

Dr. Andrea Mary F M.Sc, M.Phil, DNIIT, Ph.D

Department of Human Genetics

Area of research expertise: Biochemistry, Molecular Biology, Cancer Biology, Cytogenetics

Projects Conducted

Title of research work

- CYP1A1 gene ile462val polymorphism and its possible association with ovarian cancer
- Association of estrogen receptor – α PvuII and Xba I polymorphisms with ovarian cancer
- IL1 β and VNTR gene polymorphism analysis in ovarian cancer patients
- Screening of Frame Shift Mutation in Exon 2 of *BRCA1* Gene in Breast Cancer Patient by DNA Sequencing.
- Interleukin 4 VNTR gene repeat polymorphism distribution in general population.
- Genetic polymorphism in estrogen metabolizing gene pathway and ovarian cancer risk
- Obstetrical complications associated with abnormal maternal serum markers.
- Gene analysis of L1CAM a neural cell adhesion molecule implicated in X -linked Mental retardation
- Chondrogenic Differentiation and the effect of BMP-2 in Osteogenic differentiation of Human Amniotic membrane derived mesenchymal stem cells
- Screening of 185DEL AG mutation in Indian Breast cancer patients.
- Adaptive Response of Human peripheral Lymphocytes to Gamma radiation and Bleomycin induced by low dose radiation”
- Mutational Analysis if *BRCA1* gene Exon 1 and Exon 2 in Indian Breast cancer Patients.
- Genotoxicity and Cytotoxicity of Cisplatin.- Comet Assay
- Induction of Apoptosis in Human peripheral blood lymphocytes assessed by DNA fragmentation Assay
- The Efficacy of Vilva Juice in acetic Acid induced irritable bowel syndrome

TEACHING AND ACADEMIC RESPONSIBILITIES

Post Graduates	PG:Subjects Handled – Biochemical Genetics,
M.Sc Human Genetics	Developmental Biology and Prenatal
M.Sc Renal and Neurosciences	Diagnosis, Cancer Genetics, Biophysics,

M.sc Medical Bioinformatics M.Sc Nursing	M.Sc Renal and Neurosciences
Under Graduates B.Sc Biomedical Sciences B.Sc Nursing B.Sc Allied Health Sciences	B.Sc Nursing, B.Sc Allied Health Sciences, Advanced Molecular Biology and Biotechnology, Cancer Biology
Clinical postings	Department of Anatomy, Physiology, Pharmacology, Reproductive Medicine and General Surgery, Microbiology, Clinical Embryology, Neonatology, Saveetha Dental College, Nursing, Speech Language and Hearing, Audiology, Biomedical Sciences, Human Genetics, Child Trust Hospital.

Awards and Recognitions:

- Received 10 years service award on 19-9-15 , SRU
- ✚ Awarded the **Emerging Researcher award** in the International Conferences organized by Biomedical Research Unit in Saveetha Institute of Medical and Technical Sciences for the Paper presentation on “Integration of Estrogen Metabolizing, Signaling and DNA repair Pathway and its implication in Breast cancer risk.
- ✚ Presented an e-poster “**Breast cancer susceptibility genes in estrogen metabolizing pathway in a southern Indian population**” in the International conference on Recent advances in Biomedicine, ICRAAB 2018 held on 23.8.18 at Saveetha Dental college Chennai and **won the best e-poster award.**

- ✚ Oral presentation titled “**Breast cancer susceptibility genes in base excision DNA repair pathway**” in a southern Indian population” in the National conference, Hindustan college of Arts and Science, August 29, 2018 and **won the best paper award.**
- ✚ Oral presentation titled “**Use of chemical pesticides Health Impact on cancer progression**” in the National conference on “Biotechnological advances towards sustainable Agriculture and environment” held on 24th August 2017 organized by the Department of Biotechnology, Hindusthan College of Arts and Science, Chennai and **won the best paper award.**
- Presented a paper titled Genetic Polymorphisms in estrogen metabolizing gene pathway and ovarian cancer risk and **won the best paper award** for International seminar on “Biotechnology- Challenging the challenges of the changing world” organized by Justice Basheer Ahmed Sayeed College for Women 4th and 5th February 2015.
- Presented a paper titled “ Genotoxicity and cytotoxicity of cisplatin – Potential anticancer drug” **and won the best paper award** in the National seminar on “Newer innovations in chemistry “Chemino 2014”
- Presented a paper titled “Efficacy of vilva in acetic acid induced irritable bowel syndrome” and **won the second place** in state level seminar organized by Justice basheerahmed college for women 8th January 2014.

Project Grant Obtained :

- **Principle Investigator:**DBT funded project Pilot Project Grant for Young investigators in cancer Biology on the project title “ Ovarian cancer susceptibility genes in a south Indian population” **Sanction amount : 24.3 lakhs Sanction Date : July 29, 2015**
- **Principle Investigator:**Was awarded Young faculty research grant on the title “Genetic polymorphism in estrogen metabolizing gene pathway and breast cancer risk” Oct 31st 2013.

