

## Curriculum Vitae

**Mitali Mukerji, PhD, FNASc**  
**& Professor Academy of Scientific and Innovative Research (AcSIR)**

Date of Birth: 13th November 1967

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### **Contact Details:**

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### **Educational qualification:**

<b>Degree</b>	<b>Year</b>	<b>Institute</b>	<b>Area</b>	
<b>Bachelor of Science</b>	1988	University of Allahabad	Botany, Zoology, Chemistry	First division
<b>Master of Science</b>	1991	Molecular Biology & Biotechnology, Indian Agricultural Research Institute (IARI), New Delhi	Plant Molecular Biology, Biochemistry & Genetics	CGPA 4/4 Thesis: <i>Agrobacterium tumefaciens</i> mediated transformation of chickpea Supervisor: Dr. Srinivasan
<b>PhD</b>	1997	Developmental Biology & Genetics Laboratory, Indian Institute of Science (IISc), Bangalore	Microbial Genetics & Molecular Biology	Thesis: Molecular Mechanism of activation of the cryptic <i>bgl</i> operon of <i>E.coli</i> Supervisor: Prof S. Mahadevan

## **Work Experience:**

<b>Designation</b>	<b>Period</b>		<b>Organization</b>
Scientist Fellow	1/12/ 97	28/3/2000	CBT(now IGIB)
Scientist (C)	29/3/2000	28/3/2003	CBT(now IGIB)
Senior Scientist (EI)	29/3/2003	28/3/2006	CSIR-IGIB
Principal Scientist (EII)	29/3/2006	28/3/2010	CSIR- IGIB
Sr. Principal Scientist (F).	29/3/2010	28/3/2015	CSIR-IGIB
Chief Scientist (G)	29/3/2015	Present	CSIR-IGIB

## **Brief career highlights:**

After my PhD (IISc) in 1997, I joined Prof Samir Brahmachari as a Scientist Fellow in Functional Genomics Unit at CBT and was responsible for setting up the genomics lab from procurements to establishing high-throughput genotyping and sequencing and cost effective protocols for rendering sequencing both in house as well collaborators. We initiated research in SCAs with AIIMS and using a novel population polymorphism scanning approach demonstrated disease mechanisms, developed genetic diagnosis for ataxia that has served over 5000 families and identified founders for SCA1, SCA2, SCA12, SCA3, SCA7, FRDA in India. I also assisted in the setting up an automated sequencing facility for genetic diagnosis in NIMHANS. As convener of the Task Force project “Predictive medicine using repeat and single nucleotide polymorphism” I was primarily responsible for co-ordination and networking of various scientific activities across six CSIR institutes to develop a database of Indian Genome Variation. Responsibilities included project planning, management and implementation, population identification, sample collection and community engagement, sample management, sequencing, genotyping and primer synthesis, SNP discovery, validation and analysis, Data QC, IGV data handling, database and portal development, and global data analysis. This project has provided the first comprehensive genetic landscape of the Indian population. I was also responsible for setting up the protocols, manpower, scientific monitoring and coordination of The Centre for Genomics Application, TCGA (the first PPP in genomics services) activity with IGIB. I also developed expertise in computational analysis of genomics data and made key contributions in elucidating role of Alu repeats for creation of new regulatory networks in human. We have initiated a new area of research in Ayurgenomics for integrating the principles of Ayurveda with genomics for P4 medicine. The first project funded by DST also involved field study in Russia and I led a team for this activity. We provided the first molecular evidence of Prakriti and discovered a marker for high altitude adaptation. We have established the CSIR’s Ayurgenomics Unit TRISUTRA for translational research using this innovative approach in 2011 and as a programme director I have been responsible

for setting up the unit. I have contributed extensively to manpower development including teaching in genomics and Ayurgenomics. Many of the frameworks that our group has initiated/participated are now being used in larger programmes such as the rare disease programs (GOMED) and (GUARDIAN) at IGIB, national Ayurgenomics initiatives and also the DBT-Genome India project.

### **Expertise:**

- Plant Molecular Biology
- Microbial molecular genetics
- Human Genomics: High throughput Genomics Platforms for Genotyping and Expression and Analysis
- Next Generation Exome, genome, transcriptome and metagenome sequencing and analysis
- Rare Disease Genomics: hereditary ataxia
- Computational & Functional Genomics of Alu repeats in the human genome
- Population Genomics: Indian Genome Variation Consortium
- Development of a novel and unique area of Ayurgenomics
- Genome Annotation
- Human Phenomics and P4 medicine

### **Awards and Recognitions:**

- Awarded Institute **Gold Medal** for outstanding performance in M.Sc at the Indian Agricultural Research Institute, New Delhi (1991).
- Recipient of **Junior Research Fellowship** of University Grants Commission, India from August 1991- July 1993.
- Recipient of **Senior Research Fellowship** of University Grants Commission India from August 1993 - September 1996.
- Awarded Fellowship for **Young Scientist** in 16th International Congress of Biochemistry and Molecular Biology ( XVI IUBMB) held at New Delhi, India 19-22 September, 1994.
- **Best Poster** award in the 65th Annual Meeting of the Society of Biological Chemists (India) held at Bangalore from November 20-23, 1996.
- Recipient of **CSIR Young Scientists' Award** in September 24th 2001.
- **Young Women Bioscientist award**, Indian National Science Congress 2004.
- Nominated **HUGO** (Human Genome organization) **Member** in 2006.
- Recipient of National **DBT Young Women Bioscientist** award in 2008.

- Recipient of the national **Shanti Swarup Bhatnagar Award in Medical Sciences** in 2010
- **S.S. Katiyar Oration Lecture**, Indian National Science Congress 2011
- **Pandit Shiv Nath Sharma Shodh Puruskar** for research in Ayurveda 2012
- Elected **Fellow of the Indian Academy of Sciences**, 2014
- **VASVIK award** by Vividhlakshi Audyogik Samshodhan Vikas Kendra (VASVIK) for Woman Scientist, 2016
- **Kirtan Sanjeevani Pushpalata Ranade National Award** for Women in research, 2017
- **Board Member of International Human Phenomics Consortium** founded by Jeremy Nicholson, Leroy Hood and Li Jin, 2018

### **Research Highlights:**

My research interest is in the broad area of genome variations and their effect on human genome organisation and function. The primary aim of my lab is to develop methods using integrative genomics approaches for identifying informative markers that link to health and disease states. We have also initiated a new area of Ayurgenomics wherein our team has provided a novel framework for integration of principles of predictive, prevent and personalised medicine in Ayurveda with modern medicine using multi-omic technologies. Salient contributions from our work are highlighted below:

#### **1. Ayurgenomics and its applicability**

Primary aim is to develop an integrative system biology framework that would help apportion human genome variability into constituent axes that are linked to healthy and disease states. In the Ayurveda, the oldest Indian system of precision medicine, individuals are classified into different constitution types “Prakriti” based on which an individual’s health and disease trajectories as well as responsiveness to drug and environment can be predicted. Our group has been involved in developing a novel framework of stratified medicine wherein we use diverse “omics” approaches with phenotyping principles of Ayurveda and objective measures from modern medicine. We have provided the first evidence of genomic correlates of Prakriti and have also demonstrated how this approach has been useful in discovery of a predictive marker for high altitude adaptation as well as thrombotic outcomes in hypoxia. Using machine learning and advanced statistical approaches our team has been also able to build predictive models of Prakriti for its global application. Following the leads from the first proof of concept study in Ayurgenomics we have developed an innovative framework of Ayurgenomics for translational research in CSIR TRISUTRA Unit at IGIB. This is a unit with inter-disciplinary approach combining the strengths of Ayurveda, high throughput genomics, genome informatics, medicine and public health for developing solutions for affordable health care and also use leads from Indian Traditional medicine for discoveries.

