patients without chronic kidney disease. Indian Journal of Clinical Biochemistry 2014; 29:1: 97-100.
8. Saha TK, Bhattarai AM, Batra HS, Banerjee Mithu, Misra Pratibha, Ambade Vivek. Correlation of microalbuminuria with estimated GFR (e GFR) with Cockcroft Gault & MDRD formulae in Hypertensives & Type 2 Diabetics. IJCB 2015; 30:3: 271-74
9. Banerjee M, Sachan A, Sinha I, Kumar A, Singh H. Comparison of Cockcroft Gault and MDRD equations in estimation of GFR in Chronic kidney disease. Indian Journal of Clinical Biochemistry. Vol 29. Issue supp 1, 2014: 55.
10. Kumar A, Batra HS, Banerjee M, Bandyopadhyay S, SahaTK, Misra P, Ambade V. PAI-1 study in Thalassemia major patients receiving multiple blood transfusions. Indian Jnl of Clinical Biochemistry IJCB 2017; 3: 343-46.
11. Clinical significance of low density lipoprotein cholesterol measurements : Direct versus Indirect methods. Sharma M, Batra HS, Banerjee M, Bhattarai AM, Agarwal D. MJSBH. Medical Journal of Shree Birendra Hospital 2016 Jul 5;15(1):17-25.
12. Brait M, Banerjee M, Maldonado M, Ooki Akira, Loyo M, Guida E, Izumchenko E et al . Promoter methylation of MCAM, ER alpha

and ER beta genes in serum in early stage prostate cancer. *Oncotarget*; 2017; 8:9: 15431-40.

13. Banerjee M, Kumar A, Batra HS, Bandyopadhyay S. Are Thalassaemic patients oxidatively challenged? *Med J Armed Forces India*. 2019 Oct;75(4):383-388.
14. Banerjee M, Batra A, Misra P. Role of Mannose as an antiglycolytic agent to eliminate preanalytical errors in glucose testing. *Jrl of Clinical and Diagnostic Research*; 2018;12:7: 26-9.
15. Comparison of three different methods of genomic DNA extraction and the effect of storage temperature on it's yield. Gupta S, Mitra S, Banerjee M, Sharma P. *Ind J Clin Biochem; Proceedings : 15<sup>th</sup> Asia Pacific Federation of Clinical Biochemistry & Laboratory Medicine, APFCB Congress (2019); 128*
16. Yadav SK, Sampath S, Batra HS, Banerjee M, Misra P, Agarwal D, Gupta PK. DNA Methylation in promoter region of p15 gene in patients of Acute Myeloid Leukemia & Myelodysplastic syndrome. *Ind J Clin Biochem; Proceedings : 15<sup>th</sup> Asia Pacific Federation of Clinical Biochemistry & Laboratory Medicine, APFCB Congress (2019); 166.*
17. Banerjee M, Kulhari K, Saha T.  
Assessment of DNA methylation in p15, p16 & E cadherin genes as a screening tool for early cancer cervix. *Ind J Clin Biochem*;2020: **35**, 423–429 2020  
<https://doi.org/10.1007/s12291-019-00837-w>
18. Batra HS, Sharma M, Singh ID, Banerjee M, Jagani R, Choudhury B. Study of DNA methylation in promoter region of p15 & E cadherin genes in head & neck tumours. Accepted in *Int Jrl Curr Res*

19. Nishant Kumar Chauhan, Benhur Joel Shadrach, Mahendra Kumar Garg, Pradeep Bhatia, Pankaj Bhardwaj, Manoj Kumar Gupta, Naveen Dutt, Ram Niwas Jalandra, Pawan Garg, Vijaya Lakshmi Nag, Praveen Sharma, Gopal Krishna Bohra, Deepak Kumar, Poonam Abhay Elhence, Mithu Banerjee, Deepti Mathur, Abhishek HL Purohit, Ravisekhar Gadepalli, Binit Sureka, Sanjeev Misra. Predictors of Clinical Outcomes in Adult COVID-19 Patients Admitted to a Tertiary Care Hospital in India: an analytical cross-sectional study. *Acta Bio Med* 2021; 92(3): e2021024.
20. Banerjee M, Gupta S, Sharma P, Shekhawat J, Gauba K. Obesity & COVID-19 – A fatal alliance. *Ind J Clin Biochem*; 2020;35(4): 410-17.
21. Banerjee M, Vasikaran S. Trends in Lab testing for Diabetes. *E Journal of International Federation of Clinical Chemsitry*; eJIFCC2020;31: 231-241.
22. Ram Niwas, Aneesa Shahul , M K Garg, Vijaya Lakshmi Nag, Pradeep Kumar Bhatia, Naveen Dutt, Nishant Chauhan, Jaykaran Charan, Shahir Asfahan, Praveen Sharma, Pankaj Bhardwaj, Mithu Banerjee, Pawan Garg, Binit Sureka, Gopal Krishna Bohra, Maya Gopalakrishnan, Sanjeev Misra. Clinical outcome, viral response and safety profile of chloroquine in COVID-19 patients -initial experience. *Adv Respir Med*. 2020; 88: 1–5.
23. Kumar B, Gopalakrishnan M, Garg MK, PurohitP, Banerjee M, Sharma P, Khichar S, Bhatia P, Nag V, Misra S. Endocrine dysfunction among patients with COVID-19: A single-center experience from a tertiary care center in India, *Ind Jour Endo & Metab*. 2021 Jan-Feb; 25(1): 14–19.

