

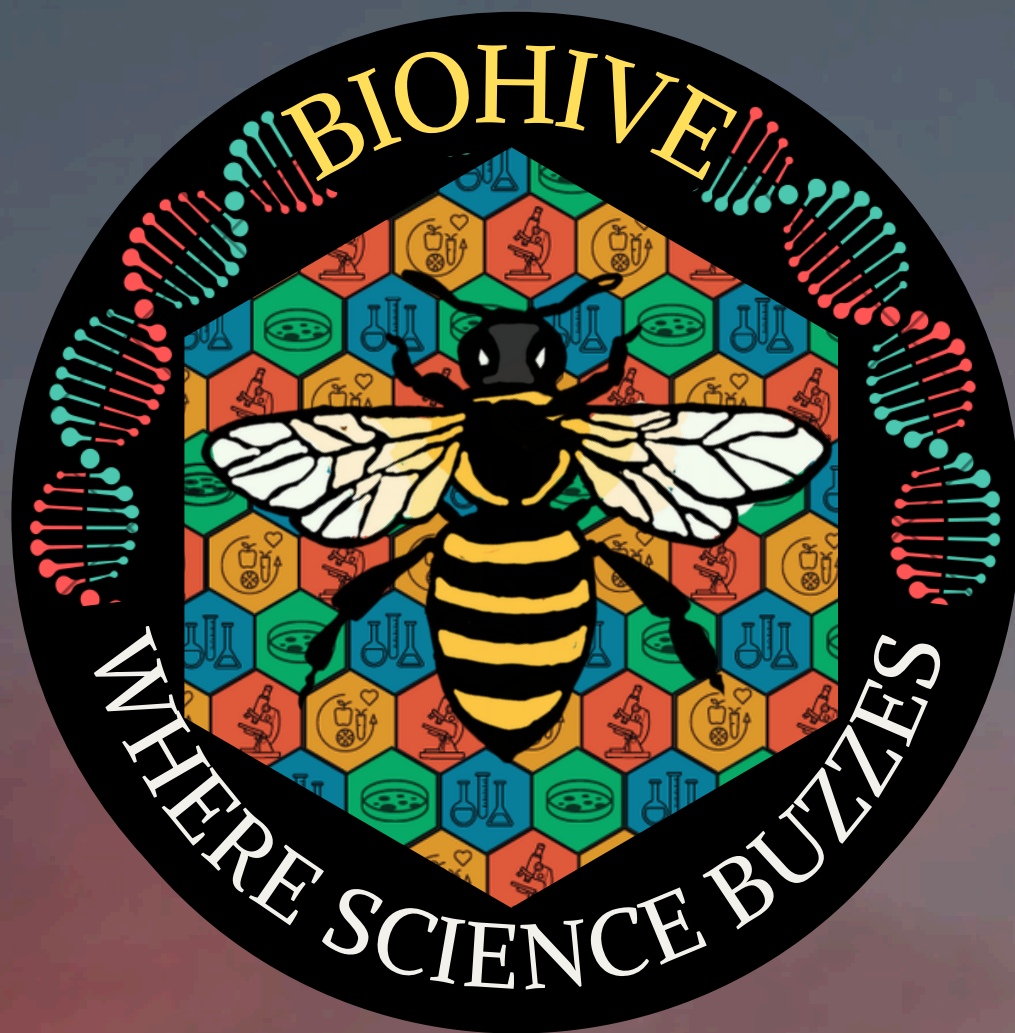
**ISSUE 4**



**APRIL 2026**

# BIOHIVE

where science buzzes....



## SIGNIFICANCE AND SYMBOLISM OF THE LOGO:

The logo encapsulates everything we've dreamt of for Biohive. Bees are known for hardwork, sense of community and friendship. That is precisely the team we hope to build through this initiative. A beehive symbolizes strength found in unity, as the hive members work together harmoniously, supporting each other's contributions. It is the kind of environment we hope to build at Biohive. The four colours in the logo represent the four departments with their apt elements.

# Principal's Message

It gives me immense pleasure to witness enriching 4th edition of BioHive, the vibrant reflection of our Life Sciences departments' academic, co-curricular, and creative pursuits. This issue, in particular, captures the essence of the even semester with remarkable depth and diversity.



The Events section brings to light the dynamic academic calendar shaped by our four Life Sciences departments. From seminars to hands-on workshops, each event is a testimony to the dedication and intellectual curiosity of both faculty and students.

*Lab Chronicles* is especially poignant this year, as it celebrates the final-year students' journeys through their research projects. Their reflections mirror not only scientific growth but also personal transformation, teamwork, and resilience.

In the Articles section, our students and faculty dive into contemporary biology topics, making complex scientific ideas accessible and thought-provoking. This is where scientific thinking meets creative expression.

*Beyond the Books* showcases the outstanding accomplishments of our students beyond the classroom—from national conferences to international workshops. Their stories inspire and demonstrate how learning thrives in diverse settings.

Adding a lighter note, the *Fun of BioHive* section invites readers to explore biology through puzzles and quirky facts—reminding us that science, too, has its moments of play and wonder.

Finally, the *Career Conundrum* feature offers valuable insights into international opportunities through the experiences of our alumni. Their journeys provide both guidance and motivation for students aspiring to take up global careers in life sciences.

My heartfelt congratulations to the editorial team, contributors, and faculty mentors who have curated this vibrant edition. May *BioHive* continue to grow as a platform that informs, inspires, and ignites curiosity.

With warm regards,  
Dr G S V R K CHOUDARY  
Principal, BVC

# Heads' of Departments Messages



It gives me immense pleasure to know that the students of Undergraduate Life Sciences have initiated a vibrant platform in the name of BioHive- an Undergraduate Life Sciences Digital Newsletter, which is designed to connect, inform, and celebrate the Life Sciences community of BVC. I am happy to know that the fourth edition of Biohive featured various events like Events Round-up, Lab Chronicles, Feature Articles, Fun of Biohive and Career Conundrum.

I am sure that our shared goal of spotlighting the diverse achievements, events like, and opportunities within our institution and beyond, which are covered in this digital newsletter with a collaborative effort of the students and faculty across the four dynamic departments of Genetics and Biotechnology, Chemistry, Microbiology, and Biochemistry and Nutrition, will be achieved.

This newsletter is more than a publication—it's our collective voice, uniting students and faculty in celebrating discovery, learning, and innovation. I invite every student to contribute their successes and insights. Together, let's make Biohive a vibrant hub that inspires and connects our Life Sciences community.

With best wishes,

**Dr. K. Anuradha**

**Head, Department of Microbiology, BVC**

I congratulate the entire team of BioHive for the successful release of the 4th edition.

This Newsletter showcases the creativity of our students and all the vibrant activities of Life Science Departments of BVC.

The dedication shown by faculty coordinators and students of Team BioHive is highly commendable.

I hope every edition of BioHive will inspire more and more students to take up higher studies and research in the fascinating field of Life Sciences.



**Dr. B. Kalpana**

**Head, Department of Genetics and Biotechnology**

# Heads' of Departments Messages

Greetings on bringing out the 4th Edition of BioHive- the newsletter exclusive for life sciences, by the students of B.Sc Life Sciences. It is overwhelming to know that the newsletter is already in its 4th edition in a very brief period. A newsletter of this magnitude that covers the events of all life sciences departments showcases the untiring efforts of the student editors and contributors in their efforts to highlight the importance of sciences in day-to-day life. The inclusion of fun activities in the newsletter would definitely be an attraction to the student community. In addition, this newsletter provides a forum for the students to share their experiences and achievements in national and International events. I congratulate the team and wish them all the best in their endeavours



**Dr. S. Padma,**  
**Head, Department of Biochemistry and Nutrition, BVC**



I am delighted to convey my message for BioHive Magazine, a wonderful initiative that embodies curiosity, creativity, and the spirit of scientific inquiry. In an age driven by rapid advancements, fostering scientific awareness and critical thinking is more important than ever, and this magazine plays a valuable role in that mission. Bio-hive is more than just a publication; it is a dynamic platform where knowledge and innovation come together. By presenting scientific ideas in a clear and engaging way, it motivates students to explore concepts beyond the classroom and appreciate their real-world relevance. The diverse content—ranging from experiments and research updates to environmental and technological topics—makes it both educational and inspiring. I sincerely appreciate the efforts of the editorial team, contributors, and students whose hard work and dedication have made this magazine possible. Their commitment truly reflects a passion for promoting scientific learning and creativity.

I wish BioHive Magazine continued success in inspiring young minds and fostering a culture of innovation and discovery.

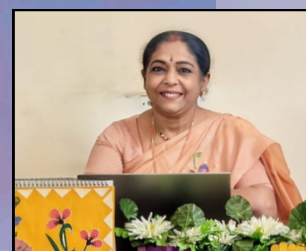
Best Wishes  
**Dr. Mary Nygi Kurian**  
**Head, Department of Chemistry**

# Faculty Coordinators' Messages

"It is with immense pride and appreciation that I present the fourth edition of BIOHIVE. This milestone is a testament to the passion, creativity, and unwavering perseverance of our undergraduate students.

I as the faculty coordinator must acknowledge the dedication of the current team Roshni Gazalamin, Samyameendra and Joshua Parnandi who have brilliantly upheld the legacy established by our founders: Abhilaya, Nidish, and Shikha and earlier coordinations Taruni Sree and Srinidhi.

As the Departments of Life Sciences continue to reach new heights in both academic and co-curricular spheres, Biohive remains a vital platform for inspiration and excellence. My heartiest congratulations and best wishes to our student coordinators Roshni, Samyameendra, and Joshua (BtGC Final Year)—for their leadership in carrying this vision forward.



**Dr S Nagamanju**  
Assistant Professor  
Department Of Biotechnology



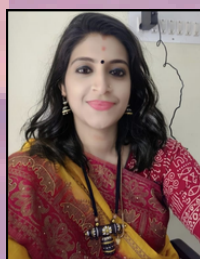
**Ms.D. Rajeshwari**  
Assistant Professor,  
Dept.of Chemistry

I am pleased to extend my warm greetings on the release of BioHive Magazine. This initiative is a valuable effort in promoting scientific awareness and inspiring students to actively engage with the dynamic world of science and technology. Bio-hive encourages readers to think critically, explore new horizons, and cultivate a spirit of inquiry. I wish the entire team continued success in all future endeavors.

The BioHive Newsletter continues to grow as a useful and exciting platform for our life sciences students. BioHive is a space where we learn together, share ideas, and celebrate each other's efforts. I appreciate the team for preparing the 4th edition and encourage all students to participate and keep this spirit alive. May BioHive continue to guide and inspire us in our academic journey.



**Dr T Chaitanya**  
Assistant Professor  
Department of Microbiology



**Dr. S. Manju Devi**  
Assistant Professor  
Department of Biochemistry

It gives me immense pleasure to be part of the 4th edition of our Life Science magazine 'Biohive', a platform that continues to celebrate curiosity, innovation and scientific excellence. I appreciate the editorial team for their commitment and meticulous efforts in bringing out this edition successfully. Wishing this edition great success.



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# EVENT O CLOCK

# Live and Interactive Orientation on “Unlocking Future Careers”

The Department of Genetics and Biotechnology organised a live and interactive orientation session on “Unlocking Future Careers” on 29-11-25 at 10:00 AM in the MBA Seminar Hall, BVC. The programme was attended by 130 students from the second and final years of BTMC, BTGC, MGC, and BiNDC.

The students had an enriching and insightful experience through an engaging guest lecture on career development in the life sciences, delivered by Prof. C.S. Mujeebuddin, Founder and CEO of Clinosol Research Pvt. Ltd. The session offered a comprehensive outlook on professional opportunities after graduation, with special emphasis on the expanding fields of Clinical Biology and Pharmaceutical Research.

Prof. Mujeebuddin explained the complete lifecycle of medication development, covering areas such as biologics, vaccines, and personalized treatments, while highlighting the vast and promising career prospects available in these domains.



# Visit to CDFD

The Department of Genetics and Biotechnology, Bhavan's Vivekananda College, Sainikpuri, organised an educational visit to the Centre for DNA Fingerprinting and Diagnostics (CDFD) on 2nd February 2026 for undergraduate students to enhance their conceptual understanding and practical exposure to DNA Fingerprinting and interdisciplinary research.

The visit was coordinated by Dr. Sushma Patkar and Ms. D. Metilda Rosalin. A total of 64 students participated, including 33 students from BtGC III Year and 31 students from MGC III Year.

During the programme, the institute staff delivered seminars on Plant DNA Fingerprinting, highlighting the importance of Basmati rice and its adulteration limits, and on Human DNA Fingerprinting along with the sequencing services offered by the institute.

The visit concluded with a tour of the advanced instrumentation facility, where students were introduced to platforms such as ABI DNA Sequencing, RT-PCR, CD-Spectropolarimetry, Live Cell Imaging, and Tissue Processing systems.



