SRM
INSTITUTE OF SCIENCE & TECHNOLOGY

DEPARTMENT OF GENETIC ENGINEERING

SCHOOL OF BIOENGINEERING

THE GENETICIST

VOLUME 3
ISSUE 1

JANUARY TO JUNE 2024

EDITOR'S DESK

We are delighted to announce the release of the third issue of the second volume of THE GENETICIST. This edition highlights the activities and achievements of our students and faculty from January 2024 to June 2024.

The magazine showcases the contributions of our department members to teaching and research, as well as their numerous accomplishments in publishing research articles, securing grants and fellowships, and obtaining patents and intellectual property rights.

We extend our gratitude to the Chairperson of the School of Bio-engineering, the Head of the Department, the staff, and the students of the Department of Genetic Engineering for their invaluable contributions and support in producing this magazine.

Happy reading!

MESSAGE FROM CHAIRPERSON

> “Challenges are what makes life interesting and overcoming them is what makes life meaningful.” –*Joshua J. Marine*

Dr. M. Vairamani
Chairperson
School of Bioengineering
SRM Institute of Science &Technology

I am delighted that the Department of Genetic Engineering, School of Bioengineering, SRM Institute of Science and Technology, has initiated the publication of the third volume of "The Geneticist" newsletter.

This dynamic department at SRMIST has compiled a newsletter that showcases the achievements of undergraduate and postgraduate students, research scholars, and faculty from January to June 2024.

This initiative will foster a competitive spirit among students and faculty, helping them reach new milestones in genetic engineering research. It will also inspire young minds to learn about the latest developments in biological research and generate innovative ideas for exploration and validation.

Additionally, this newsletter will help faculty and students from other disciplines learn more about the academic and research activities in the Department of Genetic Engineering, encouraging multidisciplinary research. I congratulate the team responsible for producing "The Geneticist" and wish them continued success.

MESSAGE FROM HOD

> “If you are working on something that you really care about, you don’t have to be pushed.
> The vision pulls you.”- *Steve Jobs*

Dr. M. Ramya
Professor and Head
Department of Genetic Engineering
School of Bioengineering
SRM Institute of Science & Technology

We are excited to present the third issue of the second volume of THE GENETICIST. Genetic Engineering is a specialized field that drives high-quality research in both basic and applied sciences, encompassing human, animal, plant, and microbial studies.

This E-newsletter aims to showcase our exceptional research, enhance accessibility for readers, foster interdisciplinary collaborations, and bring greater recognition to our faculty, scholars, department, and the Institute.

I believe this initiative will inspire our faculty to form cross-disciplinary alliances, attract external funding, and contribute through patents and products.

I would also like to take this opportunity to thank all the contributors to this newsletter.

STUDENT TEAM

Meghana Shakthi. A
B.tech 3rd Year

Sayantani Chattopadhyay
B.tech 3rd Year

Sahasra. S
B.tech 3rd Year

Pratham Desai
B.tech 3rd Year

Vanshikaa.K
B.tech 3rd Year

M. Dikshaa
B.tech 3rd Year

Thejas H
B.tech 3rd Year

FACULTY TEAM

Dr. P. Rathinasabapathi
Assistant Professor
Department of Genetic Engineering

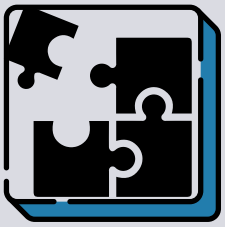
Dr. G. Ganesan
Assistant Professor
Department of Genetic Engineering

VISION AND MISSION

VISION

To emerge as a center of excellence in genetic engineering and to provide research oriented holistic learning experience that enables the graduate to blossom into intellectually capable professionally committed and socially responsible individuals who are able to conduct ethical research.

MISSION



- Built-in mechanism to inculcate professional commitment, ethical values and social relevance.
- Designing continually evolving curriculum with emphasis on research oriented learning and creative thinking towards basic and applied sciences.
- Attracting faculty, students and scholars with strong desire for research and providing them with inspiring research environment to excel in thrust areas of the department.