Conference Presentations /Workshops/organized/Attended

Conference Presentations :

- ✚ Awarded the **Emerging Researcher award** in the International Conferences organized by Biomedical Research Unit in Saveetha Institute of Medical and Technical Sciences for the Paper presentation on “Integration of Estrogen Metabolizing, Signaling and DNA repair Pathway and its implication in Breast cancer risk.
- ✚ Poster Presentations during the conference jointly organized by MMM- Center for Genetic Studies and Research & MMM –Institute of Reproductive Medicine and Women’s Health in association with CSIR- Institute of Genomics and Integrative Biology
- ✚ Presented an e-poster “**Breast cancer susceptibility genes in estrogen metabolizing pathway in a southern Indian population**” in the International conference on Recent advances in Biomedicine, ICRAAB 2018 held on 23.8.18 at Saveetha Dental college Chennai and **won the best poster award.**
- ✚ Oral presentation titled “**Breast cancer susceptibility genes in base excision DNA repair pathway**” in a southern Indian population” in the National conference, Hindustan college of Arts and Science, August 29, 2018 and **won the best paper award.**
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- ✚ National Level Symposium cum Workshop on “Advances in Life Sciences and Bioprospecting of Marine Resources” held in Hindustan College of Arts & Science, Padur, OMR, Chennai from 2nd – 4th February, 2016.
- ✚ Presented a poster titled “Cancer fighting phytochemicals :Molecular targets and potential drug like inhibitors from medicinal plants” in National Conference on 'Phytochemicals as

Biotherapeutics – Unraveling the Mystery of Natural Products (Herbescon 2016) 17th -18th February 2016.

- ✚ Presented a poster titled “Aloe Vera Therapeutic Use” in National Conference on Phytochemicals as Biotherapeutics – Unraveling the Mystery of Natural Products (Herbescon 2016) 17th -18th February 2016.
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- ✚ Presented a talk on the topic “Birth defects and Inborn Errors of metabolism “organized by Medical college, Mysore. Department of Biochemistry 7-2-14 & 8-2-14.
- ✚ Mental retardation scientific updates and social context a multi disciplinary approach- South Indian study -2nd Indian youth science congress 2010.

Conference Participation:

- National conference on “Setting bench marks in Teaching and learning through ICT” 5th – 6th February 2016.
- International conference on Updates in Ethics & Research Methodology 2013 4th & 5th March

2013, SRU.

Workshops Attended:

- Workshop on **Fluorescence in situ hybridization** on April 22- 23, 2016 at Department of Human Genetics, Sri Ramachandra University
- **Workshop on Grant and Publication Writing** Date: 14th September, 2015. Venue: Dental College Basement Auditorium.
- Completed a **short course on “Introduction to Molecular Phylogenetics and virus evolution”** conducted at **YRG centre for AIDS research and education**, from 21st to 24th July 2015.
- **Workshop for teachers on Optimizing your voice**, held on world voice day, Harvard auditorium Organized by Dept of Speech, Language and Hearing sciences on 16th April, 2013
- **Orientation programme in research methodology and Biostatistics** as course work for Ph.D candidates Organized by Dept of community medicine, SRU on 3rd and 4th May, 2013.
- Workshop on **Advanced Good clinical Practice CRF Auditorium**, Organised by SRU & Pfizer Ltd 20 & 21st April 2013
- **Soft Skills Recreation Club** organized by Department of Pharmacy, SRU, on 15-2-14
- CME on **“Teaching and research during post graduation”** 19/7/14, Department of Physiology, SRU
- CME Programme on **“Recent advances in nutrition and air pollution epidemiology: Application in Oro-Facial Clefts”** 12 Credit hours on 10th Dec 2013.
- Interactive seminar on **Teaching dynamics** organized by Dental Education Unit, SRU, 22nd Feb, 2013 Dental Auditorium, SRU
- Updates in **Ethics & Research Methodology** 2013 SRU, Porur 4th & 5th March
- **Orientation programme in research methodology and Biostatistics** as course work for Ph.D

candidates Organized by Dept of community medicine, SRU 3rd and 4th May 2013

- **Stem cells, Regenerative medicine in orthopedic applications**” Chennai Sri Ramachandra University, 23rd January 2010.
- **2nd Indian youth science congress**, Chennai SRM University. June 26-28, 2010.
- Indo Australian Symposium on PharmacoGenomics, 2006 , held at KMC life science center, Manipal
- **Faculty development programme** held 19th -21st 2006,SRU
- **Validation of Biomarkers 2006-2009** organized by Department of Environmental Health Engineering SRU.