## **2. Genome Variation and Human Disease susceptibility**

Our group has been involved in the Indian Genome Variation Consortium (IGVC) project and carried out extensive studies on SNPs and CNVs in Indian populations and its comparison with world populations. I have been the convener of the Indian Genome Variation Consortium project which provided the first comprehensive genetic landscape of Indian populations. Leads from IGVC project has been used for tracing human migrations and history of diseases, identifying founders in different hereditary ataxias, signatures of human adaptations with respect to geo-climatic conditions and pathogen prevalence and developing genome based diagnostics primarily in the area of neurodegenerative disorders. I also led the Indian team for HUGO PanAsian project, which provided insight into peopling of Asia and brought out relatedness of Indian populations with other Asian populations.

## **3. Genetics of hereditary ataxia**

We have carried our a collaborative research spanning over 20 years with AIIMS, Delhi and NIMHANS Bangalore in the area of clinically and genetically heterogenous hereditary ataxias. Our group has been able to develop an algorithm for genetic diagnostic for rare diseases in Indian population based on our experience in SCAs. Using population polymorphism scanning approaches we have provided insights into the mechanism and origin of triplet repeat expansion in hereditary ataxias, identified founders for different ataxias like SCA1, SCA2, SCA3, SCA7 and SCA12 in the Indian population, traced mutational histories of many of these through human migrations etc. We also for the first time carried out exome sequencing in uncharacterized cases and identified novel mutations in reported as well as novel genes associated with ataxia. This has led to development of targeted panel of ataxia. We have also built a resource of biorepository of ataxia including patient specific LCL and iPSc induced neuronal lines to dissect the biology of ataxia and identify genetic modifiers. AIIMS has an ataxia clinic and the diagnostic algorithm developed through our initiative has been useful in classifying over 5000 families that have been referred to AIIMS from different parts of the country.

## **4. Repetitive sequences in genome organisation and function**

We have used computational and functional genomics approaches to carry out Functional annotation of primate specific Alu repeats in the human genome: Our studies at the genome-wide scale have shown that these repeats, are non-randomly distributed in the genome and transcriptome and can create novel human specific transcriptional networks through diverse RNA mediated regulatory mechanisms by providing enhancer elements, miRNA target sites and splice isoform diversity through exonization, antisense and editing mechanisms. These functional elements

are being mapped at the genome wide scale and their specific involvement in integrating stress signals to regulatory networks in being investigated.

**Research Support:**

1. Project Participant in **DBT sponsored “ Programme on Functional Genomics” from 1998 – 2003**
2. Project Convener of **CSIR TYFP project on “Principal Investigator Predictive medicine using single nucleotide and repeat polymorphism” from 2002 to 2007**
3. Principal Investigator in an **Indo –Russian collaborative DST Sponsored project on Genotype Phenotype correlation based on Principles of Ayurveda with special focus on Prakriti from 2003 – 2006**
4. **Principal Investigator** in a DBT sponsored project on “ Disease Genomics: Identification of predisposition markers and candidate genes for neuropsychiatric disorders from 2003 to 2006
5. **Principal Investigator** under the CSIR Young Scientist Award “Human mitochondrial chip for studies in mitochondria disorders
6. **Convenor** CSIR supported Supra-Institutional project (2007-2012) “An integrative approach in deciphering Genotype – Phenotype Correlation Human Complex Disorders
7. **Principal investigator** in CSIR supported project on Role of Alu repeats in genome wide regulation (2007-2012)
8. **Principal investigator** in CSIR supported project on Ayurgenomics: Integration of ayurveda with genomics for systems biology approach in predictive and personalized medicine (2009 -2012)
9. **Programme Director** and **Principal Investigator** (Genomics) in CSIR supported Ayurgenomics Unit (TRISUTRA ) for Translational Research and Innovative Science Through Ayurgenomics (2011 – 2017)
10. **Principal Investigator** in a DBT supported “Pediatric Renal Biology Program on Nephrotic Syndrome subproject entitled “Whole exome analysis for mutations in genes encoding key podocyte proteins” (2017 – 2022)

11. **Co-PI** in an ICMR supported “Advanced Centre for research in Pediatric kidney diseases to Prof Arvind Bagga, AIIMS (2017 – 2022)
12. **Principal Investigator** (Genomics) in a Ministry of AYUSH supported Centre of Excellence for “Applied Development Of Ayurveda Prakriti and Genomics” (2018 – 2021)
13. **Co -investigator** in a Wellcome funded project on Hypoxia and Pregnancy Study (HAPS) between AIIMS, SNM, Leh and UCL,London (2016 – 2018)
14. **Co-investigator** in ICMR supported project to AIIMS entitle Understanding Pathobiology of Multiple Sclerosis- Biomarkers, Genetic and Phenotypic Signatures (2018 – 2021)
15. **Principal Investigator in a DBT supported consortium project on** Genome India: Cataloguing the genetic variation of India Supported by DBT (2020- 2023)

### **Publications:**

#### **Ayurgenomics and its applicability**

1. **Mukerji, Mitali\***, Sagner, Michael, Genomics and Big Data Analytics in Ayurvedic Medicine (Editorial) **Progress in Preventive Medicine**: February 21, 2019 doi: 10.1097/
2. Lemonnier, N; Zhou, G; Prasher, B; **Mukerji, M**; Chen, Z; Brahmachari SK; Noble, D Auffray, C; Sagner, M, Traditional Knowledge-based Medicine: A Review of History, Principles, and Relevance in the Present Context of P4 Systems Medicine **Progress in Preventive Medicine**: December 2017 - Volume 2 - Issue 7 - p e0011
3. Chauhan NS, Pandey R, Mondal AK, Gupta S, Verma MK, Jain S, Ahmed V, Patil R, Agarwal D, Girase B, Shrivastava A, Mobeen F, Sharma V, Srivastava TP, Juvekar SK, Prasher B, **Mukerji M**<sup>#</sup>, Dash D Western Indian Rural Gut Microbial Diversity in Extreme Prakriti Endo-Phenotypes Reveals Signature Microbes. **Front Microbiol.** 2018 Feb 13;9:118.
4. Kumar Mondal A, Kumar J, Pandey R, Gupta S, Kumar M, Bansal G, **Mukerji M**, Dash D, Singh Chauhan N. Comparative Genomics of Host-Symbiont and Free-Living Oceanobacillus Species. **Genome Biol Evol.** 2017 May 1;9(5):1175-1182.
5. Tiwari P, Kutum R, Sethi T, Shrivastava A, Girase B, Aggarwal S, Patil R, Agarwal D, Gautam P, Agrawal A, Dash D, Ghosh S, Juvekar S<sup>#</sup>, **Mukerji M**<sup>#</sup>, Prasher B<sup>#</sup>.

Recapitulation of Ayurveda constitution types by machine learning of phenotypic traits. **PLoS One**. 2017 Oct 5;12(10):e0185380.