ABOUT THE DEPARTMENT

The world has come to realize the importance of Genetic Engineering in diagnosing genetic diseases, identifying pathogenic mutations, creating genetically modified organisms, and producing better crop varieties with higher yields. The rapid progress in DNA sequencing and gene editing technologies has emphasized the need to combine classical genetics with emerging fields like genomics. Genetic Engineering is the backbone of biotechnology, offering boundless opportunities for genetic engineers in clinical and applied genetics.

Established in 2004, the Genetic Engineering Department at SRM University aims to produce experts in genomics and gene editing. The department boasts state-of-the-art laboratories and a dedicated team of highly experienced faculty.Emphasizing interactive learning and hands-on training in advanced molecular biology techniques, the department provides cutting-edge research opportunities. Our commitment to excellence prepares students for the vast career opportunities available in genetic engineering today and in the future.

RESEARCH LABS AND FACILITIES

The department boasts an array of advanced equipment that supports faculty members, research scholars, and M.Tech and B.Tech students in conducting research across various fields, including cancer biology, stem cell technology, microbial genetics, developmental biology, and plant genetic engineering. These state-of-the-art tools are also made available to scholars and academicians from other departments as part of the consultancy services provided by the Department of Genetic Engineering.

TEACHING LABS

Bioseparation Lab
Genetic engineering Lab

FUNDED LABS

Genomics Lab
Immunogenetics Lab
Membrane Protein Interaction Lab
Molecular Genetics Lab
Plant Virology Lab
Sponsored Research Lab
Zebrafish Genetics Lab
Cancer Biology Lab
Computational Biology Lab

RESEARCH LABS

Scholar Lab I
Scholar Lab II
Common Research Facility
Stem Cell Biology Lab
Inter disciplinary biology Lab
Neurobiology Lab

LIST OF SOPHISTICATED INSTRUMENTS AVAILABLE FOR RESEARCH AND CONSULTANCY SERVICES

1. Karyotyping System and Olympus Microscope - BioGen Technologies
2. Fluorescence Spectrometer - Hitachi F4700
3. Real-Time PCR - Applied Biosystems
4. Air Jacket CO2 Incubator - Nectranova
5. Particle Delivery System (GeneGun) - Biorad
6. Plant Growth Chamber - Sanyo
7. FPLC - Bio Rad Laboratories
8. Inverted Trinocular Fluorescence Microscope - Nikon ts2fl
9. Vacuum Concentrator - Eppendorf
10. HPLC - Waters
11. Biosafety Class-II Laminar Air Flow - Esco
12. Zebrafish Aquarium System - Tecniplast
13. Micromanipulator - Wpi
14. Nanodrop - Thermo Scientific
15. Electroporator - Bio Rad Laboratories
16. PCR Machines - Agilent, Eppendorf, Applied Biosystems
17. Stereozoom Microscope- Weswox STM-80
18. Inverted Tissue Culture Trinocular Microscope- Magnus

RESEARCH PUBLICATIONS

01. Gnanamurthy, P., **Narasimhan, M. K**., & Sabarathinam, S. (2024). GC-MS analysis of an ethanolic extract of Ocimum species: a network pharmacology analysis insight towards obesity. Future Science OA, 10(1). https://doi.org/10.2144/fsoa-2023-0202

02. Vinayagam, R., Nagendran, V., Goveas, L. C., Narasimhan, M. K., Varadavenkatesan, T., Samanth, A., & **Selvaraj, R.** (2024). Machine learning, conventional and statistical physics modeling of 2,4-Dichlorophenoxyacetic acid (2,4-D) herbicide removal using biochar prepared from Vateria indica fruit biomass. Chemosphere, 350, 141130. https://doi.org/10.1016/j.chemosphere.2024.141130

03. Singh, R., Samuel, M. S.**, Ethiraj, S**., John, J. A., Ravikumar, M., Sekhar, S. J. & Mathimani, T. (2024). Advancement in integrated ammonia synthesis, and its techno-economic analysis, emission index, and contribution to the hydrogen 2.0 economy. Fuel, 364, 131030. DOI:10.1016/j.fuel.2024.131030