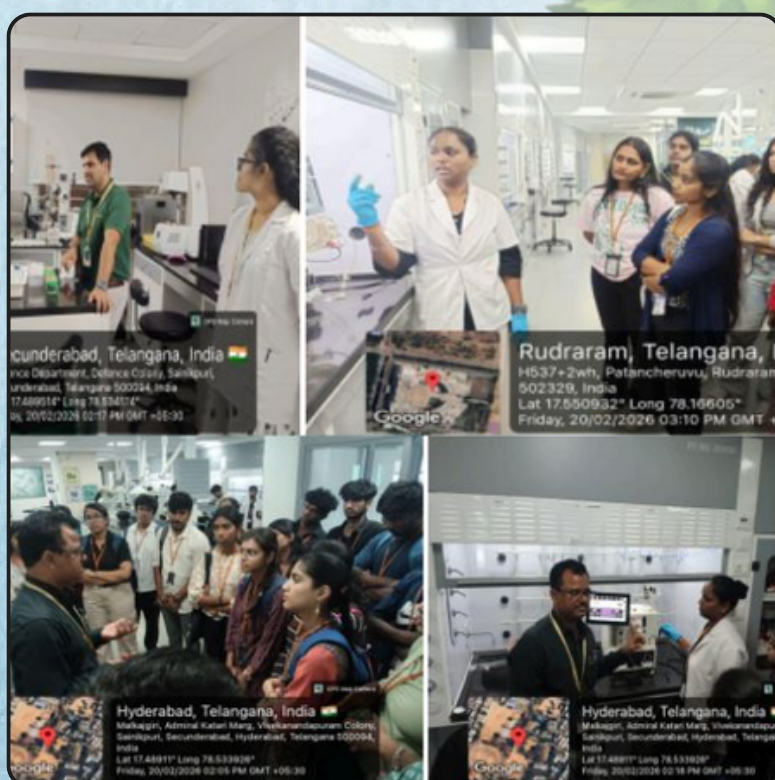
# Field visit to Gitam University

The Department of Chemistry, Bhavan's Vivekananda College of Science, Humanities and Commerce, Sainikpuri, organised an educational visit to GITAM University on 20th February 2026 for undergraduate students to enhance their conceptual understanding and explore career opportunities after a bachelor's degree in Life Sciences.

The visit was efficiently coordinated by Ms. Prerana Loomba and Ms. D. Rajeshwari. A total of 115 students participated, including 75 students from Life Sciences III Year and 40 students from Physical Sciences III Year.

To commemorate the birth anniversary of Sir Shanti Swarup Bhatnagar, Prof. G. Narahari Sastry delivered a keynote address highlighting the scientist's enduring contributions to Indian research.

The visit concluded with a tour of the advanced instrumentation facility, where students were introduced to sophisticated platforms such as RT-PCR, Double Distillation Units, 3D Food Printers, Rotary Vacuum Evaporator, Mass Spectrometer, Flash Chromatography, and Rheometer. Overall, the visit broadened students' perspectives, inspiring them to aim higher and contribute towards the betterment of the nation.



# Nutrition Psychology and Diet Counseling

The Department of Biochemistry and Nutrition, Bhavan's Vivekananda College of Science, Humanities and Commerce, Sainikpuri, Secunderabad, organised a Value Added Course titled "Nutrition Psychology and Diet Counseling" from 10th November to 15th November 2025. Conducted in offline mode from 10:00 a.m. to 4:00 p.m., the programme had a total duration of 30 hours.

The course was coordinated by Dr. S. Padma, Head of the Department, and Mrs. V. Revathi, Assistant Professor in Nutrition. The sessions were facilitated by Mrs. V. Revathi, Ms. Maria Dorothy, Lecturer in Psychology, Faculty of Arts, BVC, and Mr. S. Naveen Kumar, Assistant Professor (Guest Faculty), Department of Rehabilitation Psychology, NIEPID, Government of India, Secunderabad.

The sessions focused on the relationship between nutrition, diet, and psychology. Students were introduced to the significance of nutrition, the psychological aspects of eating behaviour, the role of cognition and emotion in food choices, and the impact of lifestyle patterns on health. The programme also highlighted the importance of psychological insight in designing personalised nutrition plans and the influence of behavioural and social factors on dietary adherence and overall well-being.



# Vegan Month Celebration

## “Go Vegan”

The Department of Biochemistry & Nutrition organised an event titled “Go Vegan” as part of Vegan Month celebrations on 29th November 2025 at the Biochemistry Block. The awareness programme aimed to promote the benefits of plant-based living and encourage students to view veganism as a healthy, ethical, and sustainable lifestyle choice.

As part of the event, a poster presentation and a display and sale of innovative vegan recipes were conducted. The theme for the poster presentation was “Veganism and its Positive Impact.” A total of 17 students participated, presenting 16 creative and informative posters on topics such as Go Vegan, Vegan Diet, Vegan Food Pyramid, and related themes. The posters highlighted key ideas including environmental protection, cruelty-free living, and the nutritional value of plant-based foods.

In the recipe display event, 21 students showcased 13 innovative vegan recipes, featuring dishes such as Strawberry Delight, Soya Beetroot Tikki, Coconut Laddu, Hara Bhara Spinach Nuggets, soya milk vermicelli payasam, and ragi milkshake. The activity demonstrated that vegan cuisine can be both wholesome and delicious using simple plant-based ingredients, attracting great interest from students and faculty alike.

Overall, the programme successfully created awareness about veganism, encouraged student creativity, and emphasised the importance of sustainable and ethical food habits.



# Dietetics Day Celebrations 2026

## Guest Lecture

The Department of Biochemistry & Nutrition organised a guest lecture on the occasion of “Dietetics Day Celebrations 2026.” Dietetics Day is celebrated annually on 10th January and was initiated by the Indian Dietetic Association (IDA) to emphasise the critical role of nutrition in promoting public health and preventing lifestyle-related disorders. The theme for the year 2026 was “Control of Obesity for a Healthier India – An Action Call from Nutrition Science Professionals,” highlighting one of the most urgent health challenges faced by the nation today.

As part of the celebrations, a guest lecture was organised on 9th January 2026 by Dr. Josyula K. Lakshmi, Professor, PHFI Institute of Public Health Sciences Deemed to be University (formerly Indian Institute of Public Health), Hyderabad, on the topic “Nutrition, Dietetics and Indian Knowledge Systems.”

The lecture focused on lifestyle patterns, the role and impact of food, food constituents, and their adverse effects on health. The speaker also discussed the principles of optimal nutrition, important nutritional indices, and the relevance of traditional Indian dietary practices. An insightful overview of Indian food culture was presented, and the audience was encouraged to adopt food choices that are more Indian in nature for better health and well-being.



# Outreach Program in Zilla Parishad High School

The Department of Biochemistry & Nutrition organised an outreach programme in collaboration with Unnat Bharat Abhiyan (UBA), National Service Scheme (NSS), and Youth Red Cross (YRC) units, BVC, at Zilla Parishad High School, Yapral, Secunderabad, on 9th January 2026 to celebrate Dietetics Day 2026. The programme was conducted as an extension activity for BCNDC III Year students and was designed for 9th standard students of the school.

As part of the programme, students were educated on important topics such as Balanced Diet, My Food Plate, Food Pyramid, Dietary Management for Adolescents, and the significance of physical activity through diet counselling sessions. Under the Nutrition Education Programme, nutritional labelling and nutrition facts were explained using labels from commonly consumed food products. Students were also made aware of the effects of excessive consumption of packed and processed foods high in salt and sugar.

An interactive game titled “Spin & Snack” was conducted to help students understand the nutrient values of various foods in an engaging manner. Overall, the outreach programme was informative and impactful, benefiting a total of 40 student participants.



# SmartBio 2026

The Department of Biochemistry & Nutrition organised a Two-Day Skill Development Workshop titled “Smart Bio 2026: Nourish Your Skills in AI, Nano, Informatics, Biotechniques and Natural Fortification – From Concepts to Practice.”

The programme was inaugurated on 30th January 2026 by Dr. G.S.V.R.K. Choudary, Principal, BVC, in the presence of Dr. S. Padma, Head, Department of Biochemistry & Nutrition, and Dr. K. Anuradha, Head, Department of Microbiology and Coordinator for Life Sciences. In his inaugural address, the Principal emphasised the importance of skill development workshops in enhancing students’ practical knowledge, employability, and overall professional growth. He also encouraged students to make effective use of such valuable learning opportunities.

The workshop featured demonstrations and hands-on training in advanced techniques such as Isolation of Peripheral Blood Monocytes and Analysis of Cell Viability, Immobilization of Enzyme and Cell, Web-Based Tools for Analysis of Genes, Green Synthesis of Silver Nanoparticles and its Applications, AI in Research, and Food-to-Food Fortification.

A total of 41 students from various colleges across the twin cities participated in the programme. The participants were divided into three batches and received practical training in the above experiments, making the workshop highly interactive, skill-oriented, and enriching.



# National Science Day Celebrations

All Departments of Life Sciences, as part of National Science Day (NSD) celebrations, organised a Poster Presentation Competition for students on 27th February 2026, ahead of National Science Day observed on 28th February. The competition was conducted on the theme “Women as Leaders, Innovators and Change Makers in Science, Technology and Innovation.”

As part of the celebrations, on 28th February the Department of Microbiology organized an engaging quiz competition and Project presentations

Students actively and enthusiastically participated by preparing informative and creative posters on eminent women scientists and innovators. Through their presentations, they highlighted the achievements, discoveries, and remarkable contributions of these women towards the growth and development of science and technology. The event served as a platform to recognise the role of women in scientific advancement while encouraging students to develop research, presentation, and creative skills.

The posters were evaluated by Dr. L. Aruna Priya, Department of Chemistry, and Dr. S. Chaitanya Kumari, Department of Microbiology, based on various criteria such as creativity, content accuracy, and clarity of presentation.

Winners:

First Prize: A. Geetika and A. Ananya (BtGC I Year)

Second Prize: B. Evelyn Stella, Jigisha Ravi Naidu, and Hima Vyshnavi (BtMC II Year)



The Faculty of Life Sciences and Physical Sciences in collaboration with IEEE Nanotechnology Council, Hyderabad Section celebrated National Science Day on 27th and 28th February 2026.

The theme of the programme was “Women in Science: Catalysing Viksit Bharat,” underscoring the role of women scientists in scientific advancement and nation building. The programme was inaugurated by the Principal, Dr. G.S.V.R.K. Choudary on the 28th February 2026. Esteemed speakers including Dr. P. Chandra Shekar, MS, MBA, PhD Technical Director and a Principal Project Management Consultant at Ramoji Film City gave a talk on science, technology and innovation to the assembly. The programme was a success with enthusiastic participation of students and faculty.



## Yashoda Hospital Visit

The students of B.Sc. BCNDC III Year, Department of Biochemistry & Nutrition, visited Yashoda Hospitals, Secunderabad, on 3rd February 2026 to gain practical insight into the functioning of a large-scale hospital dietary department. The visit focused on understanding the organisation and management of clinical nutrition services in a healthcare setting.

During the visit, students observed how the department efficiently prepares meals for approximately 3,000 individuals daily while adhering to strict clinical and nutritional standards. The facility follows a systematic approach to food management, with dedicated chambers for storage, cooking, and packaging to ensure quality and safety.

Students were also introduced to rigorous hygiene protocols, including the use of protective headgear and mandatory handwashing practices, which help maintain a sterile and safe environment. Overall, the visit provided valuable exposure to large-scale diet management and its critical role in patient care.



## Club Activity – pHun Fest

The science club activity on 7th February was organized by the Department of Chemistry. Activities and games on chemical symbols, reactions, formulas and other general chemistry related concepts were arranged in order to promote the active participation of the students. This programme conducted in an animated manner facilitated students to better understand Chemistry and at the same time had fun. It helped the students develop quick response, teamwork skills and fostered scientific imagination amongst the students. It was an information and entertainment program.



# A visit to Yes Labs

An educational visit to Yes Labs was organised on 8th September, 2025 for the students to acquire knowledge of contemporary diagnostic techniques and laboratory settings. The visit was undertaken to provide students with a qualitative understanding of the workflow, functions and importance of a modern diagnostic laboratory in the healthcare field.



# Rain water harvesting- SDG program

Rain Water Harvesting activity was organised in the camp from 11th to 15th September 2025 as part of sustainable development goal (SDG) related activity. The activity was taken to spread awareness about the conceptual level of sustainable water conservation and conservation of water matters in the campus. As part of the activity relevant data was collected and mapped for implementation of efficient rain water harvesting. The activity was taken to spread awareness among students about conservation of water and ways to avoid water wastage in context of water scarcity. The activity will result in better groundwater recharge and maintenance cost around the campus by implementing rain water harvesting.



# Workshop- Research Methodology



A workshop on Research Methodology was conducted on 6th December 2025 for final year undergraduate students of Life Sciences. The workshop was conducted to sensitize students regarding research process and to familiarize them with various AI tools that can be helpful in research and academic writing. The workshop covered various facets of research such as identifying research problems, using AI tools in research, thesis writing, research ethics and plagiarism. The students were given some practical exposure on the conduct of systematic and ethics in research in a technologically advanced manner.

## Anti-Leprosy Day



As part of Anti-Leprosy Day observance, a guest lecture was organised on 31st January 2026 by Mr. Mohan Arikonda. The session aimed to create awareness among students about leprosy, its causes, transmission, diagnosis, and available treatment methods.

The lecture provided valuable insights into the spread of the disease, the importance of early diagnosis, and the role of timely treatment in preventing complications and reducing social stigma associated with leprosy. The session was informative and helped students develop a better understanding of public health awareness and disease management.

## Guest lecture on “Medicines of Early India”



On 5th December 2025, a guest lecture on “Medicines of Early India” was conducted by Dr. N. Vijayalakshmi. The lecture highlighted the significance of traditional Indian medicine and explained the relationship between Ayurvedic knowledge and modern health practices. The session provided students with valuable knowledge about ancient medicinal systems and their relevance in today’s world.

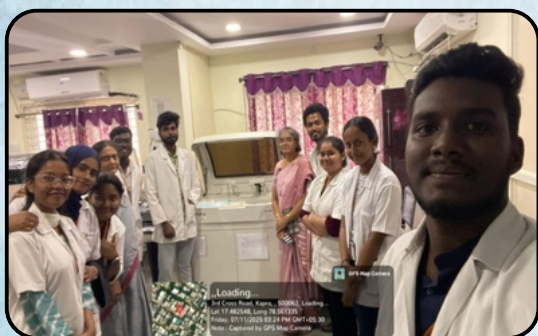
## Outreach Programme



On February 6th, 2026, the Chemistry, Physics and Electronics Departments held an outreach programme with students of ZPHS Malkajgiri Boys School. The goal of the programme was to generate interest in science by showing them some experiments. The experiments shown were heating of copper crystals and the fake blood experiment using  $\text{NH}_4\text{SCN}$  and  $\text{FeCl}_3$ . The programme helped in teaching the students about science in a fun way and was very informative.