6. Prasher B#, Varma B, Kumar A, Khuntia BK, Pandey R, Narang A, Tiwari P, Kutum R, Guin D, Kukreti R, Dash D; TRISUTRA Ayurgenomics Consortium, **Mukerji M**#. Ayurgenomics for stratified medicine: TRISUTRA consortium initiative across ethnically and geographically diverse Indian populations. **J Ethnopharmacol**. 2016 Jul 22. pii: S0378-8741(16)30488-3.
7. Bhavana Prasher#, Greg Gibson, **Mitali Mukerji**# Genomic insights into Ayurvedic and Western approaches to personalized medicine Journal of Genetic **J Genet**. 2016 Mar;95(1):209-28. Review
8. Aggarwal S, Gheware A, Agrawal A, Ghosh S, Prasher B#, **Mukerji M**#: Indian Genome Variation Consortium (2015). Combined genetic effects of EGLN1 and VWF modulate thrombotic outcome in hypoxia revealed by Ayurgenomics approach. **J Transl Med**. 2015 Jun 6;13:184.
9. Ahmad T, Kumar M, Mabalirajan U, Pattnaik B, Aggarwal S, Singh R, Singh S, **Mukerji M**, Ghosh B, Agrawal A Hypoxia Response in Asthma: Differential Modulation on Inflammation and Epithelial Injury. **Am J Respir Cell Mol Biol**. 2012 Jul;47(1):1-10
10. Sethi TP, Prasher B#, **Mukerji M** # Ayurgenomics: a new way of threading molecular variability for stratified medicine. **ACS Chem Biol**. 2011 6: 9. 875-880
11. Aggarwal S, Negi S, Jha P, Singh PK, Stobdan T, Pasha MA, Ghosh S, Agrawal A; Indian Genome Variation Consortium, Prasher B#, **Mukerji M**# EGLN1 involvement in high-altitude adaptation revealed through genetic analysis of extreme constitution types defined in Ayurveda. **Proc Natl Acad Sci U S A** 2010, 107: 44. 18961-18966
12. Bhavana Prasher, Sapna Negi, Shilpi Aggarwal, Amit K Mandal, Tav P Sethi, Shailaja R Deshmukh, Sudha G Purohit, Shantanu Sengupta, Sangeeta Khanna, Farhan Mohammad, Gaurav Garg, Samir K Brahmachari, **Mitali Mukerji**# Whole genome expression and biochemical correlates of extreme constitutional types defined in Ayurveda. **J Transl Med** 2008 6: 09

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13. Narang A, Uppilli B, Vivekanand A, Naushin S, Yadav A, Singhal K, Shamim U, Sharma P, Zahra S, Mathur A, Seth M, Parveen S, Vats A, Hillman S, Dolma P, Varma B, Jain V; TRISUTRA Ayurgenomics Consortium, Prasher B, Sengupta S, **Mukerji M**, Faruq 2020 Frequency spectrum of rare and clinically relevant markers in multiethnic Indian populations (ClinIndb): A resource for genomic medicine in India..**Hum Mutat.** Sep 9. doi: 10.1002/humu.24102
14. Gupta I, Narang A, Singh P, Manchanda V, Khanna S; Indian Genome Variation Consortium, **Mukerji M**, Natarajan VT, Dash D. 2019 VitiVar: A locus specific database of vitiligo associated genes and variations. **Gene X.** May 11;3:100018.
15. GUARDIAN Consortium, Sivasubbu S, Scaria V. 2019 Genomics of rare genetic diseases-experiences from India. **Hum Genomics.** Sep 25;14(1):52.
16. Grover R, Burse SA, Shankrit S, Aggarwal A, Kirty K, Narta K, Srivastav R, Ray AK, Malik G, Vats A, Motiani RK, Thukral L, Roy SS, Bhattacharya S, Sharma R, Natarajan K, **Mukerji M**, Pandey R, Gokhale RS, Natarajan VT. Myg1 exonuclease couples the nuclear and mitochondrial translational programs through RNA processing. **Nucleic Acids Res.** 2019 Jun 20;47(11):5852-5866.
17. Pragyana Acharya, Rintu Kutum, Rajesh Pandey, Asha Mishra, Rohini Saha, Akshay Munjal, Vineet Ahuja, **Mitali Mukerji** and Govind K. Makharia. First Degree Relatives of Patients with Celiac Disease Harbour an Intestinal Transcriptomic Signature that Might Protect them from Enterocyte Damage 2018 **Clinical and Translational Gastroenterology.** 2018 Oct; 9(10): 195.
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19. Naskar T, Faruq M, Banerjee P, Khan M, Midha R, Kumari R, Devasenapathy S, Prajapati B, Sengupta S, Jain D, **Mukerji M**, Singh NC, Sinha S Ancestral Variations of the PCDHG Gene Cluster Predispose to Dyslexia in a Multiplex Family. **EBioMedicine.** 2018 Feb;28:168-179
20. Gautam P, Chaurasia A, Bhattacharya A, Grover R; Indian Genome Variation Consortium, **Mukerji M**<sup>#</sup>, Natarajan VT Population diversity and adaptive evolution in keratinization genes: impact of environment in shaping skin phenotypes **Molecular Biology and Evolution** 2015 Mar;32(3):555-73
21. Narang A, Jha P, Kumar D, Kutum R, Mondal AK; Indian Genome Variation Consortium, Dash D, **Mukerji M** Extensive copy number variations in admixed Indian population of African ancestry: Potential involvement in adaptation.**Genome Biol Evol.** 2014 Nov 13. pii: evu250.
22. Petersen DC, Libiger O, Tindall EA, Hardie RA, Hannick LI, Glashoff RH, **Mukerji M**; Indian Genome Variation Consortium, Fernandez P, Haacke W, Schork NJ, Hayes VM

- Complex Patterns of Genomic Admixture within Southern Africa. **PLOS Genetics** 2013 Volume 9 ( Issue 3) e1003309
23. Jha P, Sinha S, Kanchan K, Qidwai T, Narang A, Singh PK, Pati SS, Mohanty S, Mishra SK, Sharma SK, Awasthi S, Venkatesh V, Jain S, Basu A, Xu S; Indian Genome Variation Consortium, **Mukerji M**<sup>#</sup>, Habib S Deletion of the APOBEC3B gene strongly impacts susceptibility to falciparum malaria. **Infect Genet Evol** 2012 12: 1. 142-148
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### Genetics of hereditary ataxia

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### Repetitive sequences in genome organisation and function

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### **Cryptic operon in E.coli**

69. **M Mukerji**, S Mahadevan (1997) Cryptic genes:evolutionary puzzles **J. Genet** 76:2.147-159
70. **M Mukerji**, S Mahadevan (1997) Characterization of the negative elements involved in silencing the bgl operon of Escherichia coli: possible roles for DNA gyrase, H-NS, and CRP-cAMP in regulation. **Mol Microbiol** 24: 3. 617-627
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### **As an Indian Genome Variation Consortium author**

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#### **As a HUGO Pan-Asian SNP Consortium author**

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### **Patents:**

- a. A US patent granted for US PTO application No: 09/707,919 filed on Nov 8, 2000. Patent No. 6623927  
  
A method of detection for human spinocerebellar ataxia 2 gene variants  
Inventors Samir K. Brahmachari, Shweta Choudhry, **Mitali Mukerji**  
and Satish Jain
- b. An Indian, US and WO patent filed for Novel allelic variant of cyp2c19 associated with drug metabolism. Brahmachari S K, Ravina Fernandes, Sharma Nitin, Suparna Martis, Kukreti R, **Mukerji M**

- c. A US patent issued on January 30, 2014 or US PTO application No: 09/707,919 filed on October 13, 2011. Patent No. 20140030709 and EA, RU Patent No. 023630, issued on Jan 30th, 2016

Biomarker for Detecting High-Altitude Adaptation and High-Altitude Pulmonary Edema

**Inventors:** Bhavana Prasher, Shilpi Aggarwal, Mohammed Abdul Qadar Pasha, **Mitali Mukerji**

### **Book Chapters**

1. Mohd. Faruq, Uma Mittal, Achal K. Srivastava and **Mitali Mukerji**, Hereditary Spinocerebellar Ataxias in India, in Genomics and Health in the developing world , 2012, Ch 88, 1039 -1088, Ed. Dhavendra Kumar, Oxford Univ Press, UK
2. **Mitali Mukerji** and Bhavana Prasher, Genomics and Traditional Indian Ayurvedic Medicine, in Genomics and Society: Ethical, Legal, Cultural and Socioeconomic Implications 2016, Ch 14, 271-292 Ed. Ed Dhavendra Kumar and Ruth Chadwick, Elsevier Inc.
3. **Mitali Mukerji**, Beena Pillai, Somdutta Sen and Samir K. Brahmachari, Genomics and Functional Genomics, in Textbook Of Biotechnology (2004, 2007) Ed. H.K.Das, John Wiley & Sons, 2004

### **Copyrights:**

4. Questionnaire for Control samples during genetic studies Samir K Brahmachari, Balaram Ghosh, **Mitali Mukerji**. Filed for copyright on 27/11/2001, CR 22/2001
5. Questionnaire for Prakruti assessment. Samir K Brahmachari, Bhavana Prasher, Shilpi Aggarwal, Sapna Negi, **Mitali Mukerji**  
Reg No. SW-2284/2005, Reg Date 13-May-05
6. High Throughput – sequence, screening and SNP (HT-SSS). **Mitali Mukerji** Debasis Dash, Dipayan Dasgupta, Siddharth Bisht, S. K. Brahmachari  
Joint copyright application (CSIR and Silicogene Informatics) CR-31/2005.

