

Global Medical Education and Research Foundation

Annual Progress Report (2022-2023)

Global Medical Education & Research Foundation (GMERF) is delighted to update the achievements and progress extended in the year 2022-23. Dr. Lakshmi Kiran Chelluri's team is actively working on the DST SERB-POWER sanctioned project in carrying out the objectives. The training and academic short term research projects for undergraduate and post-graduate students are successfully going on with new aims and objectives. As part of the PG diploma in Clinical Nutrition (PGDCN) course, students from St. Francis College doing their 6 months internship program in association with Gleneagles Global Hospital (GGH). Further, we have also students of Pharm D course from Avanthi and Sree Datta Pharmacy colleges to carry their 3 months, 9 months internship program. The detailed information of the successful activities that took place during the year 2022-23 are as follows.

Projects:

A. On-going project

DST-SERB POWER Grant (File No: SPF/2021/000126) 2021 Dec - 2024 Dec

Title: Articular cartilage tissue construct by microfluidics in an organ-on-chip.

Duration: (Three years)

PI: Dr. Lakshmi Kiran Chelluri

Research Fellow: Miss Upasna Upadhyay

• Intramural projects:

PI: Dr. Chandan Kumar

16s rRNA sequencing of V3-V4 region and Metagenomics analysis from Liver Transplant Donors and Recipients using FCP samples

• Mylan Study

PI: Dr. Chandan Kumar

B. Projects Under Review

➤ DBT

Title: Pharmacogenomics study on drug dosage regimen of immunosuppressants in Solid organ Transplantations.

PI: Dr. Chandan kumar

Title: Identification of Novel Genomic Variants in Autism patients in Indian population

PI: Dr. K. Prasanna Latha

➤ DST-SERB CRG program

Title: Identifying the role of Molecular and regulatory cell death biomarkers in Sepsis pathophysiology

PI: Dr. Lakshmi Kiran Chelluri

➤ ICMR-ASPIRE

Title: Donor-derived cell-free DNA assay for the early detection of Solid organ allograft rejections

PI: Dr. K. Prasanna Latha

2. National /International Conferences and workshops:

December 2022:

Oral presentation: **Upasna Upadhyay, Lakshmi Kiran Chelluri**, Saketh Kolla. Human articular cartilage tissue construct organ-on-chip using microfluidics system organised by STERMI –BIO-Remedi 2022 on ‘Translation for healthcare at International Conference on Biomaterials, Regenerative medicine and Devices’ 14th-18th Dec, 2022, At IIT, Guwahati, Assam, India.

3. Students for Ph.D programme:

S.No	Name of candidate	Designation	Status
1.	Upasna Upadhyay	Research Scientist	Registered at KL University, Vijayawada
2.	Chandrashekar Mallarpu	Research Fellow	Perusing
3.	Sirisha D	Research Associate	Thesis submitted
4.	Sai Priya	Research Associate	Awarded

4. List of Publications:

1. Upasna Upadhyay, Saketh Kolla, Lakshmi Kiran Chelluri. Extracellular matrix composition analysis of human articular cartilage for the development of organ-on-a-chip, Biochemical and Biophysical Research Communications, 667, 2023:81-88.
2. Soujanya Ganta, Prasanna Latha Komaravalli, Shazia Ahmad, SumanLatha Gaddam: Influence of genetic variants and mRNA expression of Interleukin IL-17A gene in Asthma susceptibility. Gene. 2022 Dec 16; 854:147119. doi: 10.1016/j.gene.2022.147119. Epub ahead of print. PMID: 36529350.
3. Soujanya Ganta, Prasanna Latha Komaravalli, Suman Latha Gaddam. Evaluation of Total Serum Immunoglobulin E Levels in Asthma Patients. Asian Pac. J. Health Sci., 2022; 9(4):388-392.

5. List of Academic Project list at GMERF (2022-2023)

BATCH 1 NOV 2022-JAN 2023	M.Sc. Microbiology / Genetics
Shadan Degree and PG College for women	
<ul style="list-style-type: none">• Identifying the Hepatitis C Viral Load in patients with chronic liver disease by RT-PCR• Detection of bacterial load for M. Tuberculosis and confirmation of positive cases through HAINS test• Identification of microbial composition in liver transplant donors and recipients by Metagenomics	

MNR PG & Degree College
<ul style="list-style-type: none"> Detection of viral load infecting HIV(AIDS) with positive and negative patients by RT-PCR
Shadan Degree and PG College for women (Genetics)
<ul style="list-style-type: none"> Interleukin 17-A polymorphism (rs8193036 C>T) association with Liver Transplant patients

BATCH 2	March 2023- April 2022	Biotechnology - UG Students-16 (4 groups)
Shadan Degree College for women		
<ul style="list-style-type: none"> The Effect of IL-17A gene on Liver Transplant Patients The Effect of Foxp3 gene on Parkinson's Disease Patients Screening of ACE IN/DLD Polymorphism in Asthma Patients MTHFR Exon-4 variant (rs1801133 C>T) in Premature Ovarian Failure Women 		