04. Sharma, B., **Govindan, G**., Li, Y., Sunkar, R., & Gregory, B. D. (2024). RNA N6-Methyladenosine Affects Copper-Induced Oxidative Stress Response in Arabidopsis thaliana. Non-coding RNA, 10(1), 8. DOI: 10.3390/ncrna10010008

05. **Govindan, G**., KR, S., Alphonse, V., & Somasundram, S. (2024). Role of Germin-Like Proteins (GLPs) in Biotic and Abiotic Stress Responses in Major Crops: A Review on Plant Defense Mechanisms and Stress Tolerance. Plant Molecular Biology Reporter, 1-19. DOI:10.1007/s11105-024-01434-9

06. Vembuli, H., Gor, R., **Ramalingam, S**., Perales, S., & Rajasingh, J. (2024). RNA binding proteins in cancer chemotherapeutic drug resistance. Frontiers in Cell and Developmental Biology, 12, 1308102. https://doi.org/10.3389/fcell.2024.1308102

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10. Suganthi, M., Sowmya, H., Manjunathan, J., Ramasamy, P., Thiruvengadam, M., Varadharajan, V., ... & **Senthilkumar, P**. (2024). Homology modeling and protein-protein interaction studies of GAPDH from Helopeltis theivora and chitinase from Pseudomonas fluorescens to control infection in tea [Camellia sinensis (L.) O. Kuntze] plants. *Plant Stress*, *11*, 100377. https://doi.org/10.1016/j.stress.2024.100377

11. Venkatesan, A., Balaji, R., Tanuja, & **Parani, M**. (2024). Chloroplast genome of Ocimum basilicum var. purpurascens Bentham 1830 (Lamiaceae). *Mitochondrial DNA Part B*, *9*(2), 252-256.DOI: 10.1080/23802359.2024.2310145

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13. Evangeline, W. P., Saranya, E., Rajalakshmi, E., Murugan, M., Mahalakshmi, S., **Ramya, M.** (2024). Advancements of Raman spectroscopy in cosmetics and dermatology. *South African Journal of Botany*, *167*, 122-129. https://doi.org/10.1016/j.sajb.2024.02.011

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15. Abraham, A., Kayalvizhi, R., & **Mohideen, H. S**. (2024). A hybrid stacking classifier with feature selection for handling imbalanced data. *Journal of Intelligent & Fuzzy Systems*, (Preprint), 1-15. DOI: 10.3233/JIFS-236197

16. Harini, V. S., Marimuthu, R., Tantry, M. A., & **Santhakumar, K.** (2024). Induction of Paraquat-Mediated Parkinsonian Phenotype in Zebrafish. *Current Protocols*, *4*(2), e990. https://doi.org/10.1002/cpz1.990

17. Balaji, R., & **Parani, M**. (2024). Development of an allele-specific PCR (AS-PCR) method for identifying high-methyl eugenol-containing purple Tulsi (Ocimum tenuiflorum L.) in market samples. *Molecular Biology Reports*, *51*(1), 439. DOI:10.1007/s11033-024-09365-0

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53. Karthikeyan, M., & **Rathinasabapathi, P.** (2024). A Label-Free Colorimetric AuNP-Aptasensor for the Rapid Detection of Vibrio cholerae O139. Cellular and Molecular Bioengineering, 1-13. DOI: https://doi.org/10.1007/s12195-024-00804-3

54. Catherine, J. M., Karthikeyan, M., & **Rathinasabapathi, P**. (2024). Rapid detection of chilli leaf curl virus using loop-mediated isothermal amplification. *Australasian Plant Pathology*, 1-8. DOI: 10.1016/j.jviromet.2022.114474

55. Vasanthakumar, D., Loganathan, R., & **Senthilkumar, P.** (2024). Lasioptera sharma, a new species of gall midge (Diptera: Cecidomyiidae) feeding on LEAF indica (Vitaceae) in India. *Journal of Threatened Taxa*, *16*(6), 25465-25469. DOI:10.11609/jott.9036.16.6.25465-25469

56. Jayanthi, P., Kumar, P., Roy, A., Mandal, B., & **Geetanjali, A. S.** (2024). Detection of multiple Begomoviruses in chilli crop in the five agro-climatic zones of Tamil Nadu state of India. *Tropical Plant Pathology*, 1-13. DOI: https://doi.org/10.1007/s40858-024-00659-z