### **Invited lectures/oral presentations in International Symposia:**

1. Invited lecture in Asia-Pacific Congress of Clinical Biochemistry, Jaipur, November 17th 2019
2. Plenary speaker in 8th International Chefs Conference organized by Indian federation of culinary association (IFCA) on 3rd October 2019, Delhi
3. Plenary speaker in 2nd Ayurveda Developmental Therapeutics Program (ADTP) Meeting Pune, Friday, February 8th 2019
4. Plenary speaker in 2nd International Conference on Human Phenomics held in Fudan University, Shanghai Oct 30th to 3rd Nov 2018
5. International meet on frontiers in life science, Guru Nanak Dev University, Amritsar, March 22, 2018
6. Traditional Health Knowledge Inspired Nutraceuticals, Transdisciplinary University Bengaluru. March 6, 2018,
7. International conference on genome biology and informatics in health sciences, SASTRA University, Tanjore, March 2018
8. Keynote address At Tradmed International 2017, Colombo, Sri Lanka 23rd November 2017 on Translational research and Innovative science insights from TRISUTRA consortium
9. Indo-Japan Information exchange – diagnostic technologies under the auspices of The International Promotion of Japan’s healthcare and services , Hyatt Regency, Delhi 06th Oct 2017
10. NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) Conference in Bhubaneswar, Oct 2nd-4th, 2017,
11. NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) Conference in Cochin from Oct 3rd-5th, 2016, , India
12. Plenary lecture in 6th International Symposium on Translational Cancer Research – Prevention and Treatment of Cancer: Hypes and Hopes” at Hyatt Regency, Ahmedabad in February 04-07, 2016, Gujarat
13. International Seminar on “Promotion, Prevention and Pacification: Ayurvedic Landscape” at Science City Auditorium, Kolkata and J B Roy State Ayurvedic Medical College & Hospital on 09th Feb, 2016
14. In School of the International Brain Research Organization (IBRO) “From Bench to Bedside: Translational Neuroscience Research in Healthy Brain Aging and Neurological Disorders” held at the University of Sri Jayewardenepura, Sri Lanka, 16th December 2015.
15. As resource personnel for the natural Product Symposium on Movement Disorders held at the University of Sri Jayewardenepura, Sri Lanka from 19th -20th December 2015

16. On Ayurgenomics : An integrative genomics approach for partitioning the human genome variability for stratified medicine 14th FAOBMB Congress in Hyderabad, 27-30 November, 2015
17. On “Applicability of basal variation data from the Indian Genome Variation Consortium database: a platform for predictive medicine” NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) Conference at Hyderabad, 1st - 3rd October 2015,
18. “Bridging the gap from genotype to phenotype” during the visit of Prof Eric Lander as a part of TNQ-Cell Press initiative National Institute of Immunology on February 23, 2015
19. “Novel regulatory networks in the human transcriptome through Alu RNA exaptation” in 5th Asian Chromatin Meeting to be held in JNCASR, Bangalore in January January 15th – 18th, 2015.
20. Sixth Science Conclave at IIIT Allahabad, Dec 8th-15th 2015
21. Next-Gen Genomics & Bioinformatics Technologies (NGBT) Conference (NGBT 2014) held in NIMHANS Bangalore from Nov 17th-19th 2014.
22. Genomics through Ayurveda Prism (about TRISUTRA Unit) at the research conclave “Ayurveda Inspired Discovery”, held as part of the Sixth World Ayurveda Congress (WAC) on 7th Nov 2014 TRISUTRA:
23. Invited lecture in Indo-German Workshop on Diagnostics of Translational Genome Sequencing in Clinical and Public Health Microbiology to be held at The Madras Medical Mission, Chennai from 19 to 21 March 2014.
24. International Symposium on Emerging Trends and Challenges in Neuroscience & XXXI Annual Conference of Indian Academy of Neurosciences held at Allahabad, India from October 25 – 27, 2013
25. 7th Annual Convention of ABAP & International Conference on Plant Biotechnology, Molecular Medicine & Human Health held at Delhi University, South Campus from October 18-20, 2013
26. International Conference on Next Revolution in Genetics & Genomics -Applications in Health and Disease, held at New Delhi, 27-29, January, 2013
27. Indian centenary Science Congress, January 6th 2013 at Kolkata
28. 38th annual conference of the Indian Society of Human Genetics and International symposium on Developmental and Complex Disorders, Banaras Hindu University in Varanasi from 9th to 11th December, 2012
29. 10th Asia- Pacific Conference on Human Genetics in Kuala Lumpur, Malaysia from 5th -8th Dec 2012
30. 2012 International NGS and Bioinformatics for Genomics and Health Care, held in IIT Chennai from November 1-3, 2012

31. Genomeet, 2012, held at CSIR-IGIB, Delhi from 30th December 2011 – 1st January 2012
32. Genentech, South San Francisco, USA Oct 21st, 2011
33. . National Institute of Environmental Health Sciences, USA October 19, 2011
34. Department of Environmental Health Sciences , Bloomberg School of Public Health, Johns Hopkins University, October 17, 2011
35. CSIR-Mayo joint symposium, Mayo Clinic in Rochester, Minnesota October 11-16, 2011,
36. Fourth Indo-American Kavli Frontiers of Science symposium in Arnold and Beckman Centre, National Academy of Science, California Irvine on April 18-20 2011
37. 4th World Ayurveda Congress Bangalore, 2010
38. XIVth International Human Genome Meeting (HGM2009), Montpellier, 2010
39. International Symposium on “Role of Genomics in clinical practice and XXXV Annual Conference of ISHG, SGPGI, Lucknow, 2010
40. Pre- conference workshop on advances in genomic techniques as a part of 4th International conference on birth defects and disabilities in the developing world AIIMS, New Delhi 2009
41. Korean BioInformation Center, Daejeon, Korea on 23rd April, 2009
42. International symposium of constitutional medicine, Korean Institute of Oriental medicine, Daejeon, Korea , 2009
43. International Symposium on “Ethics, Culture and Population Genomics and XXXIV Annual Conference of ISHG, Delhi, 2009
44. XIIIth International Human Genome Meeting (HGM2008), Hyderabad, 2008
45. Human Variome Project Forum of the XIIIth International Human Genome meeting (HGM2008) Hyderabad , 2008.
46. 3rd World Ayurveda Congress NIA, Jaipur, 2008
47. IXth International symposium on mutations in the Genome (Mutation Detection 2007), Xiamen, China, 2007
48. Trends in Human Genetics, Puri , 2007
49. International Symposium on “Human Genomics and Public Health” and XXXI Annual Conference of ISHG, Jawaharlal Nehru University, New Delhi, 2006
50. Indo Taiwan workshop on Functional Genomics, New Delhi, 2005
51. International conference on Genes, Evolution and Complex Diseases, NCBS Bangalore 2005
52. Beijing Genomics Institute, Beijing, China, 2004
53. Sino-India Workshop on Genome Informatics at the Watson Institute of Genome Sciences of Zhejiang University/Hangzhou, 2004.
54. 10th Congress of Federation of Asian and Oceanian Biochemists and Molecular Biologist (FAOBMB) Bangalore, 2003

55. International symposium on Molecular Toxicology and Environmental Health Lucknow, 2003
56. SNPs in the Asia Pacific region (SNPAPR), Queensland Institute of Medical Research, Brisbane, 2003
57. 4th HUGO Pacific-meeting and 5th Asia-Pacific Conference on Human Genetics Pattaya, Thailand, 2002
58. Max Planck Institute of Molecular Genetics, Berlin, June 2002.