Conferences, CME, Workshop Organized and Member of the Organizing committee

Conference/CME/Workshop organized:

- International conference on radiation biology nanotechnology, imaging and stem cell research in radiation oncology, Chennai Sri Ramachandra University. November 15-17, 2010
- ICRB-NISRRO “Emerging techniques, tools and probes in radiobiology. Kalpakkam, IGCAR November 18 2010.
- ICOGEN International conference on Genetic Disorders, 2007, held in the Department of Human Genetics SRU.
- CME on Assays in Toxicology 2009 jointly organized by SRU, IGCAR Kalpakkam& Loyola College, Chennai

Diagnostic Service

- **Continuous service in Diagnostics** from 2007 to till date
- **Cytogenetic Diagnostic - Jan 2014 –till date**
- **Biochemical genetic testing:** Independent handling of **675 cases** dealt in dept of Human genetics from 2007 January – 2013 October.

Committee Member/ University work:

- ✚ **NABL Internal Auditor**-Blood Bank, Blood collection, Microbiology
- ✚ Faculty Cultural representative for 2018 culturals, SRIHER
- ✚ PG DAWNS Cultural representative, SRIHER
- ✚ Served as a Judge for Bioethics Day, SRIHER

Certificate Course:

- Laboratory Quality management system and Internal Audit Laboratory Quality management system and Internal Audit Certificate course programme as per ISO 15189-2012 16th -19th August 2017, Sri Ramachandra Medical College.
- CITI Course 2013 **Orientation programme in research methodology and Biostatistics as course work for Ph.D candidates** Organized by Dept of community medicine, SRU3rd and 4th May 2013.

Recent training and workshop attended:

- Blended Learning 30/4/19
- Mentoring the Mentors 17/8/18
- Indo US workshop on Drug re purposing for improving radiotherapy of cancer 18/1/2/18
- Smart Board Training 18-12-2018
- Publication writing workshop
- Sound Chemical Management workshop 13/10/17
- CME on Oncology going Molecular 28/7/17
- CME on Molecular Oncology “Diagnostic and therapeutic significance of osteoponin and Associated Genes in Breast and other cancer 23/8/17

Books Authored: (Springer)

- ✚ **Microbial Biotechnology: Application in food and Pharmacology**

Publications

- ✓ **Francis AM**, Ramya R, Ganesan N, Kumarasamy P, Paul SF, Munirajan AK, Divya M. Breast cancer susceptibility genes in estrogen metabolizing pathway in a southern Indian population. *Meta Gene*. 2019;119:225-34. (Scopus Indexed).
- ✓ **Francis AM**, Ramya R, Ganesan N, Paul SF, Munirajan AK, Kumarasamy P, Davis G. Breast cancer susceptibility gene in base excision repair pathway in a southern Indian Population. *Journal of Clinical & Diagnostic Research*. 2018;1:12(9). (Scopus Indexed).
- ✓ **Francis AM**, Ramya R, Ganesan N, Kumarasamy P, Paul SF, Munirajan AK, Roobini J. Analysis of *BRCA1* gene exon 2 mutation in breast cancer patients in a south Indian population. *Research Journal of Pharmacy and Technology*. 2018;11(10):4592-6. (Scopus Indexed)
- ✓ **Francis AM**, Ramya R, Ganesan N, Gowtham Kumar, Paul SF, Breast cancer overview: Epidemiology, tumor heterogeneity, diagnosis, treatment and risk factors, Accepted for publication in *Drug Invention Today Journal* (Scopus Indexed)
- ✓ Andrea Mary F, Judes Nisha, Anitha Ramesh, Solomon F D Paul Genetic Polymorphisms in Estrogen Metabolizing Gene Pathway and Ovarian Cancer Risk. *International journal of scientific engineering and technology research* 2015.
- ✓ Andrea Mary.F, Maheshwari.T, Solomon F.D Paul L1CAM a neural cell adhesion molecule implicated in X-linked mental retardation. *Advanced Biotech* 2012
- ✓ Andrea Mary.F, AnithaRajan, R.Selvi, Solomon F.D Paul. A pilot study on screening for 185Del AG mutation in breast cancer patients in a tertiary casecentre from south India. *Sri Ramachandra journal of medicine*.2010.
- ✓ R.Selvi, GovindRaghavSaranya, JyotsnaMurthy, **Andrea Mary.F**, Solomon F.D Paul. Chromosomal abnormality in individuals with cleft lip or cleft palate *Sri Ramachandra journal of medicine*.2010.

- ✓ J.Vijayalakshmi, TeenaKoshy, HarpreetKaur, **F. Andrea Mary**, R. Selvi, V. DeepaParvathi,R. Bhavani, R. VikramJayanth, P. Venkatchalam and Solomon F. D. Paul Cytogenetic Analysis of Patients with Primary Amenorrhea Int J Hum Genet, 10(1-3): 71-76 (2010)
- ✓ Chinnadurai M., **Andrea M.**, Venkatachalam P. and Solomon F.D. Paul (2008), Adaptive response of human lymphocytes exposed to ionizing radiation and bleomycin. **Ind. J. Radiat. Res.**, **5**, 3-4.