57. Chandrasekhar, B., Gor, R., **Ramalingam, S., Thiagarajan, A**., Sohn, H., & **Madhavan, T.** (2024). Repurposing FDA-approved compounds to target JAK2 for colon cancer treatment. *Discover Oncology*, *15*(1), 1-18. DOI:10.1007/s12672-024-01050-9

58. Annamalai, J., Seetharaman, B., & **Sellamuthu, I.** (2024). Nanomaterials in the environment and their pragmatic voyage at various trophic levels in an ecosystem. Journal of Environmental Management, 364, 121307. DOI:https://doi.org/10.1016/ j.jenvman.2024. 121307

59. Dhar, R., & **Devi, A**. (2024). Engineered cell versus modified exosomes in cancer therapy. *Clinical and Translational Discovery*, *4*(3), e320. DOI: https://doi.org/10.1002/ctd2.320

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61. Shipmon, J. C., **Rathinasabapathi, P**., Broich, M. L., Hemansi, & Eiteman, M. A. (2024). Production of Esters in Escherichia coli Using Citrate Synthase Variants. *Microorganisms*, *12*(7), 1338. DOI: https://doi.org/10.3390/microorganisms12071338

RESEARCH GRANTS (ACTIVE)

INVESTIGATOR	TITLE OF THE PROJECT	FUNDING AGENCY	AMOUNT (LAKHS)
Dr.K.Rajinish (PI), Dr.Thirumurthy (Co-PI)	From data-driven Novel Enzyme Discovery towards Enzyme, Combinations for Plastic Degradation	Indo-Sweden Joint call - Circular Economy, Ministry of Earth Sciences (MoES)	140
Dr.M.Ramya (PI) Dr.Rathinasabapathi (Co-PI)	Development of Point of care Apta-sensor for Early and Rapid Detection of Leptospirosis	ICMR	32.6
Dr.M.Ramya (PI) Dr. N. Ashwin Kumar (Co-PI)	IoT Based device for Rapid STI Detection of T.pallidum, C. trachomatis and N. gonnrrhoeae	ICMR	56

INVESTIGATOR	TITLE OF THE PROJECT	FUNDING AGENCY	AMOUNT (LAKHS)
Dr. D. Rex Arun Raj	Field evaluation of water use efficient growth promoting bacteria-plant associations for increased biomass	State Forest Research Institute/Biozone Research Technologies	8.7

SRM EXCELLENCE GRANT

INVESTIGATOR	TITLE OF THE PROJECT	AMOUNT (IN LAKHS)
Dr. P. Senthilkumar	Identification of miRNAs expressed upon UV stress and its role on photosynthesis in orzya sativa a.	2.5
Dr. S Shobana	Phage and antibiotic combination for treating polymicrobial UTI infections.	3.0
Dr. E. Selvarajan	Microbial diversity analysis and screening for novel xylanase from the marine sediments	1.75

STUDENTS SCHOLARSHIP/ FELLOWSHIP

FULL TIME - Ph.D.	69
PART TIME - Ph.D.	1
JRF	3
SRF	1
DST INSPIRE FELLOW	1
UGC FELLOW	1

Ph.D. COMPLETION DETAILS

GUIDE NAME	SCHOLOR NAME	REG NO OF SCHOLOR	TITLE OF THESIS	VIVA DATE
Dr.M.Ramya	Ms.Sivadharshini	RA1913010011006	Insights into bacterial alginate metabolism and their applications in bioenergy production	21.3.2024

STUDENTS WITH SCHOLARSHIP / FELLOWSHIP

NAME OF THE STUDENT	REGISTER NO	SCHOLARSHIP	AIR	YEAR
Ms.SHRISTI MADHAN	RA2111037010030	GATE	142	2024
Mr,KRISHNA SANTOSH	RA2011037010060	GATE	378	2024
Mr.SAI SRINIVAS	RA2011037010055	GATE	428	2024
Ms.REVATHI A	RA2011037010039	GATE	500	2024
Ms.SANA RIAZ	RA20110370100105	GATE	500	2024
Ms.ANWESHA ARUPA	RA2011037010014	GATE	575	2024
Ms.AKSHAYA. C	RA2011037010040	GATE	771	2024
Mr.NARENDRAN M	RA2011037010018	GATE	906	2024
Ms.DIVYASHRI. S	RA2011037010024	GATE	1044	2024
Ms.MALAVIKA NAIR	RA2111037010091	GATE	2025	2024
Ms.SUNANDHINI C	RA2111037010092	GATE	2025	2024
Ms.MANVI S	RA2011037010059	GATE	2446	2024
Mr.SAPTARSHI ROY	RA2111037010063	GATE	3214	2024