## Internship Report

The Department of Biochemistry & Nutrition, Bhavan's Vivekananda College, organized a Short Internship Programme on "Training in Clinical Laboratory Practices" in association with Yes Labs, Hyderabad. A total of 13 students of B.Sc. III Year BINDC attended the internship from 5th to 16th November 2025. The internship aimed to enhance their technical skills in clinical biochemistry through hands-on training in biological sample collection, preprocessing, and understanding pre, post-analytical and analytical variables, along with exposure to quality control and assurance practices.



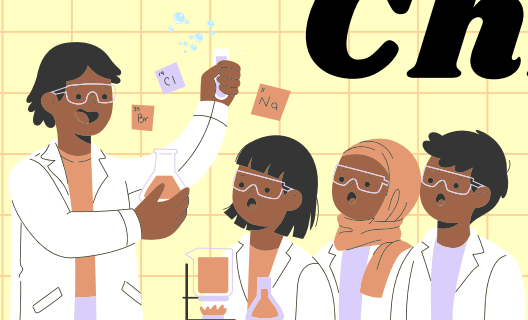
## Career Orientation

The Department of Biochemistry & Nutrition has organized a Career Guidance Program on life sciences as a part of the two-day skill development workshop for undergraduate students of different colleges in Hyderabad.

The session was delivered by Dr.S.Vanitha Assistant professor, Department of Biochemistry & Nutrition. She created awareness about career prospects in research, industry and academia. The session aimed to provide awareness about diverse career opportunities available in the field of life sciences and to guide students in planning their professional paths. A total of 41 Students attended the session.



# ***Lab Chronicles***



# DEPARTMENT OF MICROBIOLOGY

***Isolation and Characterisation of Probiotic properties of Saccharomyces boulardii isolated from Artisanal sources.***

***Dr Shalini Rachel, V. Srinithya , V. Sanjay, S. Sai Neeraj***

Working on this research project has been a really wonderful experience for us. Investigating how probiotic strains interact with isolated proteins required a high level of precision and patience, especially during the isolation and digestion phases. It wasn't always easy, but seeing the final result align correctly made all the hard work worth it. We are sincerely grateful to our guide, whose expertise and constant encouragement was important throughout this process. Her support gave us the confidence to present our findings, leading to the proud achievement of winning 2nd Prize at the ICMIC'26 international Conference. This journey has truly inspired all of us for our future academic pursuits.



# Production of Bioethanol

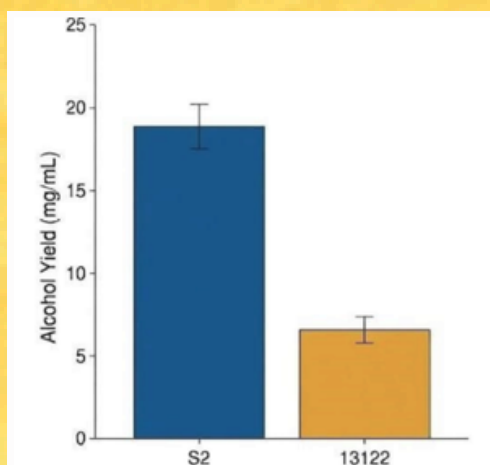
*Dr Shalini Rachel, Lakshmi Prasanna, Anantha Lakshmi, Shiva Teja*

We would like to share our experience of working on the research project on bioethanol production. This project was carried out by a team of three members, and it was a very meaningful and collaborative experience for all of us. We worked together in collecting information, understanding the concepts, and preparing the project.

Through this project, we learned about the importance of bioethanol as a renewable and eco-friendly fuel. We also gained knowledge about the fermentation process and the role of microorganisms in ethanol production.



**Waste coconut water collected, pure culture of Pichia and bioethanol produced from it**



This project helped us improve our research, teamwork, and presentation skills. We are very happy to share that our project was awarded 2nd prize at St. Francis College. This achievement motivated us and made our efforts more meaningful. We sincerely thank you, Ma'am, for your guidance and support throughout the project. Your encouragement helped us complete our work successfully. Overall, this project was a great learning experience and increased our interest in biotechnology.

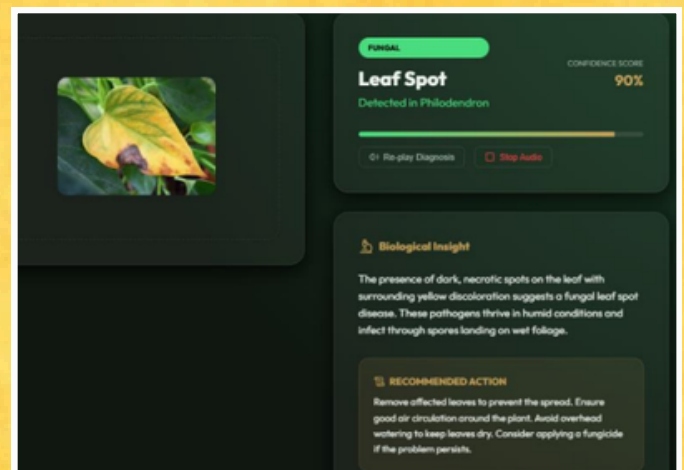


# AI-Driven Detection of Plant Diseases and Nutrient Deficiencies Using Machine Learning

**Dr S Chaitanya Kumari, G. Satya Tarun Sriyamsu, Panja Gowthami, Sayali Jadhav, D. Bhavani**

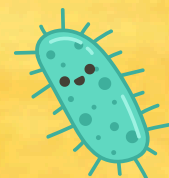
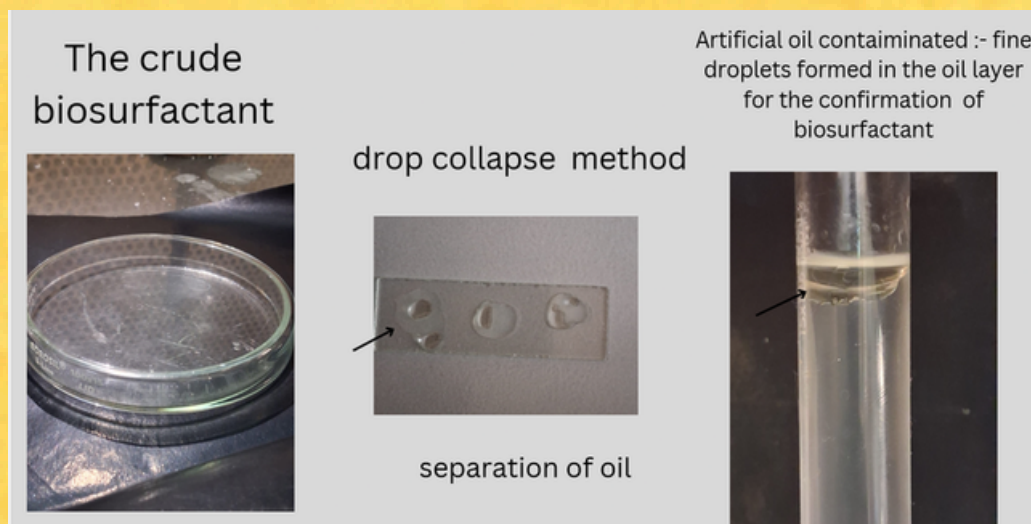
During the course of this project, we gained a valuable opportunity to integrate biological sciences with modern computational techniques such as Artificial Intelligence and Machine Learning. Initially, understanding the interdisciplinary nature of the project was challenging, particularly in bridging concepts from microbiology with deep learning models; however, as the project progressed, we developed strong analytical thinking and problem-solving skills. We learned to work with real-world datasets of plant leaf images, apply machine learning models including CNN, VGG-16, Xception, and ResNet, perform image preprocessing and data augmentation, and evaluate model performance using metrics such as accuracy, precision, recall, and F1-score.

This project significantly enhanced our technical skills in Python, TensorFlow, and PyTorch, while also strengthening my understanding of plant pathology. One of the most valuable insights I gained was recognizing how AI can contribute to sustainable agriculture by enabling early disease detection and reducing crop loss. We sincerely thank our guide and the institution for their continuous support.



# Isolation & Screening of Bacteria for Biosurfactant Production

*Dr S Chaitanya Kumari, Nikhit, Meenal, Jayanthi*



The research project provided us a meaningful hands-on experience in exploring the practical aspects of microbiology, particularly in the isolation and screening of biosurfactant-producing bacteria. Working with soil samples from Kapra Lake allowed us to understand real-world microbial diversity and the importance of selective techniques such as serial dilution, culturing, and biochemical characterization. Identifying the isolate as *Arthrobacter* through morphological and biochemical tests strengthened our laboratory skills and conceptual understanding.

We also gained valuable experience in applying screening methods like oil displacement, drop collapse assay, and emulsification index, which helped us confirm biosurfactant production effectively. The downstream processes such as acid precipitation and extraction further enhanced our technical competence. One of the key learnings from this project was recognizing the environmental significance of biosurfactants, especially in oil spill remediation and wastewater treatment. Overall, this project improved our experimental skills, teamwork, and scientific thinking, making it a highly enriching academic experience.



# DEPARTMENT OF CHEMISTRY

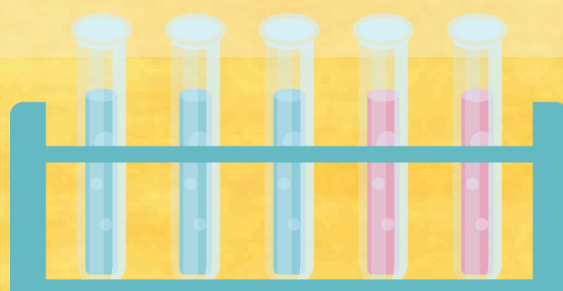
## *Sustainable Synthesis of Multi-Purpose Bioethanol*

*Dr. Mary Nygi Kurian, Sakshi Kulkarni, Srivalli Yanamandra, Samridhi Thrigulla, Sellem Koteswar Rao Keerthana*



The project on converting “waste to wealth” through the sustainable production of bioethanol was a highly rewarding and enriching experience. It provided students with valuable practical exposure to eco-friendly research approaches and the importance of renewable energy solutions.

The supportive laboratory environment greatly contributed to the successful completion of the project objectives within the stipulated time. Working on this project as part of the final year curriculum proved to be an excellent decision, as it offered real insight into the professional research environment and the systematic methods followed by scientists in solving real-world challenges.



## Green Synthesis Innovations: Herbal Mosquito Repellent Spray, Eco-Friendly Soap Production and Natural Textile Dyes

Dr. Mary Nygi Kurian, G. Kruthika, Y. Manasa Reddy, N. Karthik, B. Shiva Teja Goud, K. Rahul Teja Reddy

The first component is a Herbal Mosquito Repellent Spray  
A plant-based mosquito repellent spray was developed using *Ocimum sanctum* (Tulasi) leaves. The extract was prepared using distilled water as a safe and eco-friendly solvent, avoiding harmful chemicals. Natural carriers such as glycerin, coconut oil, and camphor were added to enhance effectiveness and stability. Phytochemical screening confirmed the presence of bioactive compounds like alkaloids, flavonoids, phenols, terpenoids, tannins, and saponins, which contribute to its mosquito-repelling properties, making it a safer alternative to synthetic repellents.

The second component involves production of Eco-Friendly Herbal Soap

An herbal soap was formulated using natural ingredients including neem, aloe vera, coconut oil, olive oil, and lavender oil through a controlled saponification process. The product was evaluated using various physicochemical parameters such as pH, free alkali content, total fatty matter (TFM), chloride content, and foam stability. The results indicated that the soap is mild, skin-friendly, and effective for cleansing, while also being free from harsh chemicals commonly found in commercial soaps.

The third component is focused on The Natural Textile Dyes  
Eco-friendly dyes were prepared from food waste materials like onion peels, pomegranate peels, tea waste, and spinach, promoting waste utilization. Extraction was carried out using water as a green solvent. The dyes were then applied to cotton fabrics using mordants such as alum, iron, and vinegar to improve dye fixation. The fabrics showed good colour absorption, uniformity, and satisfactory fastness, demonstrating that natural dyes can serve as sustainable alternatives to synthetic dyes in textile applications.



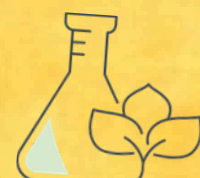
## ***Method Development and Validation of Dorzolamide HCl Using UV Spectrophotometer***

This project was undertaken to develop and validate an analytical method for the estimation of Dorzolamide HCl using a UV Spectrophotometer. The study focused on establishing a simple, accurate, and reliable method for quantitative analysis of the drug using standard validation parameters.

As a group of seven students, the project significantly enhanced our practical knowledge and laboratory skills. We gained valuable hands-on experience in the operation of analytical instruments, preparation of standard and sample solutions, and conducting validation studies.