**Invited lectures in National Meetings and symposia:**

1. Invited lecture in the Training program in Traditional Medicine- Modern approaches for affordable and accessible healthcare, Amity University, Feb 2020
2. Invited speaker in Ashoka University Delhi, February 2020
3. Invited speaker in Computational Gastronomy, 21st December 2019, IIIT Delhi
4. Invited speaker in workshop on Indian population: health and scope of research in Vinoba Bhave University, Hazaribagh, April 23rd 2019.
5. Invited speaker in Indian Culinary forum knowledge summit organized by Galgotia University Genomics in quest for “THE” perfect diet” by Indian Culinary forum and Galgotia University, March 18, 2019
6. Plenary speaker in the International Seminar of the International AYUSH Conclave, organized by the Government of Kerala from February 15 to 18, 2019 at Thiruvananthapuram
7. Plenary speaker in 2nd Ayurveda Developmental Therapeutics Program (ADTP) Meeting Pune, Friday, February 8th 2019 Ayurgenomics: An operational framework for integration of trisutra concepts in P4 medicine
8. Keynote speaker in a 5-day training program on “Traditional Medicine- Modern approaches for affordable and accessible healthcare” sponsored by DST (Department of Science & Technology) on 4th February 2019 at Amity University, Noida Trisutra
9. CME on Chronic Kidney Disease, at AIIA, Delhi, organised by All India P.G. Scholar ‘s Association, Feb. 2019
10. Guest of Honor and plenary speaker at the inaugural function in National seminar at Amrita School of Ayurveda “PRAJNANAM” 2019, on February 2nd 2019 at Amrita School of Ayurveda, Amrita Vishwa Vidyapeetham, Amritapuri Campus
11. Invited member of the Biological Engineering Discipline Advisory Board, IIT Gandhinagar.
12. Invited speaker in Genomics India Conference 2019 on 24-25 January , 2019
13. Invited speaker in Symposium on computational gastronomy held at IIIT Delhi 8th December 2018

14. One Day Symposium on Computational Gastronomy organised by IIIT Delhi December 8th 2018
15. Half Day Genomics Workshop, NIT Durgapur October 4th 2018
16. Annual Madras Medical Mission Genetics Meeting (3MGM 2018) Chennai, during 7-9 September 2018.
17. Workshop on “Translational Research in Biomedical and Agricultural Science” held at Department of Biochemistry, AIIMS, New Delhi and the Indian Society of Translational Research are on 6th and 7th July 2018.
18. Symposium on Computational Gastronomy: The emerging data science of food, flavors & health, 17th March 2018 IIIT-Delhi.
19. The Emerging Role of Genomics in Clinical Diagnosis under the auspices of (Indo-Japan Information Exchange-Diagnostic Technologies) held at CSIR-IGIB, February 2018
20. National Symposium on Functional Genomics” held from 13th -14th October 2017 at Transdisciplinary University, Bengaluru
21. Sri Devraj Urs Academy of higher education and research, Kolar, Karnataka on 17th May 2017
22. 42nd annual meeting of Indian Society of Human Genetics (ISHG2017), Indian Institute of Science, Bangalore, 2-4th March 2017
23. Conference on Achievements of women in science and technology; current scenario and future trends, 13-14 January 2017, Dept of Chemistry, Panjab University, Chandigarh
24. 3rd International & 12th National seminar of Association of Ayurvedic practitioners (AAPCON 2016) Sunday” on 08th January 2017, at Aspee auditorium, Mumbai
25. Tadvidya Sambhasha” Venue: Nehru Science Centre auditorium Date: 8th Oct 2016
26. “Joint AYUSH-ICMR Mission on developing a drug from leads available under AYUSH” held on 14th March 2016 at Indian Council of Medical Research, Deptt. of Health Research, V.Ramalingaswami Bhawan, Ansari Nagar, New Delhi.
27. Indian Academy of Sciences meeting held in IISER Pune 5-8th November 2015 Ayurgenomics: Understanding human individuality through integration of Ayurveda and Genomics for stratified medicine
28. Invited by CCRAS, Ministry of AYUSH to several meetings to work on a collaborative project on Ayurgenomics entitled “Madhumeda vis-a-cis Type -2 Diabetes Mellitus: Elucidation of endophenotypes through Ayurgenomics approach for personalized predictive and preventive medicine in August 2015
29. Brainstorming session of assessment of Prakriti, based on Ayurvedic principles by Central Council for Research in Ayurvedic Sciences (CCRAS), 7th August, 2014.
30. Research conclave held as part of the Sixth World Ayurveda Congress (WAC) on 7th Nov 2014 TRISUTRA: Genomics through Ayurveda Prism (About TRISUTRA Unit)

31. Plenary session on Ayurgenomics in the National Conference on 'Ethnopharmacology and Biotechnology in Drug Development : Prospects and Challenges' organised by Institute of Biomedical Sciences and Vaidya Ram Naryan Sharma Institute of Ayurved and Alternate Medical Education and Research, Bundelkhand University, Jhansi in collaboration with Society for Ethnopharmacology, 14th November, 2014
32. Thematic workshop on neurobiology of disorders) held on December, on 18th and 19th Decmber 2014 in IIT Kanpur
33. Thematic workshop on neurobiology of disorders) held on December 2014, on 18th and 19th in IIT Kanpur
34. MDU Rohtak during National Seminar: "Next Generation Sciences: Vision 2020 & beyond" on 8th March 2014
35. Amity Institute of Biotechnology", Amity University Uttar Pradesh, Lucknow Campus in a two day national conference (Oct. 17-18, 2013) on "Women power in cutting edge biotechnology"
36. Workshop on NGS data analysis IISER campus from 20th to 23rd February 2014
37. Symposium-cum-workshop on High-throughput Data-driven Biology, Insitute of Bioinformatics and Applied Biotechnology from September 12-14th 2012
38. National Workshop on "Research Project Designing & Evaluation"IPGT&RA, GAU, Jamnagar, India 20th – 21st July 2012
39. Invited lecture at CCMB, Hyderabad, 9th May 2012
40. Advances in Chemical, Pharmaceutical & Ayurvedic Sciences, Acharya P.C. Ray Young Scientists' Conference, Presidency University, Kolkata. 17- 18 February, 2012
41. Interactive meeting of the Scientists with Dr. Francis Collins, Director, NIH, USA, India Habitat Centre, Delhi, . on December 5, 2011
42. Conference on Next-Generation Sequencing and Bioinformatics for Genomics & Healthcare" meeting on Dec 16th and 17th , 2011 at the Rajiv Gandhi Center for Biotechnology, Trivandrum, Kerala, India
43. 4th annual Biotechnology & Molecular Medicine Symposium Department of Biotechnology & Molecular Medicine, Post Graduate Institute of Medical Sciences, University of Health Sciences, Rohtak (Haryana) on November 30, 2011
44. One day symposium on "Advances in the Biology of Diseases in the Silver Jubilee year of LVPEI. July 29, 2011.
45. Chiasma: Bridging Frontiers Seminar Series at DuPont Knowledge Center, Hyderabad, July 28th , 2011
46. XXXVI annual Conference of Indian Society of Human Genetics, Manipal University, Feb 2011
47. 98th Indian Science Congress, SRM University January 2011
48. Science of Indianesse, ITC , Nov3rd – 4th, 2010