CONFERENCE / WORKSHOP / WEBINAR ATTENDED BY FACULTY

FACULTY NAME	EVENT TYPE	DATE	EVENT NAME
Dr. Devi. A	Workshop	9.2.2024 to 10.2.2024	Basics in Animal Cell Culture Workshop (BACC-2024)
Dr. Devi. A	Workshop	16.3.2024	Pioneering Pathways: Women at the Helm conducted by SRMIST
Dr. Ganesan	Workshop	4.1.24-5.1.24	Designing and cloning of guide RNA for CRISPR Cas 9 based on genome editing in plants
Dr. Sivaramakrishnan	Workshop	23.1.24 to 24.1.24	Hands-on Training Cum Workshop on Proteomic Techniques
B Usha	Workshop	13.3.2024	Happiness and Wellness Program, SRMIST
B Usha	Workshop	16.3.2024	Genomics India Conference, 2024

B Usha	Conference	1.01.2024 to 3.01.2024	Genomics India Conference, 2024
B Usha	Conference	1.04.2024 to 5.4.2024	National conference on Biotechnological advancements for sustainable environments, VELTech
Dr.P.Senthilkumar	Workshop	23.2.2024 to 2.4.2024	Skill development program on basic Molecular techniques for budding researchers
Dr. N.Aruljothi	Conference	14.02.2024 to 16.02.2024	International conference on New Horizons in Bioengineering: Fostering Academia Industry Partnership (ICB 2024)
Dr. A. Swapna Geetanjali	Conference	14.02.2024 to 16.02.2024	International conference on New Horizons in Bioengineering: Fostering Academia Industry Partnership (ICB 2024)
Dr. .J. Megala	Conference	21.03.2024	Network Pharmacology
Dr. .J. Megala	Conference	14.02.24 to 16.02.24	International conference on New Horizons in Bioengineering: Fostering Academia Industry Partnership (ICB 2024)

Dr. M. Parani	Workshop	3.06.24 to 14.06.24	Molecular Biology Summer Workshop
Dr. M. Parani	Workshop	17.04.24 to 28.06.24	Molecular Biology Summer Workshop
Dr. S.Kirankumar	Conference Participation	14.02.24 to 16.02.24	International Conference on New Horizons in Bioengineering: Fostering,Academ ia-Industry Partnership ICB24
Dr. S.Kirankumar	Conference	14.02.2024 to 16.02.2024	International Conference on New Horizons in Bioengineering: Fostering,Academ ia-Industry Partnership ICB24
Dr. M. Ramya	Conference Participation	14.02.2024 to 16.02.2024	International Conference on New Horizons in Bioengineering: Fostering,Academ ia-Industry Partnership ICB24

Dr. E.Selvarajan	Conference	14.02.2024 to 16.02.2024	International Conference on New Horizons in Bioengineering: Fostering,Academ ia-Industry Partnership ICB24
Dr. S.Kirankumar	Teacher training workshop participation	19.01.2024 to 04.02.2024	DBT sponsored teacher training workshop in using Drosophila melanogaster for biology laboratoriesheld at BHU, Varanasi
Dr. S.Kirankumar	Workshop - Subject expert	12.02.2024 to 16.02.2024	Workshop on Trends in Animal Models, In Vitro Models, and In Silico Approaches in Scientific Research at Bharathidasan University, Tiruchirappalli
Dr. NS Raja	Workshop	29.01.2024 to 04.02.2024	7-days hands-on Workshop for College Teachers on using Drosophila melanogaster for Biology
Dr. NS Raja	Conference	14.02.2024 to 16.02.2024	International Conference on New Horizons in Bioengineering: Fostering,Academ ia-Industry Partnership ICB24