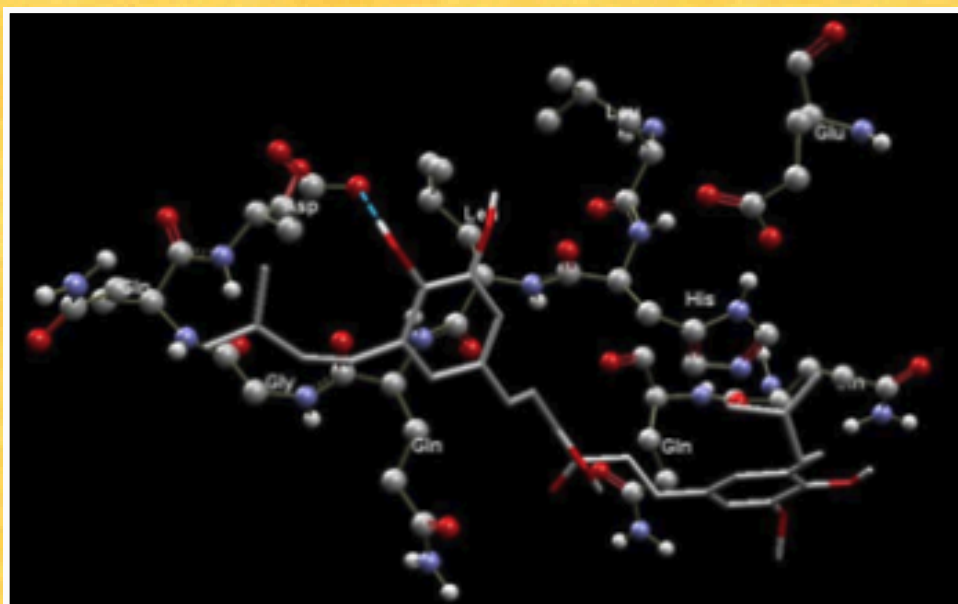


The project also helped us understand the real-time applications of theoretical concepts such as UV spectroscopy, calibration techniques, accuracy, precision, and method validation. Overall, it served as an enriching learning experience and strengthened our confidence in pharmaceutical and analytical research practices.



## ***In silico studies of curcumin derivatives against inflammatory and oxidative stress related proteins***

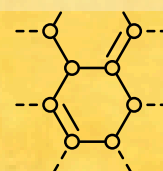
***Dr. L. Arunapriya, Juveria Fatima, Kanika Mary Jessica, Areena Tabassum***



This project focused on multi-target docking studies to evaluate how selected ligands interact with multiple protein targets using computational approaches. The work involved the preparation of protein and ligand structures, followed by docking simulations to predict their binding behaviour and potential biological interactions.

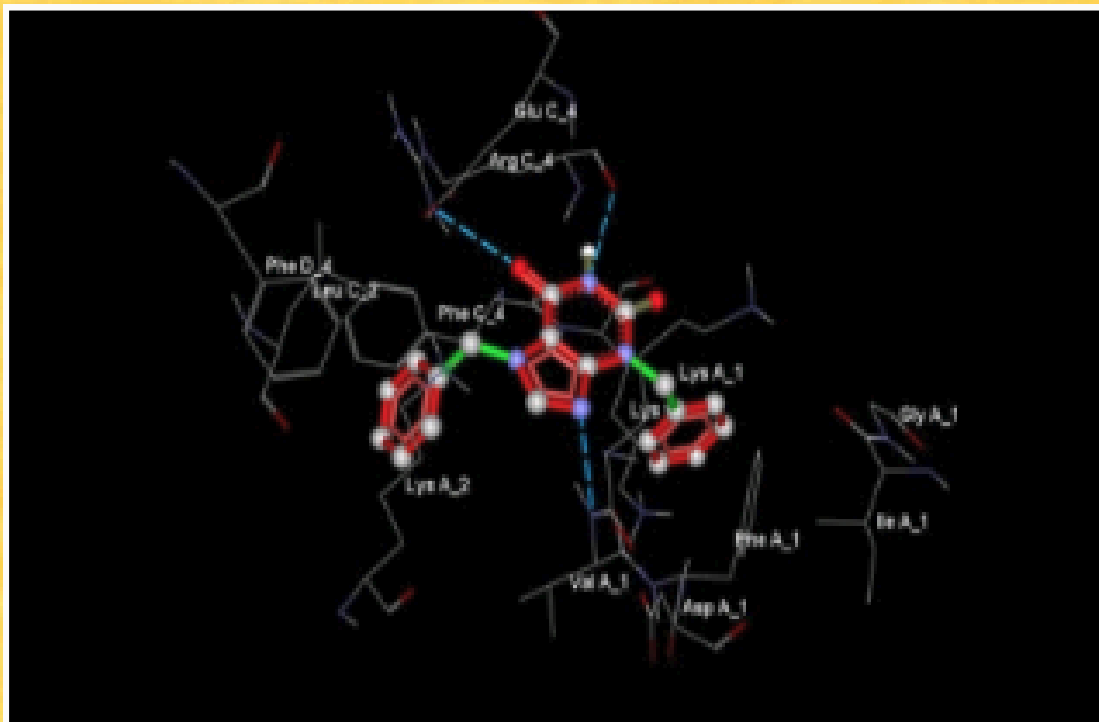
Through the study, binding affinities and interaction patterns were analysed to identify the strength and specificity of ligand-protein interactions. The project provided valuable insight into molecular recognition, binding site specificity, and the role of scoring functions in predicting favourable interactions.

Overall, the project enhanced our understanding of computer-aided drug design, molecular modelling, and bioinformatics tools, while also developing our analytical and research skills in the field of computational biology.



## ***In Silico Molecular Docking Studies of Selected Purine Derivatives as potential inhibitors of plasmodium falciparum HGXPRT***

***Dr. L. Arunapriya, Y.Vaishnavi, B.Ankitha, Ch.Prem Kumar, A.Rishik,P.Reethika***



**Figure 3.2:** 3D binding pose of best compound (3,7-dibenzyl derivative)

This project focused on the molecular docking of selected purine derivatives with target proteins using Molegro Virtual Docker. The study aimed to analyse the interaction of the compounds with protein active sites and evaluate their potential as bioactive molecules in drug discovery.

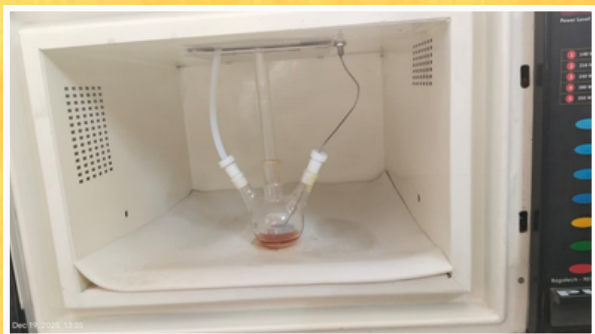
Through docking simulations, students explored how the selected ligands bind to specific target proteins and studied the nature of these molecular interactions. The project generated keen interest by demonstrating the relationship between chemical structure and biological activity.

Overall, the work provided valuable understanding of the significance of molecular docking in modern drug discovery and enhanced practical knowledge of computational tools used in pharmaceutical and biochemical research.



## ***Study of Synthesis and characterization of Zn Schiff base Metal Organic Framework***

***Ms.Prerana Loomba, Pooja Rahul Deshpande, Udaya Suriyan  
Jahnvi, Shaik Haseena, Varsha Rani***



This project focused on the microwave-assisted synthesis of Zn-Schiff Base Metal Organic Frameworks (MOFs) with the objective of designing and developing a Zn-based MOF using an efficient and modern synthetic approach. The study provided valuable exposure to advanced materials chemistry and the applications of coordination compounds in research.

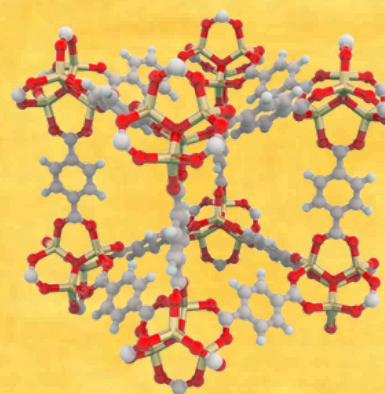
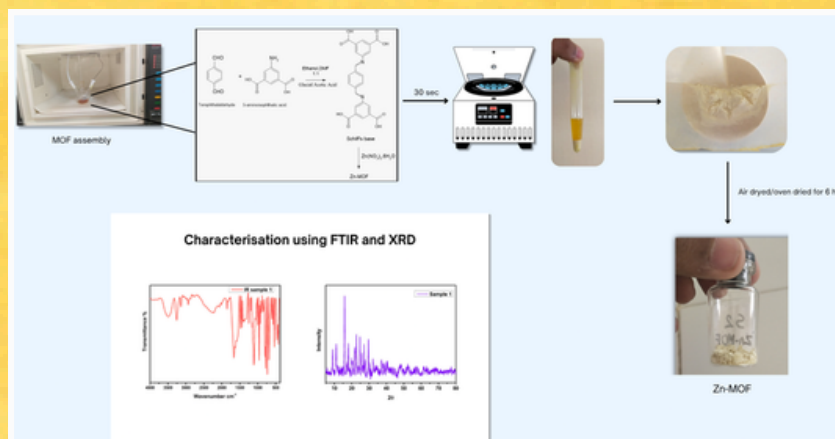
Working on this project was a rewarding experience, as it allowed us to learn collaboratively and develop strong teamwork skills. Since it was our first research project, we initially faced challenges in understanding certain concepts and experimental procedures. However, with the constant guidance and support of our in-charge teacher, we were able to overcome these difficulties successfully.

Overall, the project enhanced our practical laboratory skills, strengthened our conceptual understanding, and gave us confidence in carrying out scientific research as a team.



## Study of Synthesis and characterization of Zn Schiff base Metal Organic Framework

*Ms. Prerana Loomba, M. Samyameendra, Joshua Parnandi, Shayonee Majumder, T. Sri Anu, Mohammed Imran.*



As part of the final year project, students worked on the synthesis of a stable Metal–Organic Framework (MOF) using a microwave–assisted method. The project aimed to study the crystalline nature of MOFs while adopting sustainable and efficient techniques for synthesis.

The work provided valuable exposure to advanced materials chemistry and helped students understand the significance of MOFs in modern scientific research. It also highlighted the advantages of microwave–assisted synthesis as a rapid and eco–friendly approach.

The students expressed gratitude to their project guide, Ms. Prerana Loomba, for her constant support and guidance throughout the project. Her mentorship helped them understand the chemistry involved and successfully complete the work. Overall, the project was an enriching and memorable learning experience for the entire team.



## ***Studies on Synthesis and Characterisation of p-Toluene Sulphonic Acid Doped Polyaniline and Nano Zinc Composite***

***Dr. Shruthy, S. Shirisha, T. Varshitha, T. Shravani, J. Manisha, Nikki Kumari, Dikshant Sahoo, G. Venu, D. Laxmi Deepak***

This project provided valuable learning experiences in the fields of polymers, conducting materials, and nanocomposites. Through the study, students gained a deeper understanding of both theoretical concepts and their practical applications in modern materials chemistry.

The project offered hands-on experience in important laboratory techniques such as synthesis procedures and characterization methods, helping students connect classroom knowledge with real research practices. It also made the subject more engaging and strengthened practical skills, analytical ability, and confidence in chemistry.

Overall, the experience inspired greater curiosity to explore advanced topics in materials science and nanotechnology, while encouraging scientific thinking and collaborative learning.

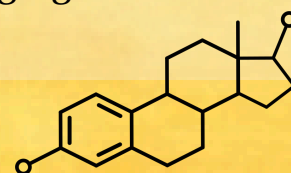


Figure 1.8 : Synthesis of PTSA doped Polyaniline



# DEPARTMENT OF GENETICS AND BIOTECHNOLOGY

## *Estimation of Casein Protein from Various Milk Samples and Development of a Casein-Based Bio-Adhesive.*

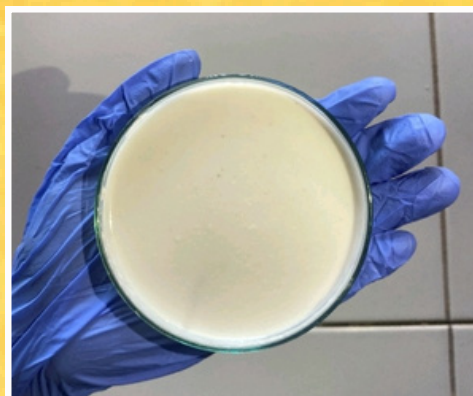
*Dr. B Kalpana, Roshni Gazalamin, Taniya Ghosh, P. Devi Prasad, N.Vishnu Priya,  
Rushita Settipalli.*

Our project focused on estimating casein protein from different brands of milk and using it to develop a casein-based bio-adhesive. We compared multiple milk samples, identified the one with the highest casein content, and used it for extraction and adhesive preparation. The process was very hands-on from sample preparation and protein estimation to testing, helping us understand how a common component like milk can be turned into a useful, sustainable product.

Our mentor, Kalpana ma'am, played an important role in this journey, she guided us in choosing the right project and supported us throughout. She gave us the freedom to explore while stepping in whenever we were stuck, and was very approachable, which made it easy to clear our doubts.

While working on the project, we went through several trials with different ideas before finalizing this one, which was initially confusing but helped us understand what was practical. Even after that, much of our work involved trial and error. Some days went smoothly, while others were frustrating when results didn't match expectations. But that's where most of the learning happened. We worked as a team, supported each other, and gradually improved our approach.

Overall, the experience was a mix of stress, curiosity, and satisfaction. Despite the challenges, it didn't feel like just an academic task it felt real. In the end, it helped us build patience, confidence, and a better understanding of practical applications, making it a memorable part of our final semester.