49. International conference on integrative and personalized medicine and 42nd Annual conference of Indian Pharmacological society, Kolkata, 2009
50. Society for Biological Chemists meeting, Lucknow, 2005
51. 72nd Annual Meeting of the Indian Academy of Sciences, Tiruchirappalli 2005
52. Genomics 2006: Challenges and Opportunities, National Centre for Plant Genome Research, New Delhi, 2006
53. 28th All India Cell Biology Conference and Symposium on Genome Biology, Panjab University, Chandigarh 2004.
54. One day symposium “ Deep roots, open skies: new biology in India”, National Institute of Immunology, New Delhi, 2004
55. VII National Conference and workshop of Indian Society of Prenatal Diagnosis and Therapy (ISPAT) Ahmedabad, 2004
56. International Conference on Human Genome Update at Institute of Genetics and Hospital for Genetic Diseases, Osmania University, Hyderabad, 2004
57. Indian Science Congress , “Young Women Bioscientists of Promise” Chandigarh 2004
58. 4th Annual symposium on Frontiers in Biomedical Research, Ambedkar Centre for Biomedical Research, Delhi University, Delhi, 2004
59. National Conference on expanding horizons of Human genetics, Department of Anthropology, Delhi University, 2002
60. National/ International Seminar on Human Genetics, Health and Ethical Issues, Utkal university, Bhubaneshwar, 2001

### **International Collaboration and recognitions:**

1. Participant of the 21st AMBO (Asian Molecular Biology Organisation) - International Workshop and Training Course on “Gene Expression” held from March 30th – April 11, 1998 at the National Institute of Genetics, Mishima, Japan
2. Nominated as a visiting Scientist to German Research Centre for Biotechnology (GBF). Braunschweig, Germany from June 2002 to September 2002 under the DBT’s Indo-German Young Scientists training programme
3. Invited Participant in the India - UK Young Scientists’ Networking Conference held in British Council, New Delhi from 7th to 13th November 2002
4. Invited Participant in the Executive Course on Genomics and Public Health Policy for the Western Pacific and South East Asian regions, held from October 20- 23, 2004, at the University of Hong Kong, China organized by the University of Toronto Joint Centre for Bioethics and the University of Hong Kong.
5. A member of a delegate in Sino-India Workshop on Genome Informatics held at the Watson Institute of Genome Sciences of Zhejiang University/Hangzhou from October 27th to 30th 2004.
6. Represented India in the 4th Biennial Human Variome Project Meeting held 11th –

15th June 2012, at UNESCO headquarters, Paris, France and the International Confederation of Countries Advisory Council Meeting

7. Led international collaborations which has resulted in joint publications with credit as corresponding author (Ann. Hum Genet, 2005, Mol. Genet and Genomics 2007).
8. Project leader from India in a PANASIA SNP consortium which has looked at patterns of variations across 72 populations from 10 Asian countries. The entire work has been carried out using the Affymetrix 50 K array. Participating countries: India, China, Japan, Korea, Taiwan, Singapore, Thailand, Malaysia, Philippines and Indonesia.
9. Under the Indo-Russian ILTP programme led an International Collaboration with Russia for exploring the correlates of Ayurveda across two ethnic groups and in the course of this project lead an Indian team of four women researchers to Russia for phenotyping 2000 individuals of Russian ethnicity.
10. Co-principal Investigator in the Indo UK project on G2P4Health: Developing a Human Genotype-To-Phenotype (Gene-Disease) Database that will Facilitate Biomedical Research and Clinical Medicine Worldwide as Co – Pi with Dr. Debasis Dash and Dr. Amit Sinha  
PIs Prof. Samir K Brahmachari (India) Institute of Genomics and Integrative Biology (IGIB) Delhi and Prof. Anthony J Brookes Department of Genetics University of Leicester
11. Collaboration in the area of Ayurgenomics with Prof Greg Gibson, Georgia Tech Research Corporation (GTRC), Atlanta
12. Invited by Ministry of AYUSH to attend a two day “India - US Workshop on Traditional Medicine on 3-4 March, 2016 at A.P.Sindhe Symposium Hall, National Agriculture Science Complex, Dev Prakash Sastri Marg, New Delhi.

### **Other responsibilities:**

1. Member of the committee involved in the creation of the CSIR Vision 2020 document
2. Member of the committee involved in the formulation of the ethical consent form for complete human genome sequencing in Indian population
3. Participated in discussion during the formulation of AcSIR policies
4. Preparation of SFC document for the Setting up of CSIR-TRIUTRA for Ayurgenomics research
5. Member of the research council of CSIR- IMTECH
6. Adjunct faculty in Transdisciplinary University, Bengaluru
7. Honorary fellow of the Inter-disciplinary centre for innovation in Biotechnology and neurosciences under the World Class University project of in University of Jaywardenepura, Sri Lanka

8. Resource person for an add-on course entitled Ayur Biology offered by Sri Venkateswara College, Dept of Biochemistry, Delhi University
9. Nominated member of the basic sciences expert research group of ICMR-NIREH, Bhopal
10. Member of the Animal Sciences and Biotechnology Research Committee of CSIR
11. Co-chair of a DBT Task Force Human Developmental and Disease Biology

### **Ongoing responsibilities:**

12. Governing body member of NIT Durgapur attended and contributed to the policy decision
13. Member of Scientific Advisory Committee (SAC) of the ICMR-National Institute for Research in Environmental Health (NIREH), Bhopal and Institution of Occupational Health, Ahmedabad
14. Member of the Ayurvedic Biology program Task force of SERB
15. Member of Technical Expert Committee (TEC) of DBT on Human Genetics and Genome Analysis Programme
16. Member of Discipline Advisory Board of Biological Engineering (BE) of IIT Gandhinagar
17. Invited to provide expertise, infrastructure and support for execution of Rashtriya Prakriti parikshana karyakrama under Ayushman Bharat scheme, my M/0 AYUSH.
18. Member of Health Informatics Sectional Committee, MHD 17 of Bureau of Indian Standards which is the National mirror committee of the ISO/TC 215 that deals with Health Informatics
19. Co-opted member of AYUSH Informatics sub-committee of the Health Informatics Sectional Committee-MHD 17 for assisting in developing ISO documents for standardization in the field of Genomics Informatics as well as AYUSH informatics.

### **Human Resource Development:**

#### **Mentorship of PhD Students**

1. Recognized guide in Department of Biotechnology, Pune University
2. Recognized as a guide and Professor in Academy of Scientific and Innovative Research (AcSIR)

#### **PhD Completed**

1. Deepak Grover, Functional significance of simple and complex repeats in human genome organization, 2004, School of Biotechnology, Guru Gobind Singh Indraprastha University, New Delhi
2. Samira Bahl Linkage Disequilibrium studies in Indian population vis-a-vis Single Nucleotide Polymorphisms 2005 Department of Anthropology, Delhi University (co-guide)
3. Ravi Shanker, Significance of Alu repeats in human genome, 2006, Department of Biotechnology, Pune University
4. Shipra Sharma, Mitochondrial polymorphism in neurological disorders 2006, Ambedkar Centre for Biomedical Research, Delhi University (co-guide)
5. Komal Viridi Linkage Disequilibrium studies in Indian population: perspective from repeat polymorphisms, 2006 Department of Anthropology, Delhi University (co-guide)
6. Rajesh Pandey Elucidation of functional significance of regulatory elements in Alu repeats in human transcriptome, 2011 Department of Biotechnology, Pune University
7. Amit Mandal Involvement of Alu repeats in transcriptome diversity : Exploring novel regulatory networks, 2012, Department of Biotechnology, Pune University
8. Pankaj Kumar Identification and characterization of Copy Number Variation in Indian population and its association with disease, 2012 Department of Biotechnology, Pune University
9. Amit Chaurasia, Identification of novel regulatory regions derived from non-coding and repetitive sequences in human lineage through computational and functional genomics 2012 Department of Biotechnology, Pune University
10. Inder Singh Mitochondrial variation and common founder for Friedreich's ataxia in Indian population, 2012, Department of Neurology, All India Institute of Medical Sciences, New Delhi (co-guide)
11. Pramod Gautam, Genotype to Phenotype correlation: insights from copy number variations, 2012 Department of Biotechnology, Pune University
12. Tav Pritesh Sethi, MBBS, A systems approach to physiological and molecular characterization of respiratory health spectrum in human subjects 2013 Department of Biotechnology, Pune University (co-guide)
13. Faruq Mohammad ,MBBS, Genotype- Phenotype correlation in hereditary ataxia- Molecular and Phenotypic characterization of SCA12 2013, Department of Neurology, All India Institute of Medical Sciences, New Delhi (co-guide)
14. Ankita Narang Understanding population and genomics structure for disease association studies 2014 Department of Biotechnology, Pune University (co-guide)