24. Tomo, S., Saikiran, G., Banerjee, M., & Paul, S. (2021). Selenium to selenoproteins – role in COVID-19. *EXCLI Journal*, 20, 781-791. <https://doi.org/10.17179/excli2021-3530>
25. Manoj Khokhar, Purvi Purohit, Dipayan Roy , Ashita Gadwal, Anupama Modi, Mithu Banerjee, Praveen Sharma. Acute Kidney Injury in COVID 19 – an update on pathophysiology and management modalities. *Archives of Physiology & Biochemistry*. <https://doi.org/10.1080/13813455.2020.1856141>
26. Sojit Tomo, Kiran PVSN Kumar, Dipayan Roy, Manjunath Sankanagoudar, Purvi Purohit, Mithu Banerjee, Praveen Sharma, Dharmveer Yadav, Sanjeev Misra. Coagulopathy and Complement activation- an ominous duo in COVID-19. *Expert Rev Haematol*; 2021 Feb;14(2):155-173.
27. Shilia Jacob Kurian, Mazhuvancherry Kesavan Unnikrishnan, Sonal Sekhar Miraj, Debasis Bagchi, Mithu Banerjee, B Shrikar Reddy, Gabriel Sunil Rodrigues, Mohan K Manu, Kavitha Saravu, Chiranjay Mukhopadhyay, Mahadev Rao. Probiotics in Prevention and Treatment of COVID-19: Current Perspective and Future Prospects. *Arch Med Res*. 2021 Mar19;S0188-4409(21) 00047-3.
28. Jyoti Shekhawat , Kavya Gauba , Shruti Gupta , Bikram Choudhury , Purvi Purohit, Praveen Sharma, Mithu Banerjee. Ten Eleven Translocase: Key regulator of the methylation landscape in cancer. *J Cancer Res Clin Oncol*. 2021 Jul;147(7):1869-1879. doi: 10.1007/s00432-021-03641-3. Epub 2021 Apr 28.
29. Kavya Gauba, Shruti Gupta, Jyoti Shekhawat, Praveen Sharma, Dharmveer Yadav, Mithu Banerjee. Mithu Banerjee. Immunomodulation by epigenome alterations in Mycobacterium Tuberculosis. *Tuberculosis (Edinb)*. 2021 May;128:102077. doi: 10.1016/j.tube.2021.102077. Epub 2021 Mar 12.

30. Shekhawat J, Gauba K, Gupta S,,Purohit P, Mitra P, Garg M, Misra S, Sharma P Banerjee M. IL-6 – perpetrator of cytokine storm in COVID-19. Ind J Clin Biochem. 2021 Jun 21 : 1–11.
31. Birdi A, Sinha A, Karpagga M, Banerjee M. Smouldering Myeloma : Chasing a hyperviscous sample. Ind J Clin Biochem. <https://doi.org/10.1007/s12291-021-00990-1>
32. Tomo S, Garg MK, Sharma Praveen, Banerjee M. Is there a role of Dehydroepiandrosterone sulphate in COVID-19 prognosis & treatment? . Endocrine Regulations. Accepted to be published in July 2021;55
33. Thomas L, Birangal SR, Ray R, Miraj SS, Munisamy M, Sanju SV, Banerjee M Varma M, Shenoy G, Rao M. Prediction of potential drug interactions between repurposed COVID-19 and anti tubercular drugs: An integrational approach of Drug information software and Computational data Techniques. Accepted in Therapeutic Advances in drug safety. <https://doi.org/10.1177%2F20420986211041277>
34. Kurian SJ, Unnikrishnan MK, Muray SS, Bagchi D, Banerjee M, Reddy BS, Rodrigues GS, Manu MK, Saravu K, Mukhopadhyay C, Rao M. Probiotics in prognosis & treatment of COVID-19: Current perspectives & future prospects. Arch of Med Res 2021-08-01; 52 (6);582-94.
35. A Modi, P Purohit, A Gadwal, S Ukey, D Roy, S Fernandes, M Banerjee. Cancer Investigation. In-Silico Analysis of Differentially Expressed Genes and Their Regulating microRNA Involved in Lymph Node Metastasis in Invasive Breast Carcinoma. 2021 <https://doi.org/10.1080/07357907.2021.1969574>
36. Patel DG, Kurian JS, Miraj SS, Rashid M, Thomas L, Rodirgue GS, Banerjee M etal Effect of Vitamin D supplementation in Type 2 Diabetes patients with Tuberculosis:A systematic review. Current