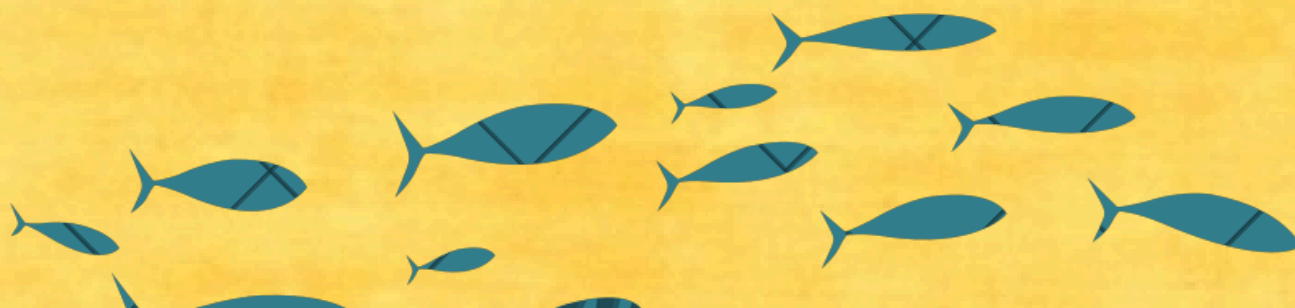
## ***Waste to Wealth approach – Chitosan and CNC-based Bioplastic Films for Green Sustainable Packaging***

***Dr Sushma Patkar, C.S.Srinidhi, G.Taruni Sree, T. Sahasra, S. Taruni & Ch. Harika***

Our project focused on a “waste-to-wealth” approach, converting agromarine waste into sustainable bioplastics. The entire journey was both engaging and fun, with each day bringing new learning experiences. Each day was exciting for us as we worked to figure out and find which concentrations would work and which would fail, making the process highly exploratory and hands-on. From collecting raw materials directly from vendors to carrying out extraction and fabrication processes, every stage contributed to strengthening our practical understanding of sustainable biotechnology.

Our mentor was a constant supporter who believed in us at every step of the process, encouraging us to explore and learn independently. Beyond the technical work, the experience was filled with collaboration, problem-solving, and continuous learning. We were also humbled to receive several best paper and poster awards for this project, which further motivated us in our project journey. We had the valuable opportunity to receive guidance from a Chief Scientist at CSIR-Indian Institute of Chemical Technology, who assisted us with FTIR analysis and interpretation of our results. Additionally, we collaborated with Osmania University for SEM analysis, which further supported the characterization of our bioplastic samples.

Overall, this project enhanced our technical skills, teamwork, and research perspective, making it a highly rewarding and memorable experience.



## **FRYER TO FIRE: THE SYNTHESIS AND ENTHALPY ANALYSIS OF FUELS DERIVED FROM WCO & WEO**

**Dr. S. Nagamanju, Priyanka, Nandini, Keerthi Raj, Vritika**



This project was a good learning experience. We have learnt more on literature work, laboratory techniques, and sustainable developmental goals. Through this project, I gained a lot of knowledge of biodiesel production using transesterification and to know much energy present enthalpy test as well.

We have made the second generation oil. With waste cooking oil and engine oil as followed the waste to wealth concept. Team work and with the help of our mentor we have done this well.

One of the most interesting parts was performing the transesterification process and observing how waste cooking oil and engine oil could be transformed into biodiesel. It made me realize how science can directly contribute to solving environmental problems. Conducting the enthalpy test and comparing fuel efficiency gave me practical exposure beyond theoretical knowledge.

The good part of the project was we had a great mentor Dr. S Nagamanju Ma'am to always push us, support us and helped us, whenever we were falling apart. It was her pushing us to our great potential and this project came out well.

Overall, this project has been a meaningful learning experience—one that not only enhanced my academic understanding but also shaped my confidence, teamwork, and perseverance.

Overall, this experience strengthened interest in environmental biotechnology and research field as well.



## ***From Trash to Treasure***

**Dr.S.Nagamanju , N. Shishir, Aditya, C. Neroop, Sai Charan,  
L. Rohith**

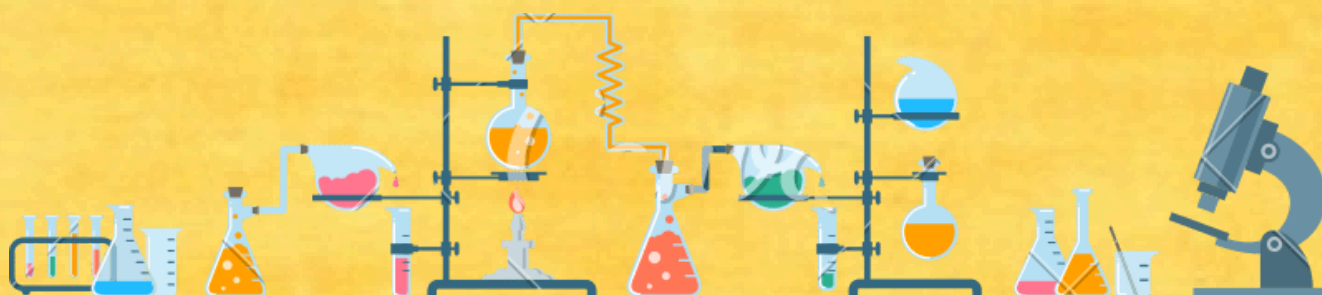
Working on the final year project “From Trash to Treasure” was a memorable and enriching experience for the students. The project taught valuable lessons in patience, teamwork, dedication, and perseverance while giving practical exposure to research work and experimentation.

One of the major challenges faced during the project was patiently waiting for the revival of *Aspergillus niger*, which tested the team’s persistence and problem-solving abilities. Like every group project, there were differences of opinion and occasional conflicts, but these moments ultimately strengthened bonding among the team members and motivated everyone to work towards successful completion of the project.



The constant support and encouragement of the project guide played a vital role in making the work smoother and less stressful. With proper guidance, students were able to complete the project successfully while gaining valuable knowledge and practical experience.

Above all, the project created unforgettable memories and friendships that the students will cherish for a lifetime.



## DEPARTMENT OF BIOCHEMISTRY AND NUTRITION



### *Investigation into the Dose-Dependent Inhibitory Effects of Alcoholic Beverages on Hepatic Transaminase and Phosphatase Activities*

*Dr. S. Vanitha, Meher Aasrita, K. Varsha, S. Sommya, S. Pravalika, Ch. Abino & M. Asmitha*

Working on this project as a group was a unique and enriching experience, with each member contributing to different aspects such as liver extract preparation, enzyme assays, and spectrophotometric analysis. The interdependence of tasks highlighted the importance of teamwork and coordination throughout the study.

The results were particularly interesting, as ethanol and whisky showed a strong inhibitory effect on SGOT and SGPT activity, while rum and vodka produced moderate effects. Toddy and brandy demonstrated notable activity against ACP, which was unexpected and sparked further discussion. A key part of the learning experience was collectively analysing the data, discussing variations, verifying calculations, and applying ANOVA to establish statistical significance. Beyond the scientific outcomes, the project strengthened collaboration, critical thinking, and the ability to work effectively as a team, ultimately providing insight into real-world scientific research practices.



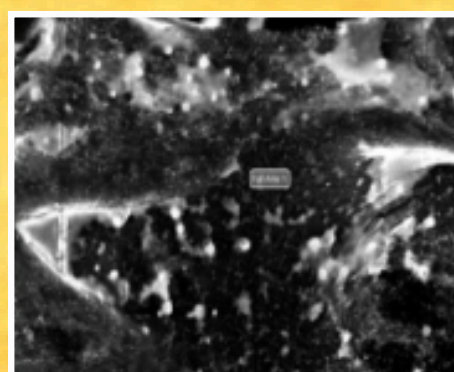
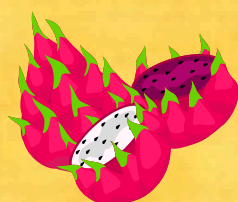
## ***Phyto-fabrication of Silver Nanoparticles Using Dragon Fruit Pulp and Comparative Biochemical Evaluation, Antioxidant profiling, Characterization, and Application Studies.***

***Dr. S. Vanitha, P. Hemalatha, M. Gopal Reddy, K. Jasmitha, Madhu, M. Jayanthgiri***

Working on this project was both exciting and challenging, as we explored the potential of dragon fruit for its rich nutrients and antioxidant properties. The initial stages of sample preparation—cleaning, drying, and powdering—taught us patience and attention to detail. Conducting biochemical assays for carbohydrates, proteins, amino acids, and antioxidants provided valuable hands-on laboratory experience.

A key highlight of the project was the green synthesis of silver nanoparticles using dragon fruit extracts. Observing the colour change and confirming nanoparticle formation through techniques such as UV–Vis spectrophotometry, SEM, FTIR, and EDX was particularly rewarding. Further applications, including dye degradation and seed germination studies, demonstrated the practical environmental and agricultural significance of our work.

Overall, the project enhanced our confidence, teamwork, and practical skills, while showing how a simple natural resource can be transformed into advanced scientific applications with real-world benefits.



What's on  
your mind



# GLOW-IN-THE-DARK PLANTS

## WHEN PLANTS BECOME LAMPS: THE SCIENCE BEHIND GLOWING GREENERY

### Introduction

Imagine walking through a garden at night where the flowers softly glow — no lamps, no electricity, just living plants shining like fireflies. Thanks to synthetic biology, this idea is becoming real. Scientists have created plants that glow on their own, continuously, without chemicals or batteries. This breakthrough blends art, biology, and sustainability, opening new possibilities for lighting and environmental design.

### Borrowing Light from Nature's Glow-Makers

The inspiration came from naturally glowing fungi. In 2020, researchers studying the mushroom *Neonothopanus nambi* uncovered the complete biochemical pathway behind its bioluminescence.

**The key insight:** fungi use caffeic acid, a molecule already found in plants, to produce the glowing pigment luciferin.

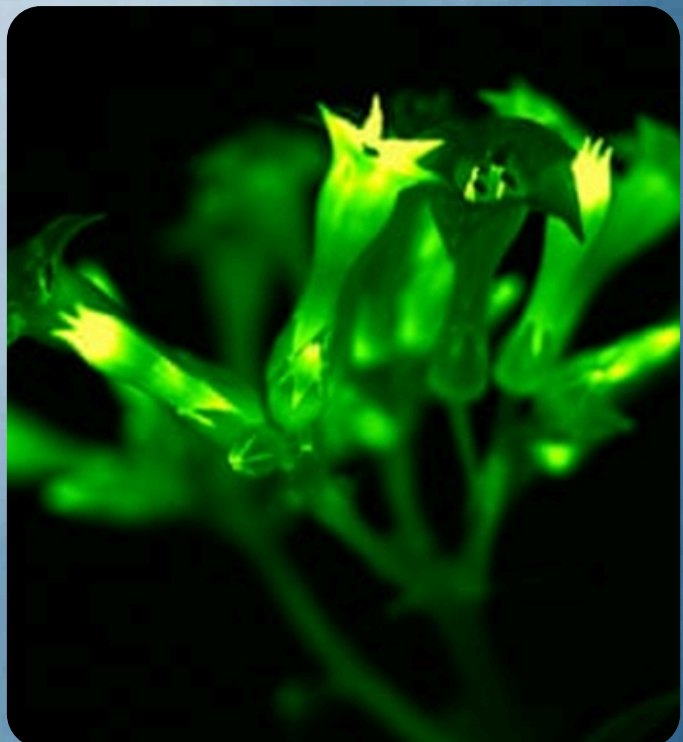
By inserting just four fungal genes, scientists enabled plants to:

- Convert caffeic acid into luciferin
- Emit visible green light
- Recycle luciferin in a continuous loop

This led to the world's first truly self-sustaining bioluminescent plants.

### The First Generation of Glow-Plants

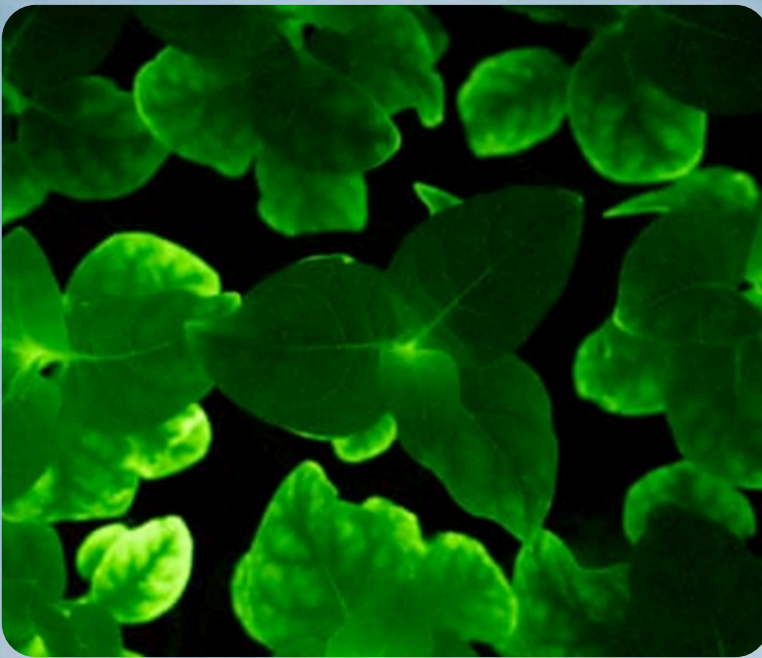
Engineered petunias and chrysanthemums were the first plants bright enough to see in darkness. Researchers optimized the system by enhancing hispidin formation, improving enzyme efficiency, and using the full fungal gene set. A biotech company even released the Firefly Petunia, the first commercial glow-plant.



## Real-World Applications: From Decor to Streetlights

Glow-plants already appear in decorative gardening, but their potential is far greater.

1. Sustainable Lighting
2. They could reduce dependence on electrically powered outdoor lights.
3. Living Environmental Sensors
4. Glow intensity can change in response to pollutants, toxins, pathogens, or stress.
5. Glowing Street Trees
6. A long-term vision is to engineer trees bright enough to replace streetlights.