EXAMINER/DC MEMBER/ OTHERS

FACULTY NAME	DC MEMBER/ INVITED LECTURE	DATE	EVENT DETAILS/ LECTURE TOPIC	HOST INSTITUTE
Dr. N. Manoj Kumar	External Judge	10.05.24	Med Star Summit 2024	Saveetha Institute of Medical and Technical Sciences
Dr. G. Ganesan	DC Member	21.06.24	Doctoral Committee Meeting	Saveetha Institute of Medical and Technical Sciences
Dr.V. Sivaramakrishnan	DC Member	24.04.24	Synopsis Meeting	VISTAS, Chennai
Dr. V. Sivaramakrishnan	DC Member	22.05.24	Doctoral Committee Meeting	VISTAS, Chennai
Dr.Ramya	Invited Talk	12.10.2024	“Skill based internship programme" - Entrepreneurship CareerHub (ECH) - RUSA 2.0	Madras University

Dr.M.Ramya	BOS member	22.06.2024	BOS member	Padmavani Arts and Science College, Salem
Dr.M.Ramya	Chairperson	9.10.23 to 10.10.23	Conference on Structural Biology and Drug Discovery (CSBD) Commemoration of the 101st Birthday of Prof. G. N. Ramachandran, FRS	SRMIST
Dr.M.Thirumurthy	DC Member	24.04.2024	Doctoral committee member	St. Peter's Institute of Higher Education and Research
Dr. B. Usha	Chairperson	12.02.24 to 13.02.24	International Conference on Innovations in Life Sciences (ICILS'24)	SRMIST
Dr. B. Usha	External Judge	4.1.2024	SASTRA 2024	IIT Madras

Dr.P.Senthilkumar	DC Member	22.04.2024	Doctoral Committee Meeting	Dept. of Biotechnology, Sri Ramachandra Institute of Higher Education and Research, Chennai
Dr.P.Senthilkumar	DC Member	28.02.2024	Doctoral Committee Meeting	Vels University, Chennai
Dr.P.Senthilkumar	DC Member	26.02.2024	Doctoral committee Meeting	Vels University, Chennai
Dr.S.Shobana	Invited Talk	7.05.2024	Workshop on "An alternative to antibiotics, its current status and perspectives"	Saveetha Institute of Medical and Technical Sciences
Dr. N. ArulJothi	DC Member	3.05.24	Doctoral Committee Meeting	Vels University, Chennai

Dr.N. ArulJothi	External Judge	4.01.2024	SASTRA 2024	IIT Madras
Dr.Rex Arunraj	Invited Talk	13.01.2024	Invited talk	Biozone Research Technologies
Dr.Rex Arunraj	Invited Talk	25.05.24	Invited talk	Biozone Research Technologies
Dr. J.Megala	DC Member	30.01.24	Research Advisory Committee Meeting (RAC)	Vels Institute of Science,Technology and Advanced Studies (VISTAS)
N S Raja	Invited talk	12.01.24	Invited talk	Essentials for early career researchers

STUDENT ABROAD PROGRAM

The Semester Abroad Program (SAP) at SRM Institute of Science and Technology (SRMIST) is renowned for providing students with exceptional international exposure and global opportunities. This initiative allows students to enhance their skills by working with eminent professors from prestigious universities, thereby accelerating their personal and career growth both in India and overseas. SAP fosters a unique environment where students can work in cross-cultural and multinational settings. We are proud of our students who have participated in SAP, thanks to the dedicated efforts of our faculty members who have facilitated successful collaborations. This program significantly enriches our students' research interests and helps them develop expertise in various techniques, empowering them with self-confidence to become independent researchers.

Ms. M. Shrishti and Ms. Malavika Nair, III year B.Tech students at the GREO International Summer Research Internship in Health Sciences at the University of Missouri, USA

Notable participants of SAP include Ms. M. Shrishti (RA2111037010030) and Ms. Malavika Nair (RA2111037010059), current final year B.Tech students who undertook the GREO International Summer Research Internship in Health Sciences at the University of Missouri, USA. Leela Jayashri S. (RA2011037010113), who graduated recently, attended Universiti Kebangsaan Malaysia during the academic year 2023-2024. We are also pleased to share a group photograph of our final year B.Tech students, who participated in the Harvard program in the USA from August 2023 to August 2024. These experiences exemplify the transformative impact of SAP on our students' academic and professional journeys.