15. Shilpi Aggarwal, BAMS, Identification of molecular markers associated with inter-individual differences in health and disease susceptibility using phenotyping concepts of Ayurveda 2015, Department of Biotechnology, Pune University
16. Deepak Kumar, To study molecular pathophysiology of Neurodegenerative Diseases-Spinocerebellar Ataxia Type 12, 2016, Department of Neurology, All India Institute of Medical Sciences, New Delhi (co-guide)
17. Aniket Bhattacharya, Investigating the role of Alu RNA as an integrator of signals in stress response, 2017 (AcSIR)
18. Pradeep Tiwari Development of methods for analysis of multi-dimensional, multi-scalar biological data 2018 (AcSIR)
19. Ranjeet Therangaonkar, MBBS, MD A pilot study of the genetic variation among indian children with vesicoureteral reflux using exome sequencing 2018, Department of Pediatrics, All India Institute of Medical Sciences, New Delhi (co-guide)
20. Atish Gheware (Mpharma) 2020 Exploring the molecular mechanism of Doshas perturbation in asthma: An Ayurgenomics approach (co-guide AcSIR)

### **Ongoing**

1. Madiha Haider (AcSIR)
2. Dhvani Dholakia (AcSIR)
3. Gaura Chaturvedi (AcSIR)
4. Sumita Chakravorthy (AcSIR)
5. Sunanda Singhmar (AcSIR)
6. Khushboo Singhal (AcSIR)
7. Daya Nidhi Singh (AcSIR)

Nearly 100 students including, project assistants, summer trainees and clinicians would have been trained in my laboratory in the various areas of genomics, genome informatics, high throughput genotyping and sequencing technologies and Ayurgenomics, Masters students and young graduates as well as school children as a part of their projects and in the last 20 years.

### **Course Curriculum:**

1. Course coordinator of Genomics Course “Information Flow in Biological Systems” from 2005 onwards
2. Course development and Course instructor of Ayurgenomics offered by AcSIR

3. Resource person for an add-on course entitled Ayur Biology offered by Sri Venkateswara College, Dept of Biochemistry, Delhi University
4. Member of Board of studies for Transdisciplinary University, Bengaluru

### **Industry Interactions**

Jointly developed with SilicoGene, Kolkata an ***IPR protected novel Product – HT-SSS (High Throughput SNPs Sequencing and Screening)***. This is the first globally competitive software package capable of handling SNP data generation protocol and analysis along with comprehensive web based LIMS (Laboratory Information Management System) platform. The product has already been commercialized.

CR-31/2005.

Authors: **Mitali Mukerji** Debasis Dash, Dipayan Dasgupta, Siddharth Bisht, S. K. Brahmachari.

### **Academic Collaborations in Disease Genomics, Population Genomics and Ayurgenomics**

#### **Population Genomics**

1. Indian Genome Variation Consortium Project
2. HUGO PanAsian SNP Consortium Project
3. Dr. Sandhya Visweswariah, MRDG, Indian Institute of Science Bangalore
4. Dr. Vani Brahmachari, ACBR Delhi University and Dr. Mridula Bose, V.P Chest Institute, Delhi
5. Dr Kasturi Datta, JNU, Department of Life Sciences, Delhi
6. Dr. Mridula Bose, VP Chest Hospital.
7. Dr. Saman Habib, Central Drug Research Institute, Lucknow
8. Vanessa Hayes, J. Craig Venter Institute, San Diego, California, United States of America
9. Dr. Analabha Basu, National Institute of Biomedical Genomics, Kalyani

#### **Disease Genomics**

1. Dr. Achal Srivastava, Departments of Neurology, All India Institute of Medical Sciences, New Delhi
2. Dr. Saneev Jain, Department of Neuropsychiatry and movement Disorders, National Institute of Mental Health and Neurosciences, Bangalore
3. Dr Partha P. Majumder, ISI, Kolkata
4. Dr. Rohit Bhatia, Department of Neurology, All India Institute of Medical Sciences, New Delhi
5. Dr. Arvind Bagga and Dr Pankaj Hari, Department of Pediatric Nephrology, All India Institute of Medical Sciences, New Delhi

6. Dr. Govind Makharia, Dr. Vineet Ahuja, Department of Gastroenterology, All India Institute of Medical Sciences, New Delhi
7. Dr. Subrata Sinha, Dr Nandini Chatterjee Singh, Dr Pankaj Seth, National Brain Research Centre, New Delhi

### **Ayurgenomics**

8. TRSIUTRA Ayurgenomics Consortium
9. Dr. Sanjay Juvekar, KEMHRC-VADU, Pune
10. Dr Sundeep Salvi, Chest Research Foundation, Pune
11. Dr. Tuhin Biswas, J.B. Roy State Ayurvedic Medical College and Hospital, Kolkata
12. Dr. Anup Thakar, IPGT & RA, Gujarat, Ayurved University, Jamnagar
13. Dr Sudhir Kumar, Ch. Brahm Prakash Ayurved Charak Sansthan, New Delhi
14. Dr. B.S. Prasad, KLEU's BMK Ayurveda Mahavidyalaya, Belgaum, Karnataka
15. All India Institute of Ayurveda, New Delhi
16. Dr. Saurabh Ghossh Indian Statistical Institute, Kolkata
17. Dr. Nar Singh Chauhan, Maharshi Dayanand University, Rohtak, Haryana
18. Dr Tulika Prakash Srivastava, Indian Institute of Technology, Mandi
19. Dr. Vinod Paul, Dr Vandana Jain, Department of Pediatrics, All India Institute of Medical Sciences, New Delhi
20. Dr. K.K.Deepak, Departement of Physiology, All India Institute of Medical Sciences, New Delhi
21. Dr. Vishal Bansal, Department of Physiology, Dr Vallabhai Patel Chest Institute (VPCI) , New Delhi
22. Dr. Oddity Mukherjee, National Centre for Biological Sciences, Bangalore
23. Dr. Greg Gibson, Georgia, Centre for Integrative Genomics, School of Biological Sciences, Georgia Institute of Technology
24. Dr. Sarah Hillman, University College London, UK
25. Drs. Renu Wadhwa and Sunil Kaul, National Institute of Advanced Industrial Science and Technology Biomedical Research Institute, Ibaraki, Japan