BATCH 3	(April – July, 2023)	M.Sc. Microbiology
Anwar Uloom College (2)		
<ul style="list-style-type: none"> Confirmation of Tuberculosis in suspected patients through RT-PCR Quantification of Viral load in HCV patients using real time PCR 		
Shadan Degree and PG College for women (2)		
<ul style="list-style-type: none"> Estimation of Liver function diagnostic markers (AST,ALP,ALT) in liver cirrhotic patients and controls Detection of Serum Creatinine and Urea among renal transplant patients and healthy controls 		
St. Pious	Biochemistry (12)	
<ul style="list-style-type: none"> Estimating the viral load among Hepatitis C virus patients by RT PCR Genotyping for Human Platelet Alloantigen (HPA) variants HPA-1,2,3 and 5 in Recurrent pregnancy loss women Correlation between Premature Ovarian Failure and Methylene Tetrahydrofolate Reductase (MTHFR 677C>T) polymorphism Quantification of Hepatitis B Virus in liver disease patients Investigating Interleukin 17A polymorphism(-767C/T) in liver transplants – A case control study Detection of Tuberculosis Bacteria in TB suspected patients using Real Time PCR Identification of Gut microbial composition in liver transplant donors and recipients – A Metagenomics study Association between FOXP3 polymorphism, rs3761548 and Liver Transplantations Estimation of Procalcitonin as a diagnostic marker of Sepsis infection Role of IL17-A C>T Promoter polymorphism in Asthma susceptibility ACE Insertion/Deletion polymorphism and its association with Parkinson's disease A Study on Single Nucleotide Polymorphism of IL35 gene in Asthma patients and controls 		

BATCH 4 (Aprl – July, 2023) Biotechnology
Koti women's college-4
<ul style="list-style-type: none"> • Influence of IL-17A Gene Polymorphism (rs8193036 C>T) on Parkinson's Disease susceptibility • Association of FOXP3 gene (rs3761548 C<A) Polymorphism in Liver transplants – A case-control Study • Evaluation of Liver Enzyme (AST,ALP,ALT) levels among donors and recipients with end stage Liver disease • Role of Gut Microbiota in Post Liver Transplantation, a study using Metagenomics 16S rRNA Sequencing
BATCH 5 (May- July, 2022) Genetics / Biotechnology
MNR College – Genetics: 4
<ul style="list-style-type: none"> • Procalcitonin guided Therapy in Intensive Care Unit Patients with Severe Sepsis and Septic Shock • Association of Transcription Factor (TF) FOXP3 gene Polymorphism (-3279C/A) with genetic susceptibility to Liver Transplantation • 16s rRNA sequencing for Microbiome analysis through Metagenomics - A Study in liver transplants • Interaction between Anti-Inflammatory cytokine IL-35 Exonic Polymorphism VAL>ILE and Asthma predisposition
Loyola College - Biotechnology: 3
<ul style="list-style-type: none"> • Role of Procalcitonin (PCT) for the evaluation of Sepsis in the emergency department • Gut Microbiome 16s rRNA Sequencing among living liver transplants through Metagenomics • Estimation of IL-35 mRNA expression levels by RT-PCR in Asthma Patients and Healthy controls

Overall Academic Projects: Total **48**- PG students -32 / UG students-16

6. Collaborative courses offered at GMERF:

- Nutritional Internship courses: Total 23 students [18 (6M) & 5 (1M)]
- Pharm-D courses in collaboration with Avanthi Degree and PG College and Sree Dattha Institute of Pharmacy college:
Total 57 students: 30 (3M) & 27 (9 M)

7. New equipment purchased:

- ELISA Reader from Abbott (Model - AM-2100)

Equipment donated by Dr.Sahariah

1. Inverted phase-contrast microscope
2. Semi-auto analyser
3. Centrifuge

8. 9th Foundation Day Organised: On 17th Nov, 2022, we have organised the events and We had two virtual guest lectures by two eminent speakers.

1. Analysis of Human Microbiome by Next Generation Sequencing in Human Health and Disease Pathogenesis **Dr. Anuradha. U**, PhD (Founder, GeneTech)
2. Sepsis Marks the Markers of Immune Response by **Dr. Charitha Madiraju**, PhD (Asso. Professor Biomedical Sciences, Marshall B. Ketchum University, CA)

9. MoU Renewal:

- Gleneagles Global Hospital – for 3 years
- Sree Datta Institute of Pharmacy College – 10 years
- Avanthi Institute of Pharmaceutical Sciences – 5 years

10. Staff:

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| 1. Dr. Lakshmi Kiran Chelluri | Director |
| 2. Dr. K. Prasanna Latha | Sr. Scientist |
| 3. Upasna Upadhyay | Research Scientist |
| 4. S.Srinavya | Research Associate |
| 5. Simhadri Lakshmi Teja | Faculty in Nutrition (Part-Time) |