### Why It Matters

Bioluminescent plants represent a fusion of sustainability and innovation — natural, self-powered light with zero emissions and aesthetic appeal.

As Light Bio's CEO said, **"Light connects to life, spirit, and joy."**

Bioluminescent plants bring that light into everyday spaces.

### Challenges & Ethical Considerations

Key concerns include low brightness, ecological risks, genetic stability, regulation, and production cost.

### The Future Is Bioluminescent

Ongoing advances aim to create brighter colours, glow-based pollutant detection systems, and eventually bioluminescent trees. We may be far from glowing forests, but indoor "living lamps" and glow-flower kits are already here.

Synthetic biology proves that light doesn't have to be wired — it can grow.



**G.TARUNI SREE**  
**Bsc.BtGC III**

# SCIENCE BEHIND MANIFESTATION

Manifestation has become popular in recent years, especially through social media, self-help books, and videos that say you can attract anything you want just by thinking about it. While the idea often sounds magical, the truth is that manifestation has real scientific explanations, but they work through the mind and body, not through supernatural forces. Scientists and psychologists agree that thoughts do not send special vibrations into the universe, yet the way you think does influence how you feel, how you act, and what you notice in your environment. This is where manifestation becomes more practical and grounded in reality.

## 1. Your Brain Changes With Repeated Thoughts (Neuroplasticity)

One of the most important scientific ideas connected to manifestation is neuroplasticity, which means that your brain changes based on your thoughts and experiences. When you imagine yourself achieving a goal, your brain activates similar areas to when you actually take action. This is why athletes often use mental rehearsal, a technique covered in articles by Scientific American, to improve their performance. When you visualize something often, your brain forms stronger pathways that make you more confident and more prepared to take real steps toward that goal. In this way, visualization and manifestation techniques help your brain support your ambitions.

## 2. The Reticular Activating System (RAS): Filtering Your Reality.

The RAS is a network of neurons in the brainstem responsible for filtering sensory information. It determines what you notice and what you ignore

- When you focus on a specific intention like "I want to find business opportunities" your RAS becomes biased toward noticing information that aligns with that intention.
- Many positive psychology articles, including those in Harvard Business Review, explain how focus directs attention and behavior.

This does not attract opportunities; it reveals them.

Your brain begins to pick up cues, patterns, and options that were previously invisible.

Example:

When you decide to buy a red car, suddenly you notice red cars everywhere. They were always there; your RAS simply wasn't tuned to them.

## 3. Expectations and the Placebo Effect

Manifestation is also influenced by the placebo effect and the power of expectation. Scientific studies featured in The New York Times show that when people believe something positive will happen, their brain releases chemicals like dopamine that improve motivation and mood.



This doesn't mean belief makes things appear out of thin air, but it does mean the body responds physically to positive expectations. If you genuinely believe that good things are coming, you naturally feel more confident and take more action, which increases the chances of positive outcomes.

#### 4. Cognitive Behavioral Therapy (CBT)

Explains how thoughts shape emotions and emotions shape actions. If you constantly think negative thoughts such as "Nothing good ever happens to me," you are more likely to withdraw, avoid challenges, and miss opportunities. But if you repeat positive thoughts or affirmations like "I am capable of success," your emotions shift in a healthier direction. This leads to more productive behavior, such as trying new things, talking to people, and putting effort into your goals. Manifestation works not because the universe sends you what you want, but because your mindset influences your behavior.

#### 5. Social and Behavioral Activation

When someone believes they are manifesting something, they often:

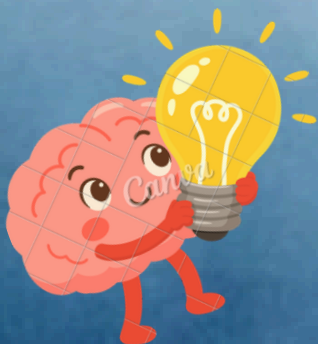
- talk about their goals more
- seek advice
- network organically
- take micro-actions daily

Behavioral activation doing small, consistent actions is a highly validated psychological strategy for building success habits. Much of what people attribute to "the universe responding" is actually their own behavior changing, often in subtle ways.

Manifestation feels effective because practices like journaling, scripting, and vision boards keep your goals active in your mind. Studies reported in Forbes and Psychological Science show that people who write down their goals are more likely to achieve them, mainly because writing and visualizing help the brain stay focused and motivated. When you revisit your goals daily, you subtly start taking actions that move you toward them.

One key principle is to manifest in the present tense saying "I have glowing skin" or "I am wealthy," rather than "I want" or "I will." This helps your subconscious absorb the message and align your behavior with it.

Manifestation doesn't work through magic; it works through psychology and neuroscience. When your thoughts, emotions, and actions point in the same direction, you create the mental environment needed for real progress. What many call "the universe responding" is often their own brain becoming clearer, more positive, and more aligned with their goals



E. Vaishnavi  
Bsc.BTGC 3

# "WILL MEN DISAPPEAR? THE QUIET EXTINCTION OF THE Y CHROMOSOME"

## Is the Y Chromosome Dying or Transforming?

For years, we've been told that the Y chromosome is slowly vanishing, shrinking from nearly 1,600 genes millions of years ago to barely 50 today. At first glance, this sounds like the beginning of an extinction story. But my view is different. What if the Y isn't dying but stabilizing? Nature often removes what is unnecessary to protect what is essential. The genes that remain on the Y are incredibly efficient, tightly conserved, and vital for male biology. Instead of calling it weak, maybe we should call it optimized. The Y chromosome might not be collapsing, but rather evolving into a precise, specialized toolkit.

## If Men Vanish, Does Humanity Vanish Too?

Here's a bold question: what if the disappearance of the Y eventually leads to a world without biological males? Would human reproduction collapse? Surprisingly, I don't think so. Evolution has already proven this. Some moles, spiny rats, and rodent species have completely lost their Y chromosome, yet males still exist. How? Their genomes rewired themselves:

- Other chromosomes adopted sex-determining roles
- New regulatory circuits evolved
- SRY-like functions shifted to new genetic locations

Nature does not like empty spaces. When something disappears, something else steps in. If the Y ever vanished in humans, biology would likely find an alternative route to create males



### **Two Women. One Baby: A Future without Biological Fathers?**

Another perspective I find fascinating is the possibility of reproduction without men. With modern biotechnology, combining two X chromosomes from two females to create a female embryo isn't impossible; it's a direction that science is already exploring in animal studies. In the absence of males, this approach could theoretically sustain the population of daughters.

And if needed, biotechnology might one day manufacture an artificial SRY gene or trigger male development through engineered chromosomes. It's wild, but every breakthrough starts as a wild idea

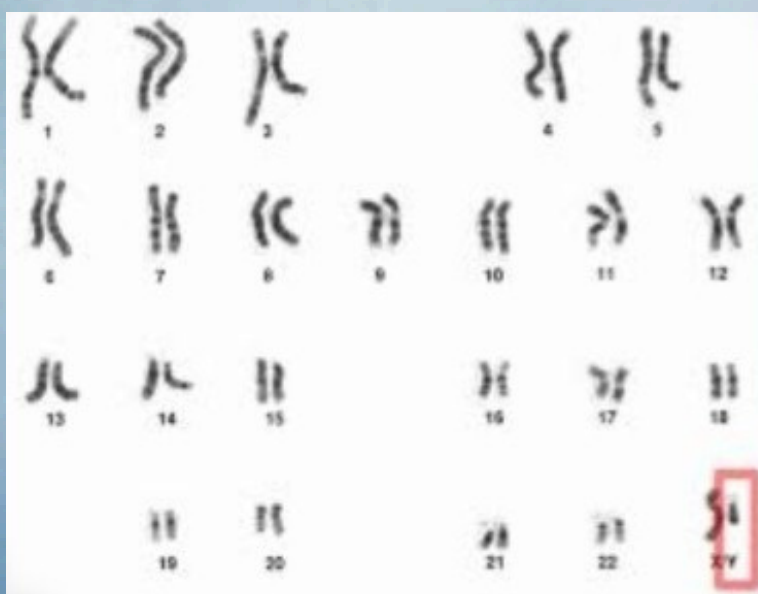
### **Biology Rewires Itself and Biotechnology Just Speeds It Up**

For me, the extinction of the Y chromosome is not a doomsday story. It's a reminder of how flexible life truly is. Even if the Y disappears someday, humans will not. Biology constantly adapts, right down to the genetic circuitry that decides who becomes male or female. And in the age of CRISPR and synthetic genomes, we're no longer just passive observers.

If evolution lets go of the Y, biotechnology can easily step in by moving SRY to another chromosome, building an artificial Y, or designing new pathways for sex determination.

### **My Takeaway**

The possible extinction of the Y chromosome isn't the end of men, or the end of humanity, it's simply the next chapter in an ongoing evolutionary story. Whether nature rewires itself or we choose to rewrite it through biotechnology, one thing is clear: our species is far more adaptable than one shrinking chromosome.

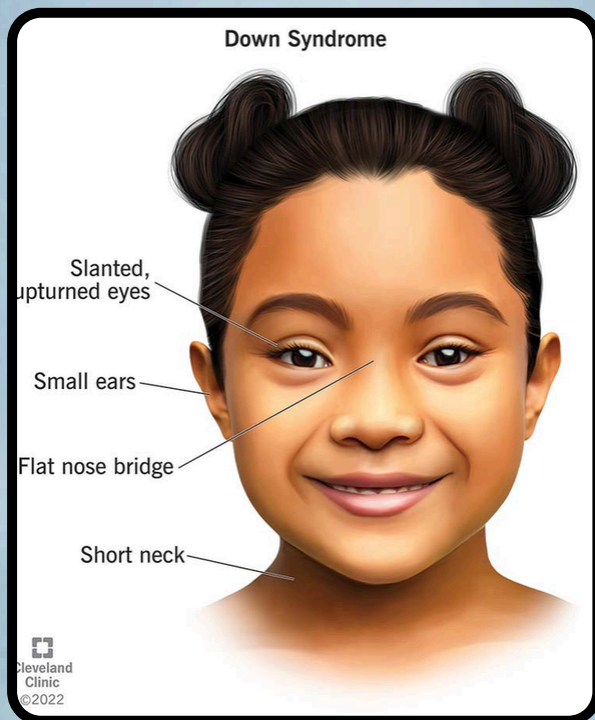


C.S. Srinidhi  
Bsc.BtGC III

# DOWN SYNDROME

## Introduction

Down syndrome is a genetic condition caused when an unusual cell division results in an extra full or partial copy of chromosome 21. This extra genetic material causes the developmental changes and physical features of Down syndrome. The term "syndrome" refers to a set of symptoms that tend to happen together. With a syndrome, there is a pattern of differences or problems. The condition is named after an English physician, John Langdon Down.



## Symptoms and Causes

Down syndrome causes physical, cognitive and behavioural symptoms. Symptoms and their severity are different from person to person.

The main symptoms are

1. A flat nose bridge
2. Slanted eyes that point upward
3. A Short neck
4. Small ears hand and feet
5. Weak muscle tone at birth
6. Small pinky finger that point
7. One crease in the palm of the hand (palmar crease)
8. Shorter than average height.

## Cognitive symptoms of Down syndrome

The child with Down syndrome may have cognitive development challenges as a result of their extra chromosome. This can cause intellectual or developmental disabilities. Your child's ability to meet developmental milestones, or things that your child can do at a certain age, may differ from other children, including how they:

Walk and move (gross and fine motor skills).

Speak (language development skills).

Learn (cognitive skills).

Play (social and emotional skills).



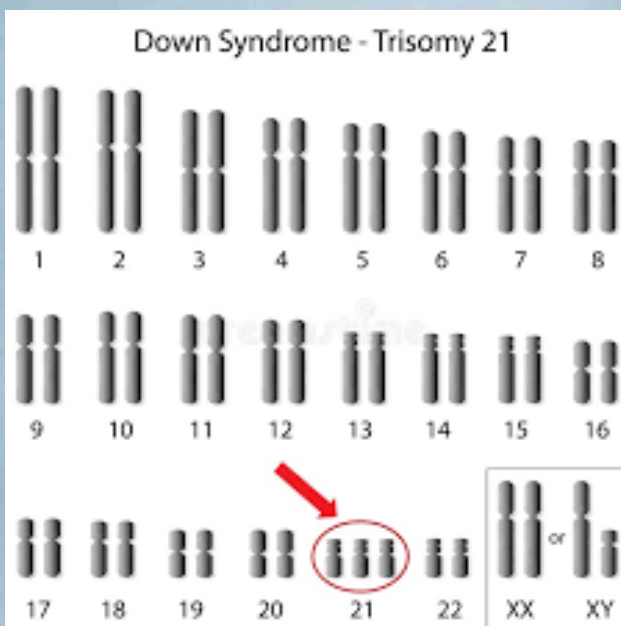
### Detection test

A healthcare provider can suspect Down syndrome during pregnancy with prenatal screening tests. They can also diagnose this condition during pregnancy with diagnostic tests.

### Treatment

There's no cure for Down syndrome, but treatment is available to help your child reach their full potential. Treatment focuses on helping your child thrive physically and mentally. Treatment options could include:

1. Physical or occupational therapy.
2. Speech therapy.
3. Participating in special education programs in school.
4. Treating any underlying medical conditions.
5. Wearing glasses for vision problems or assisted hearing devices for hearing loss.



Rangubhotla Venkata  
Naga Shishir  
Bsc.BtGC III

## DISLIKING CORIANDER – A PREFERENCE OR A GENETIC CHANGE?

The nature of coriander (often called cilantro in the Americans) is a fascinating case study in human genetics and chemosensory perception. For most of the global population, this herb is a bright, citrusy, and essential component of many cuisines and side dishes. However, for an estimated number of individuals across different ethnic groups, it possesses a distinct and often repulsive soapy or buggy flavor that makes it distasteful. This profound difference in experience is largely attributed to specific variations in olfactory receptor genes.