Leela Jayashri S attended Universiti Kebangsaan Malaysia during the academic year 2023-2024

Sid Dsa, Anna Mathew Lawrence, Annesha Dutta, Sreyank Tirunagiri, Nithin Karthic Balaji for Harvard program in the USA from August 2023 to August 2024

FACULTY ABROAD PROGRAM

The Faculty Abroad Program (FAP) by SRM Institute of Science and Technology (SRMIST) exemplifies the institution's commitment to advancing research and academic collaboration on a global scale.

Dr.P.Senthilkumar at Institute of Genomics for Crop Abiotic Stress Tolerance (IGCAST) at Texas Tech University

Dr. P. Senthilkumar's training at the Institute of Genomics for Crop Abiotic Stress Tolerance (IGCAST) at Texas Tech University. Texas Tech, a renowned public research university in Lubbock, Texas, offers over 150 courses through 13 colleges and hosts 60 research centers and institutes. The Department of Plant & Soil Science (PSS) at TTU, known for its student-focused and research-intensive environment, provides extensive opportunities for cutting-edge research. The PSS program boasts on-campus facilities, approximately 150 acres of replicated field research off-campus at the Texas Tech New Deal Agricultural Field Laboratory, and up to 6,000 acres in TAWC producer sites across the region. At IGCAST, Dr. Senthilkumar will focus on leveraging genomic technologies to enhance crop productivity under adverse environmental conditions, specifically working on crop improvement in sorghum and soybean using CRISPR/Cas9 technology. This experience highlights the profound impact of FAP in equipping SRMIST faculty with advanced research skills and fostering international academic collaborations.

EVENTS

WORKSHOPS

Workshop on Designing and Cloning of Guide RNA for CRIPSR/Cas9 Based Genome Editing

The workshop on Designing and Cloning of Guide RNA for CRISPR/Cas9 Based Genome Editing, organized by Dr. G. Ganesan from January 4-5, 2024, was a resounding success. Day 1 featured insightful talks from experts like Dr. Ragupathi Nagarajan, hands-on sessions on guide RNA annealing, and practical demonstrations on plasmid digestion. Day 2 included an engaging talk by Dr. Harikrishnan and practical sessions on transformation experiments and PCR techniques. The workshop concluded with a valedictory function where participants received certificates, reflecting on the knowledge gained and the collaborative efforts throughout the event.

Hands-on training cum workshop on proteomics Techniques

The two-day Hands-on Training cum Workshop on Proteomics Techniques, organized by Dr. V. Sivaramakrishnan from January 23-24, 2024, was a comprehensive and engaging event. On the first day, participants were introduced to SDS-PAGE techniques, followed by practical sessions on gel casting, protein sample preparation, and staining. The day concluded with a quiz program. The second day featured a recap, a technical lecture on western blotting, and hands-on sessions on blotting procedures, antibody incubation, and detection. The event concluded with a quiz competition, a feedback session, and a valedictory function where prizes were distributed to participants.

WORKSHOPS

Workshop on Basics in Animal Cell Culture (BACC)

The two-day Workshop on Basics in Animal Cell Culture (BACC), organized by Dr. Devi from February 9-10, 2024, provided an in-depth exploration of cell culture techniques. The event began with an inaugural ceremony led by Dr. Ramya M, HoD of Genetic Engineering, and Dr. Devi, followed by practical sessions on trypsinization, cryopreservation, lymphocyte isolation, cell counting, and viability checks. The second day focused on cell revival experiments, interactive Q&A sessions, and a quiz competition. The workshop concluded with a valedictory function where participants shared their feedback, highlighting the hands-on experience and knowledge gained.