## **Popularization of Science**

### **Organization of meetings/exhibitions**

- TRISUTRA was one of the official sponsor and also had put an exhibition stall during The 6th World Ayurveda Congress (WAC-2014) & AROGYA Expo held at Pragati Maidan, New Delhi from 6th to 9th November, 2014, organized by World Ayurveda Foundation & supported by Department of AYUSH, Government of India. It is one of the largest fair in complementary and alternative healthcare in the world. The Focal Theme for WAC-2014 was "Health Challenges & Ayurveda". This international event was attended by more than 3 lakh visitors with 4500 registered delegates including 500 international delegates. It involved all trade & business associations of national & international importance in Ayurveda sector, and the major government & private organizations. This event provided an opportunity for our Unit to popularize its activities and "Ayurgenomics" subject as a whole, in Ayurveda fraternity and in general public. In this Expo, we have conducted Saliva DNA isolation of general public and gave a perspective and understanding of the new area of Ayurgenomics with respect to personalized medicine. We have presented 16 posters encompassing all our scientific and outreach activities including the posters depicting the field sites. The investigators and team members from collaborative institutes also participated in this event. In addition we set up a quiz on Ayurgenomics for participating members and based on the entries there were nearly 2000 people who visited the stall.
- Active participation in the Genetics Exhibition organised by DBT at Teen Murti Bhavan, Delhi, held from 14<sup>th</sup> November –30<sup>th</sup> November, 1998. Under the guidance of Prof. S. K. Brahmachari was involved in organizing and making posters in the field of Basic Genetics, Functional Genomics and Neurological Disorders related to trinucleotide repeat mediated expansion
- Lead a team from IGIB has been involved in popularisation of genomics through practical demonstration in CSIR Technofest in Pragati Maidan in 2010
- Involved in coordination of a CSIR Tableau on affordable health in Republic day parade in 2011.
- Organised a popular lecture on "Human Genome Project" by NIH Director in Teen Murti Bhawan August 2011

### **Popular lectures on Genomics and traditional medicine**

1. Swadeshi Aarogya Mela, New Delhi, 2002
2. NISSCOM, CSIR, New Delhi, 2002
3. Department of Genetics South Campus, 2004
4. Department of Biochemistry, Vekateswara College, New Delhi 2004
5. Ambedkar Centre for Biomedical research, Delhi, 2004
6. Shivaji College, Delhi 2004
7. Daulatram College, Delhi 2004
8. Zakir Hussain College, Delhi 2004



9. Bhaskaracharya College of Applied Sciences, Delhi 2004
10. Tibia College, Delhi 2004
11. Unilever, 2005
12. Ranbaxy Science Foundation's 17th Round Table Conference on "Herbal Drugs - Perspectives in the New Millennium" Delhi, 2006
13. Venkateshwara college, Delhi 2007
14. Industry and Institution interface for New drugs to manage inflammatory diseases BHU 2005
15. Delhi Technology University 2010
16. DBT Workshop Miranda House, Delhi July 2011
17. Indian Society of Gastroenterology Young Clinician's Program Aug 7-8, 2010 Bangalore
18. Illumina 2009 Asia Pacific and Japan Users Meeting, Sabah, Malaysia, 2009
19. National Science Day Lecture at CSIR-SERC Chennai on 28th February 2012
20. One day CSIR programme for Youth Leadership in Science (CPYLS) in NISTAD June 2011
21. International women's Day, CSIR- NEIST, Jorhat, 8th March, 2011
22. DST-Inspire progamme for School Children, February 2013
23. TEDex SGGSCC lecture on Ayurgenomics Jan 11<sup>th</sup> 2014
24. Rotary Club of Calcutta, Jadavpur on 24th December 2018
25. Quality Improvement Programme For Teachers of AICTE approved pharmacy colleges across the country, DIPSAR, DPSRU, Delhi- March 2019
26. South Asian University, Delhi for students as a part of their coursework topic on Traditional systems of medicine in south Asia & new research developments – Delhi, March 2019
27. Vinoba Bhave University, Jharkhand, April 23rd 2019
28. NIT Durgapur, 5-7th August 2019
29. Delhi University Botany Department Feb 13th 2020
30. Morarji Desai National Institute of Yoga, Feb 14th 2020
31. Ramlal Anand College, Feb 5th 2020
32. JIGYASA Let's Talk Science, April 27, 2020
33. CSIR IGIB Science Outreach\_Pragya, May 2020
34. Online lecture series organized by Yoga group of PGIMER, Chandigarh, April 2020

### **Popular Articles**

- i. **Mitali Mukerji** and Bhavana Prasher (February 2011) Ayurgenomics: A new approach in personalized and preventive medicine Science and Culture Vol. 77, Nos. 1-2 pg 10 – 17
- ii. Saman Habib and **Mitali Mukerji** (July 2008) Mapping genes and tailoring therapies Science Reporter Vol. 45, Nos. 7 pg 10 – 17

### **YouTube**

- TEDx Talk on Ayurgenomics Apr 15, 2014
- Emerging role of genomics in clinical diagnosis; Genomics of Rare Diseases... Feb 28, 2018
- Symposium on Computational Gastronomy: The emerging data science of food, flavors, and health, Dec 8th 2018
- Unravelling the coronavirus: Why? How? When? Of genome sequencing - online webinar CSIR India July 25th 2020

### **Vimeo**

- Genetic Basis of variation in behaviour evolution and disease Kavli Frontiers of Science, Apr 6, 2012
- JIGYASA Series Lecture 4: Session by Dr. Mitali Mukerji under "Let's Talk Science: What, Why, and How ...Apr 27, 2020 - Uploaded by CSIR JIGYASA

## **Our team's research featured in print and digital media**

- Why Ayurgenomics researchers continue despite skepticism in research a feature in Business Standard January 2019
- Software to classify people for Ayurveda treatment The Hindu October 9<sup>th</sup> 2017
- Computer Aid to Ayurveda Diagnosis, The Telegraph October 8<sup>th</sup> 2017
- Ayurveda: Opening a new window to look at ancient text Deccan Herald 2<sup>nd</sup> August 2016
- From the lab: Ayurveda meets modern medicine, with a little help from genomics, Indian Express, May 15<sup>th</sup> 2016
- Genomics link to Ayurveda tenet, The telegraph April 4<sup>th</sup> 2016
- TRISUTRA Ayurgenomics covered in Dr. Harsh vardhan's press release after his IGIB visit PIB 30-05-2015
- Ayurgenomics Covered in Pharmabiz.com 03-06-2015
- The work of TRISUTRA Ayurgenomics Unit was extensively covered in the Magazine Biospectrum India which is one of the most widely circulated magazine in biotechnology Ayurgenomics raises new hopes for patients New Delhi 1 February 2015
- Ayurgenomics activity of CSIR-TRISUTRA has been covered in a popular science article entitled Searching for science in India's traditional medicine Science 24 October 2014: Vol. 346 no. 6208 p. 410
- Ayurgenomics: A fringe medicine gains currency, Buisness standard, April 17<sup>th</sup> 2014
- The World's 25 smartest Indians 17 June 2013 - Outlook India  
<https://www.outlookindia.com/magazine/issue/11094>
- Profile of Top 25 scientists in India | IndiaToday  
<https://www.indiatoday.in › India › Gallery Sep 11, 2011>
- Featured in a book "India: A Portrait" by Patrick French Stamp on Tagore's India Genetic map blurs lines Calcutta Telegraph-24-Apr-2008
- Indian Genome Variation Consortium Project: Genetic Map of India India Post August 5, 2008
- Are your genes fit? A genetic map mines rich data on India's disease geography. Better cures may follow, 9th June 2008, Outlook India

### **Youtube features**

- Featured in Women in STEM - Story of Mitali Mukherji by Google India
- SCIENTIFIC EVIDENCE OF AYURVEDA, an in-depth film on the fundamentals of Ayurveda and its relevance in Modern Genomics. A 10 mins. film screened before PM Modi on 2nd National Ayurveda Day 2017 at AIIA, New Delhi, organised by the Ministry of AYUSH

- Nature –The ultimate Pharmacy The film opens up the deep insights of Indian system of medicines with scientific analysis. The film was screened at AROGYA-2017, the 1st International Exhibition and Conference on AYUSH and wellness organised by FICCI.
- Tejasvini: Special interaction with Mitali Mukerji, Senior Principal Scientist at the CSIR Institute of Genomics. Oct 5, 2019 – Vigyan Prasar