The Chemical analysis: Aldehydes

The core of the issue lies in the herb's chemical profile. The characteristic flavor and aroma of coriander are derived from a group of organic compounds called aldehydes, specifically E-2-alkenals and n-aldehydes (aliphatic aldehydes). These are volatile compounds that release into the air and bind to receptors in the nose and mouth. Critically, these same types of short-chain and unsaturated aldehydes are frequently used in the manufacturing of soaps, detergents, and perfumes, giving these products their "soapy" scent.

When a non-sensitive person eats coriander, they perceive a complex mix of citrus and green, earthy flavors. When a genetically sensitive person eats it, the aldehydes dominate their sensory experience, leading their brain to interpret the flavor as the repulsive, sharp taste of soap.

### The Main Character : The OR6A2 Gene

The most robust genetic evidence points to a single-nucleotide polymorphism (SNP)—a variation in a single DNA base pair—located within the OR6A2 gene. This gene is responsible for coding one of the body's numerous olfactory receptors (the proteins on nerve cells that detect odors).

Individuals who perceive the soapy taste often possess a specific variant of the OR6A2 receptor that is highly sensitive to the odorants of aliphatic aldehydes. This variant is believed to allow the receptor to bind to and detect the soapy-smelling aldehydes in coriander with much higher efficiency than the variant found in non-sensitive individuals. In essence, the olfactory receptor acts like a highly tuned antenna, picking up the aldehyde signals where others might miss them or register them as a much milder component of the overall flavor.

The heritability of this trait is significant, meaning if one parent is sensitive to coriander, their children have an increased likelihood of sharing that experience. The soapy taste of coriander is a clear example of how genetic makeup dictates sensory experience. The presence of the OR6A2 gene variant leads to the hyper-detection of specific aldehydes, the same compounds used in soap manufacturing. This genetic distinction creates two distinct realities for a single herb: a flavorful garnish for one, and an unpalatable, soapy contaminant for the other.

So, do you find Cilantro to be soapy or flavourful?



Srivalli Yanamandra  
Bsc.MGC III

# THE CELL'S SECRET ANTI-AGING MECHANISM:



## “How Lysosomes Clear Progerin”

### **Activating lysosome biogenesis helps alleviate cellular senescence in progeria:**

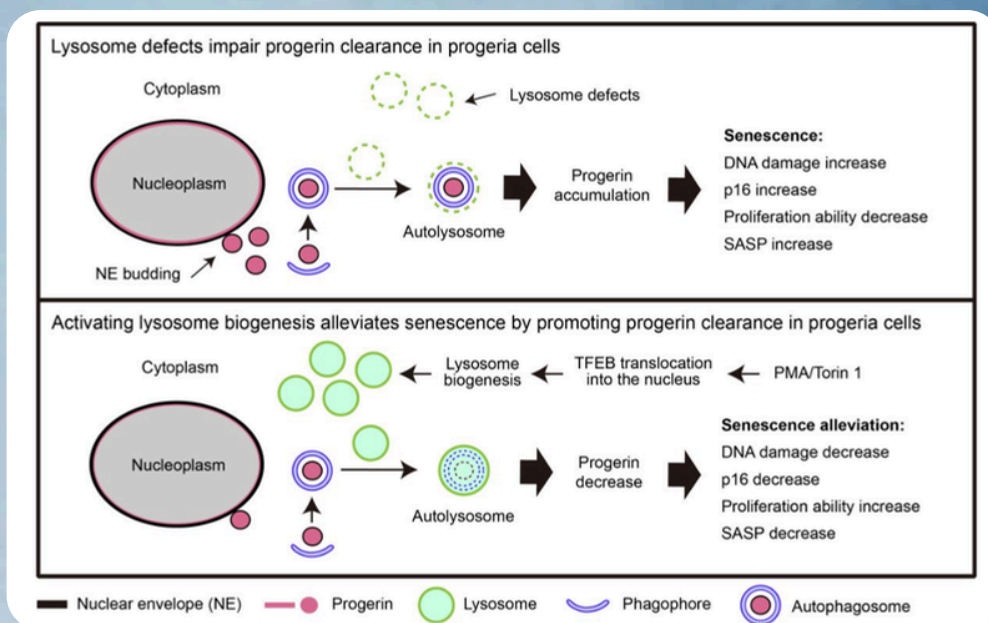
Scientists have uncovered a powerful anti-aging pathway inside our cells: boosting lysosome activity helps clear progerin, the toxic protein responsible for premature aging in Hutchinson-Gilford Progeria Syndrome (HGPS). Their findings suggest that improving lysosome function could also help combat aging-related diseases beyond progeria. HGPS is a rare genetic disorder marked by rapid aging, including early skin wrinkling, hair loss, reduced elasticity, atherosclerosis, and insulin resistance. Nearly 90% of cases are caused by progerin, a defective form of lamin A that deforms the nuclear envelope (NE) and triggers DNA damage, telomere shortening, cell-cycle arrest, and reduced cell proliferation. Importantly, recent research shows that progerin also accumulates during normal aging and in chronic kidney disease (CKD), making it a broader biomarker of cellular decline.

### **Tracking Progerin Through the Cell**

A team led by Professor Chuanmao Zhang (Peking University & Kunming University of Science and Technology) reports in *Science China Life Sciences* that cells remove progerin through a lysosomedependent pathway.



Using immunofluorescence, live-cell imaging, and biochemical assays, they revealed that progerin buds out of the nucleus into the cytoplasm, where it should be degraded through the autophagy–lysosome system. However, HGPS cells show lysosome defects, causing toxic buildup. RNA sequencing from HGPS patient cells confirmed significant downregulation of lysosomal genes, later validated by RT-qPCR and other assays. To counter this, researchers activated lysosome biogenesis by either stimulating protein kinase C (PKC) or inhibiting mTORC1. Agents like PMA or Torin 1 promoted TFEB nuclear translocation, restored lysosome function, enhanced progerin clearance, and alleviated hallmarks of senescence, including DNA damage, cell-cycle arrest, low proliferation, and SASP.



This study not only reveals how lysosomes clear progerin but also strengthens the idea that targeting lysosome activity may be an effective anti-aging strategy for HGPS, CKD, and potentially normal aging. While stimulating lysosome biogenesis shows remarkable potential, long-term activation may disrupt normal protein turnover or stress responses in healthy cells. The current findings are based on cellular models; future in-vivo studies are needed to confirm safety, dosage, and therapeutic feasibility. Still, the approach represents an advanced shift toward treating aging at the cellular damage level rather than the symptom level. In Conclusion, By uncovering how lysosomes eliminate progerin and showing that restoring lysosome function reduces cellular aging markers, this research provides a promising foundation for developing therapies for HGPS and age-related disorders. Targeting lysosome biogenesis emerges as an innovative, mechanism-driven strategy with the potential to transform anti-aging medicine.



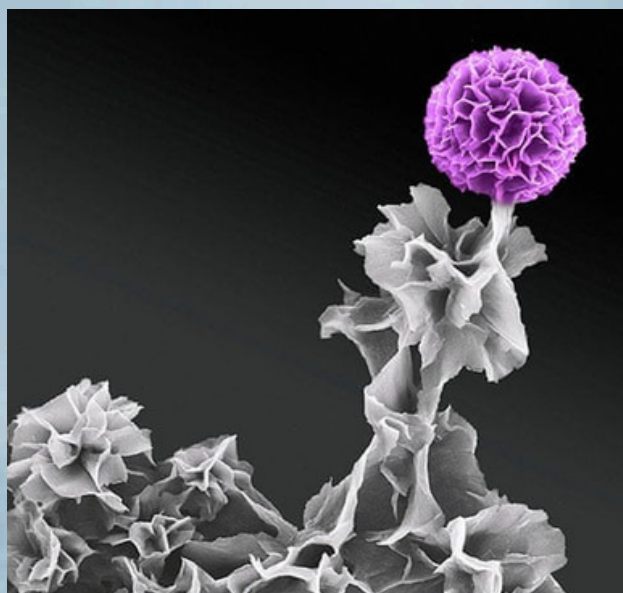
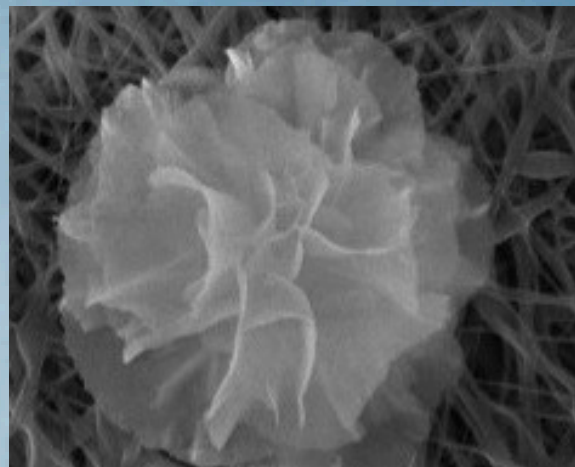
Taniya Ghosh  
Bsc.BtGC III

# "WHERE SCIENCE GETS A CHANCE TO BLOOM"

## What Are Nanoflowers?

Nanoflowers are tiny, flower-shaped structures created at the nanometer scale (1–100 nm).

They are made from materials like metals, metal oxides, or biomolecules, but they only look like flowers under a microscope – they are not real flowers.



## Applications of Nanoflowers

1. Antimicrobial and therapeutic
2. Drug Delivery
3. Bioimaging
4. Cancer Diagnosis and Therapy
5. Tissue Engineering
6. Water purification

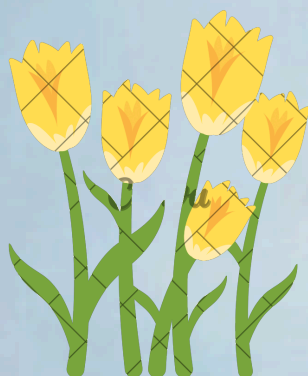
## What the Future Could Hold – Opportunities & Challenges

Regenerative medicine & anti-aging therapies: As shown in recent studies, nanoflowers might enable therapies that restore cellular energy production – potentially slowing or reversing cellular aging or treating degenerative diseases

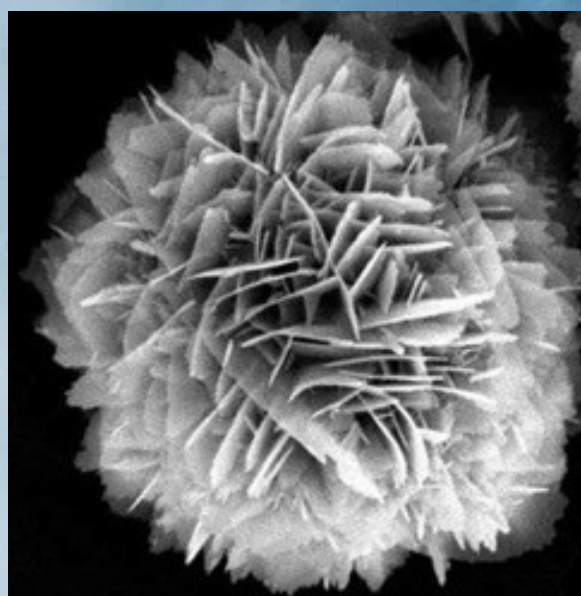


### **Advantages of Nanoflowers in Biological Systems**

- 1.Higher enzyme activity than free enzymes
- 2.Increased sensitivity in diagnostic tests
- 3.Easy functionalization with biomolecules
- 4.Low toxicity (for biopolymer-based nanoflowers)
- 5.Cost-effective and efficient



**"Blooming tiny:Nano flowers, ferns,and goldstars- a glimpse into the microscope garden".**



### **Conclusion**

The future of nanoflowers is extremely promising. Their unique structure makes them suitable for healthcare, clean energy, environmental cleanup, electronics, and biotechnology. With advancements in green synthesis and large-scale manufacturing, nanoflowers are likely to become a foundation for next-generation nanomaterials.



S.Taruni  
BSC.BTGC-III



# BEYOND THE BOOKS

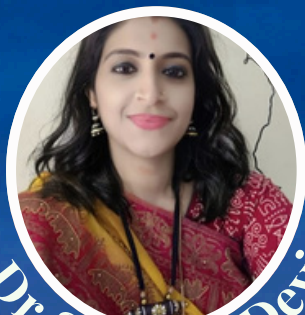




# VALUE ADDED COURSE (Biochemistry and Nutrition)



Dr. S. Padma



Dr. S. Manju Devi



Dr. S. Vanitha



Dr. G. Kamala



Ms V. Revathi

- The Medical Coding program was conducted from 11-11-2025 to 16-11-2025 under the guidance of Mrs. Krishna Satya, Director, and Mr. Suraj Saddam, Managing Director of Smart Minds Academy of Real-Time Training, Kapra, Hyderabad. This program provided practical insights into the fundamentals and applications of medical coding.
- A comprehensive program on Nutrition Psychology and Diet Counseling was organized from 10-11-2025 to 15-11-2025, featuring resource persons including **Mrs. V. Revathi (PhD)**, Assistant Professor in Nutrition, Department of Biochemistry and Nutrition, BVC; **Ms. Maria Dorothy**, Lecturer in Psychology, Faculty of Arts, BVC; and Mr. S. Naveen Kumar, Assistant Professor (Guest Faculty) in Rehabilitation Psychology, NIEPID, Secunderabad. As part of this program, an additional activity involved a visit to the Sahayam Psychological Counselling and Wellness Centre at the University College of Science, Osmania University, which offered practical exposure to counseling practices.
- The Bioinformatics and Data Analysis program was conducted from 09-02-2026 to 25-02-2026 by **Dr. S. Padma, Dr. S. Vanitha, Dr. Manju Devi S** and **Dr. Kamala Golla** from the Department of Biochemistry and Nutrition, BVC, focusing on computational tools and analytical techniques relevant to modern biological research.