### **Chapters in a book**

1. ChatterjeeT, Banerjee M, Shruti P. Primary cutaneous lymphoma. In: M B Agarwal. editor. "Haematology Today" Mumbai : Bombay Hospital Institute of Medical Sciences 2007p 239-49.
2. Banerjee M."Dos & don'ts of patient safety in hospitals: Biochemistry". In : Chakravarty A, Kant S. editors. Patient safety in hospitals: Principles & Practice. Pune: Dept of Hospital Administration, AFMC, with WHO Country Office (India) 2009 p 233-35.
3. Updated the Laboratory Manual of the Armed Forces of India in 2008.
4. Mohammad O Hoque, Rachel Goldberg, Evgeny Izumchenko, Mithu Banerjee and Masamichi Hayash. Molecular aspects of urothelial cancer therapy, Chapter 5, in Bladder Cancer published by Avid Science. IISBN: 978-93-86337-08-5 In press.

### **Conferences & Workshops attended:**

1. "Changing paradigms in clinical medicine – An update" organised by ONGC at Ahmedabad, 25-30 Sep 2000.
2. Annual Conference of Association of Medical Biochemists of India held at Kolkata in 2002 and was speaker in a symposium on pre analytical variables
3. Participated in a workshop ATCC I – Analytical techniques in clinical chemistry I held at AFMC in 2003

4. CME on Recent Advances in Medicine held at Command Hospital Kolkata 11-12 Dec 2004.
5. Delivered a guest lecture on “Total quality management in the lab” at the North East chapter meet of AMBI held at Shillong in 2004
6. CME on Minimal Access surgery held at Command Hospital Kolkata in 2005
7. CME on Expanding Vistas in Pathology held at Army Hospital Research & Referral in 2005
8. Conducted slide seminar at IAPM- Indian Association of Pathologists & Microbiologists West Bengal chapter meet at Kolkata in 2005
9. CME on Critical care held at Command Hospital Kolkata 9-10 Dec 2006
10. Participated in ATCC II – Analytical techniques in clinical chemistry at AFMC in 2006
11. Delivered a guest lecture on Total Quality Management in the clinical chemistry lab at the RN Ghosh memorial CME held at Command Hospital Kolkata on 23 Sep 2006
12. Attended Annual conference of Association of Clinical Biochemists of India held at AFMC Pune in Nov 2006
13. Delivered a guest lecture on “Total Quality Control” at the West Bengal chapter of Association of Medical Biochemists of India at RG Kar hospital Kolkata in 2007
14. Workshop on Training programme in educational science & technologies for teachers in medical sciences held at AFMC from 01-06 Mar 2008.

15. Annual Conference of Indian Association of Medical Microbiologists IAMM held at AFMC, 20-25 Oct 2008
16. Annual Conference of Clinical Biochemists of India held at Kolkata 18-21 Dec 2008. Presented a guest lecture on “Atypical manifestations of Dengue”.
17. Attended a pre conference workshop on “Setting up a molecular biology lab” at Dishan Diagnostics during Annual Conference of Clinical Biochemists of India held at Kolkata 17 Dec 2008.
18. National update of Transfusion Medicine held at AFMC Pune, 11-12 Sep 2009.
19. Annual Conference of Association of Medical Biochemists of India held at Hyderabad in 12-14 Nov 2010. Participated in a symposium on Chemical warfare.
20. Preconference workshop on “Molecular Biology” held at CDFD (Centre for DNA finger printing & diagnostics) Hyderabad during Annual Conference of Association of Medical Biochemists of India held at Hyderabad on 11 Nov 2010.
21. CME on “Molecular diagnostics” held on 6-7 Feb 2010 at Yashwant Rao Chavan auditorium in Pune
22. Medical Council of India approved workshop on Medical Education organised by Dept of Medical Education MUHS from 23 Nov-26 Nov 2011.
23. Annual conference of Association of Clinical Biochemists of India held at Gwalior 01- 05 Dec 2011 & presented a paper titled “Effect of Hormone Replacement Therapy on lipid profile & lipid peroxidation in post menopausal women”