Skill Development program on Basic Molecular Techiques for Budding Researchers

The Skill Development Program on Basic Molecular Techniques for Budding Researchers, led by Dr. P. Senthilkumar, will take place from February 23-24, 2024. This intensive workshop aims to equip emerging researchers with essential molecular biology skills. Over two days, participants will engage in hands-on training sessions, covering fundamental techniques and practical applications in molecular biology, fostering a deeper understanding and competence in this critical area of research.

SPECIAL INVITED TALK

On June 26, 2024, Dr. Cynthia Gleason, Associate Professor at Washington State University, delivered a presentation on "Plant-Nematode Interactions – What Happens Below Ground?" at Prof. G. N. Ramachandran Hall, SRMIST. She discussed the significant agricultural losses caused by root-knot nematodes (Meloidogyne spp.), particularly M. chitwoodi and M. hapla, affecting potato crops in the Northwest USA. Her lab's research focused on uncovering molecular mechanisms of nematode infection and plant defense. By analyzing nematode transcriptomes and identifying genes like Mc265, her team found that callose production is a crucial basal defense response. Suppressing this response increased plant vulnerability, highlighting potential strategies for sustainable crop protection.

Alumni Talks

Alumni talk on Genetic Counselling: A global profession

On January 30, 2024, the Alumni Interaction Series featured a talk on "Genetic Counseling – A Global Profession," organized by Dr. J. Megala and Dr. B. Usha.with a welcome address by Manvi, a B.Tech 4th-year student, who introduced the alumnus, Ms. Merlene Peter. Ms. Peter, now a Pediatric Genetic Counselor at Ann & Robert H. Lurie Children's Hospital in Chicago, shared insights into the genetic counseling profession, including application requirements, certification, and preferred colleges. Her talk inspired around 50 participants, comprising B.Tech, M.Tech, and PhD scholars, to consider genetic counseling as a career. The session concluded with a vote of thanks from Manvi and appreciation from faculty members.

Alumni talk on High-Fat Diet-Induced Ferroptosis promotes Enteric Neurodegeneration: A Mechanism for Intestinal Motility Disorders

On April 24, 2024, the Alumni Mentoring Session featured an engaging Alumni Panel Talk organized by Dr. J. Megala and Dr. B. Usha. The event commenced at 11:00 AM with a welcome address from Dr. J. Megala, who introduced the alumnus, Dr. Arun Balasubramaniam. Dr. Balasubramaniam, a post-doctoral researcher at Emory University, shared insights on his research titled “High-Fat Diet-Induced Ferroptosis Promotes Enteric Neurodegeneration: A Mechanism for Intestinal Motility Disorders.” He also discussed his educational journey and offered valuable career advice. The session, attended by around 30 B.Tech, M.Tech, and PhD scholars, was highly motivating and highlighted the importance of perseverance and mentorship. Dr. Megala concluded the event with a vote of thanks.

Alumni talk on Path to a Doctorate in Germany

The Alumni Panel Talk held on March 28th, 2024, was a remarkable event organized by Dr. J. Megala and Dr. B. Usha from the Department of Genetic Engineering at SRMIST. The session commenced with a welcome address by Dr. J. Megala, who also introduced the guest speaker, alumna Renuka Dharani Shivakumar. Renuka shared her inspiring journey from SRM to pursuing a Doctorate in Germany, providing valuable career advice and insights into her research in enzyme production at Philipps University Marburg. The event, attended by 44 participants including B.Tech, M.Tech, and Ph.D. scholars, was both motivating and informative, emphasizing the importance of perseverance, mentorship, and passion in one's career.

Alumni Talk on Academics to Entrepreneurship

The Alumni Interaction Series on February 26th, 2024, titled "Academics to Entrepreneurship," was a dynamic event organized by Dr. B. Usha and Dr. J. Megala from the Department of Genetic Engineering at SRMIST. The session, launched by Malavika, a third-year B.Tech student, featured an engaging talk by alumnus Dhunush R A, who shared his transformative journey from academia to entrepreneurship. Dhunush, now the founder of hyKROPS, a hydroponics venture, discussed the essentials of entrepreneurial success, including selecting co-founders and developing viable business ideas. With around 70 participants, including students and faculty, the talk provided valuable insights and inspired many to explore entrepreneurship as a career path.

FACULTY MEMBERS

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