24. Pre conference workshop on MALDI TOF at DRDO Gwalior during Annual conference of Association of Clinical Biochemists of India held at Gwalior 03 Dec 2011
25. Workshop on Quality Assurance in clinical chemistry by NABL at Golwilkar labs 02-03 Mar 2012
26. Workshop on Quality management systems & Internal audit training course organised by NABL from 26-29 Jun 2012
27. CME on “Cutting edge in Pathology” organised by IAPM-ID, Indian Association of Pathology & Microbiology- International division at AFMC, Pune 15-16 Sep 2012.
28. CME on “Expanding vistas in Pathology & Haematology” organised at AFMC, Pune 17-18 Sep 2012.
29. Workshop on “Method validation” by NABL on 19-20 Dec 2012 at Ruby hall , Pune
30. Reserach methodology workshop held at Armed Forces medical college in 2012.
31. Presented two papers at 40<sup>th</sup> national Conference of Association of Clinical Biochemists of India held at New Delhi titled “ DNA methylation in tumour suppressor genes in cervical cancer” and “ Mannose as a preservative in the Clinical Chemistry Lab” from 03-06 Dec 2013.
32. Presented invited paper on “eGFR by CG equation & MDRD in CKD- How far are we from the truth?” at 41<sup>st</sup> National conference of Association of Clinical Biochemists of India held at AIIMS Jodhpur. Presented poster on DNA methylation in p15 & E cadherin genes in head & neck tumours at the same conference.

33. Attended Pre conference workshop on Flowcytometry at 41<sup>st</sup> National conference of Association of Clinical Biochemists of India held at AIIMS Jodhpur.
34. Attended 43<sup>rd</sup> conference Association of Clinical Biochemists of India at KMC Mangalore and presented poster on MCAM, ER alpha, ER beta as early markers of prostate cancer .
35. Attended World conference on Genetics, genomics and personalised medicine at JN Tata memorial auditorium at Indian Institute of Science, Bengaluru from 15 to 17 Nov 2017 and presented paper titled “ Biomarkers of prostate cancer- looking beyond PSA”
36. Attended 25th Ambicon, Association of Medical Biochemists of India at Lalith Mahal Palace, Mysuru. Chaired and participated in a symposium titled ‘Why DNA is not your destiny?’ along with my entire team at Dept of Biochemistry , AFMC.
37. Delivered a lecture on Epigenetics titled “Why your DNA is not your destiny ?” at a CME on Molecular Diagnostics in the era of predictive, preventive and personalised medicine on 14 Feb 2019 organised by Suraksha superspeciality diagnostic chain.
38. Presented paper titled “Trends in Laboratory testing for Diabetes Mellitus” at The APFCB symposia at 15<sup>th</sup> APFCB Congress 2019.
39. Presented poster at International Federation of Clinical Chemistry 15-17 Feb 2021 titled “SARS-CoV2 IgG antibodies and it’s clinical Correlates in convalescent plasma donors”
40. Presented paper titled “Assessment of DHEAS, Cortisol, and the DHEAS/Cortisol Ratio in Patients with Coronavirus Disease: A Pilot Study” at LMCE 2021 (Laboratory Medicine Congress & Exhibition) & Korean Society of Laboratory Medicine 62nd Annual Meeting.

41. My poster titled “The Prevalence of Anemia and Obesity in Indian School Children: A Survey” was presented at American Association of Clinical Chemistry 2021.
42. Presented poster titled “Mitochondrial Superoxide Dismutase Gene Polymorphism (Rs4880) And Levels In Tuberculosis Patients” was presented at American Association of Clinical Chemistry 2021.
43. My poster titled “An in - silico analysis of Differentially expressed genes in HPV positive & HPV negative head & Neck Cancers” was presented at American Association of Clinical Chemistry 2021.

### **Career Intentions:**

My interests are in the fields of Epigenetics & Clinical Chemistry.

In Epigenetics, I intend to validate DNA methylation status of tumour suppressor genes in saliva so that this non invasive test can be used for screening of cancers of the oral cavity.

I am interested in Precision medicine. In that direction I have an extramural collaborative project sanctioned by the ICMR TB consortium which is looking into the pharmacogenomics of antitubercular therapy. I intend to start liquid biopsy for colon & Lung cancer shortly in the Dept and have preliminary data on Colon cancer.

In my present appointment, I intend to integrate my speciality of Laboratory Medicine with the art and science of contemporary medicine to add a more holistic approach which is an imperative in the betterment of patient care.