# VALUE ADDED COURSE (Microbiology)



- Clinical Diagnosis Department of Microbiology organized a Value-Added Course on Clinical Diagnosis in collaboration with YES Labs, AS Rao Nagar, for B.Sc. Microbiology students to enhance their practical and diagnostic skills in clinical microbiology. The course was conducted from 11th November 2025 to 15th November 2025
- Artificial Intelligence in Biology and Its Applications Value Added Course was conducted by **Dr. Anuradha, Ms. Anju and Mrs. Chaitanya.**
- Value Added Course on Clinical Diagnosis was conducted by **Dr. Anuradha**



 **BHAVAN'S VIVEKANANDA COLLEGE**  
of Science, Humanities & Commerce  
Babalpur, Secunderabad - 500049  
Recognized with 'A' Grade by NMAC  
Autonomous College, Affiliated to O.U.

**VALUE ADDED COURSE**  
ON  
**ARTIFICIAL INTELLIGENCE IN  
BIOLOGY AND ITS APPLICATIONS**  
ORGANIZED BY  
DEPARTMENT OF MICROBIOLOGY

Course Duration: 30 hours  
Fee: 500/-  
Mode: Online (Microsoft Teams)  
Targeted groups:  
UG, PG, Research scholars & Faculty

**CLICK HERE TO REGISTER**

Date: 9<sup>th</sup> - 28<sup>th</sup> Dec 2024  
Timings: 6:00 pm - 8:00 pm

# VALUE ADDED COURSE (CHEMISTRY)



DR. MARY NYGI KURIAN



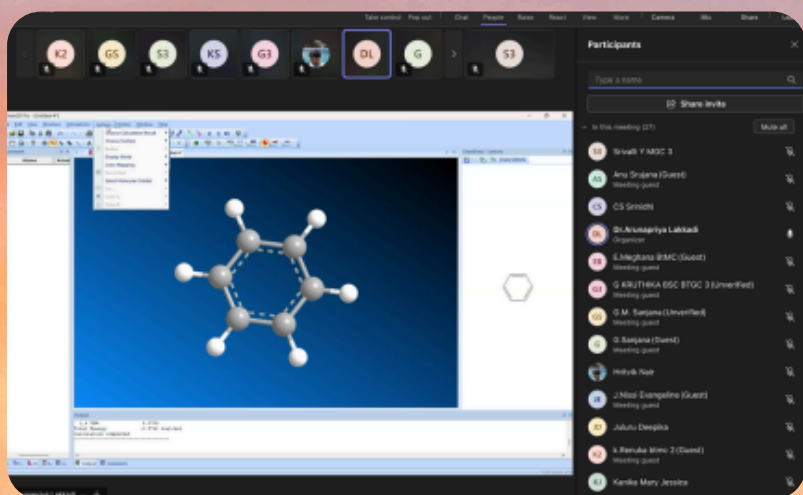
DR. L. ARUNA PRIYA

- The Department of Chemistry, Bhavan's Vivekananda College, Sainikpuri, organised a Value-Added Course on "Computer Aided Drug Design" from 21 November 2025 to 01 December 2025 for undergraduate students, with the objective of enhancing conceptual understanding and practical exposure to modern drug design tools and techniques.
- The course was coordinated by and **Dr. Mary Nygi Kurian, Dr. L. Arunapriya**, who efficiently structured the programme and ensured smooth conduct of both theoretical and practical sessions. A total of 38 students actively participated in the course, comprising 8 students from III Year and 30 students from II Year.
- **Dr. L. Arunapriya** introduced the basics of ChemDraw and conducted hands-on sessions using ChemDraw, allowing students to gain practical experience in chemical structure drawing and molecular representation.
- The course also featured an expert guest lecturer named Dr. Rama Krishna Dumpati, Scientist, PMC Group, USA, who delivered insightful sessions on molecular docking, supported by case studies and extensive hands-on training using PyRx, PyMOL, ChemDraw and SPDBV. These interactive sessions significantly enhanced students' understanding of structure-based drug design and molecular visualization techniques.

# VALUE ADDED COURSE (CHEMISTRY)



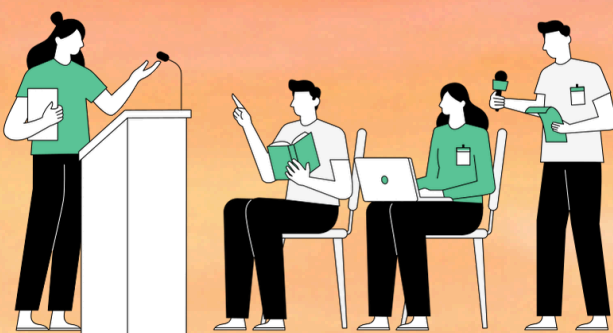
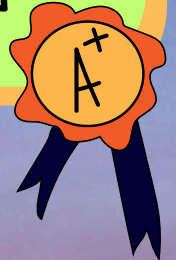
- **Dr. Mary Nygi Kurian** explained the concepts of ADMET properties, the Lipinski rule, and the application of Pharmacodynamics for molecules using software, enabling students to understand the pharmacokinetic and pharmacodynamic aspects of drug-like molecules in a systematic manner.
- The programme was highly informative and was appreciated by the participants for its practical orientation and relevance to current trends in pharmaceutical and computational chemistry. The successful execution of the course was made possible through the dedicated efforts of the coordinators and the enthusiastic participation of the students.



# STUDENT'S ACHIEVEMENTS AND EXPERIENCES

I, ALONG WITH MY TEAM, PRESENTED A RESEARCH PAPER AT CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (CBIT), WHERE WE SECURED THE 3RD PRIZE AMONG SEVERAL COMPETITIVE ENTRIES. THE EXPERIENCE INVOLVED IN-DEPTH RESEARCH, COLLABORATION, AND EFFECTIVE PRESENTATION, ALL OF WHICH STRENGTHENED OUR ANALYTICAL, COMMUNICATION, AND TEAMWORK SKILLS. OVERALL, IT WAS A REWARDING OPPORTUNITY THAT NOT ONLY ENHANCED OUR SUBJECT KNOWLEDGE BUT ALSO BOOSTED OUR CONFIDENCE IN ACADEMIC AND PROFESSIONAL SETTINGS.

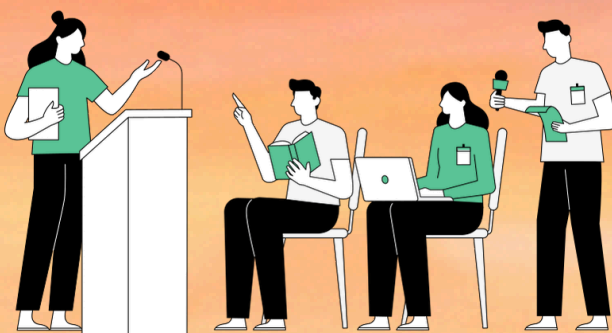
- ROSHNI GAZALAMIN  
[BSC. BTGC III]



# STUDENT'S ACHIEVEMENTS AND EXPERIENCES

I ATTENDED AN INTERNATIONAL CONFERENCE AT ST. PIOUS DEGREE COLLEGE IN COLLABORATION WITH DALLAS UNIVERSITY, WHERE I PRESENTED OUR PROJECT PAPER AND RECEIVED THE BEST ORAL PRESENTATION AWARD. I ALSO PARTICIPATED IN A NATIONAL CONFERENCE AT CBIT, WHICH ENHANCED MY ACADEMIC EXPOSURE AND CONFIDENCE.

- P VRITIKA  
[ BSC. BTGC III ]



# STUDENT'S ACHIEVEMENTS AND EXPERIENCES



PRESENTING OUR PAPER AT ST. PIOUS DEGREE COLLEGE WE GOT TO KNOW MORE SO MANY NEW WAYS IN CONDUCTING OUR TOPIC AND FOLLOWING MANY OTHER STEPS REGARDING SUSTAINABLE DEVELOPMENTAL GOALS AS WELL.

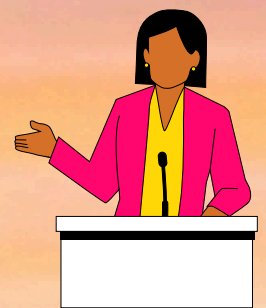
- NANDINI REDDY R.  
[ BSC BTGC III ]



# STUDENT'S ACHIEVEMENTS AND EXPERIENCES

I PRESENTED AN IDEA AT NATIONAL LEVEL BIOTECHNOLOGY FEST - NEOZION - SUDHEE. I ALSO ATTENDED A 3 DAY WORKSHOP ON DNA FINGERPRINTING AND INTERNATIONAL CONFERENCE ON INTEGRATIVE BIOTECHNOLOGY FOR GLOBAL IMPACT.

- GARIMA GAUTAM  
[BSC. MGC III]



# STUDENT'S ACHIEVEMENTS AND EXPERIENCES

SECURING 2ND PLACE AT AN INTERNATIONAL CONFERENCE HOSTED AT OSMANIA UNIVERSITY WAS TRULY A MEMORABLE AND ENRICHING EXPERIENCE FOR US. THE EVENT BROUGHT TOGETHER A DIVERSE GROUP OF RESEARCHERS, ACADEMICIANS, AND INNOVATORS, CREATING A VIBRANT ENVIRONMENT FILLED WITH KNOWLEDGE EXCHANGE AND MEANINGFUL DISCUSSIONS. PRESENTING OUR WORK ON SUCH A PLATFORM NOT ONLY BOOSTED MY CONFIDENCE BUT ALSO ALLOWED US TO GAIN VALUABLE INSIGHTS THROUGH INTERACTIONS WITH EXPERIENCED COLLABORATORS AND EXPERTS FROM DIFFERENT FIELDS. EACH SESSION OFFERED A NEW PERSPECTIVE, AND THE CONSTRUCTIVE FEEDBACK WE RECEIVED WILL UNDOUBTEDLY HELP US REFINE OUR RESEARCH FURTHER. BEYOND THE RECOGNITION, WHAT WE CHERISH MOST IS THE EXPOSURE, LEARNING, AND CONNECTIONS WE GAINED THROUGH THIS EXPERIENCE. THIS ACHIEVEMENT MARKS AN IMPORTANT MILESTONE IN OUR ACADEMIC JOURNEY AND MOTIVATES US TO CONTINUE EXPLORING, QUESTIONING, AND CONTRIBUTING TO THE FIELD WITH GREATER DEDICATION.

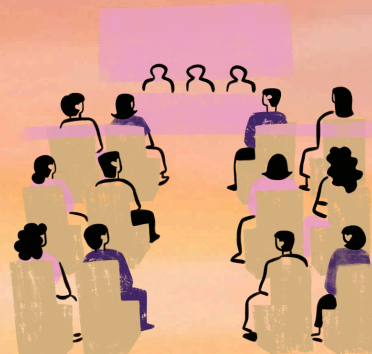
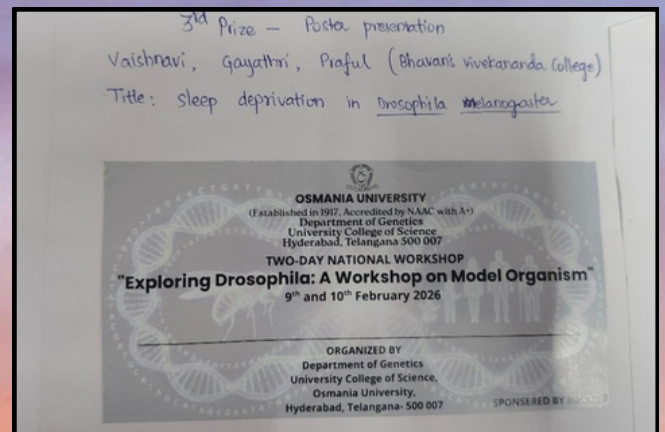
- C.S SRINIDHI AND G. TARUNI SREE  
[ BSC BTGC III ]



# STUDENT'S ACHIEVEMENTS AND EXPERIENCES

I ATTENDED THE WORKSHOP TITLED "EXPLORING DROSOPHILA - A WORKSHOP ON MODEL ORGANISM," WHICH WAS A VERY INSIGHTFUL AND ENRICHING EXPERIENCE. DURING THE WORKSHOP, I ACTIVELY PARTICIPATED IN A POSTER PRESENTATION AS PART OF A GROUP OF THREE. OUR TEAMWORK AND EFFORTS WERE RECOGNIZED, AND WE WERE AWARDED THE THIRD PRIZE ALONG WITH A CASH REWARD. THE WORKSHOP ENHANCED MY UNDERSTANDING OF MODEL ORGANISMS AND ALSO IMPROVED MY PRESENTATION AND COLLABORATIVE SKILLS.

- P GAYATHRI  
[ BSC. BTGC II ]



# STUDENT'S ACHIEVEMENTS AND EXPERIENCES

I PARTICIPATED IN THE YOUTH GAMES OPEN NATIONAL CHAMPIONSHIP 2026, ORGANIZED BY YOUTH GAMES COUNCIL INDIA, WHERE I SECURED A WINNING POSITION IN BADMINTON, REPRESENTING TELANGANA. ADDITIONALLY, I ACHIEVED A SILVER MEDAL IN THE YOUTH GAMES INDO-NEPAL INTERNATIONAL SERIES 2026, CONDUCTED BY THE YOUTH GAMES FOUNDATION, HELD AT POKHARA, NEPAL.

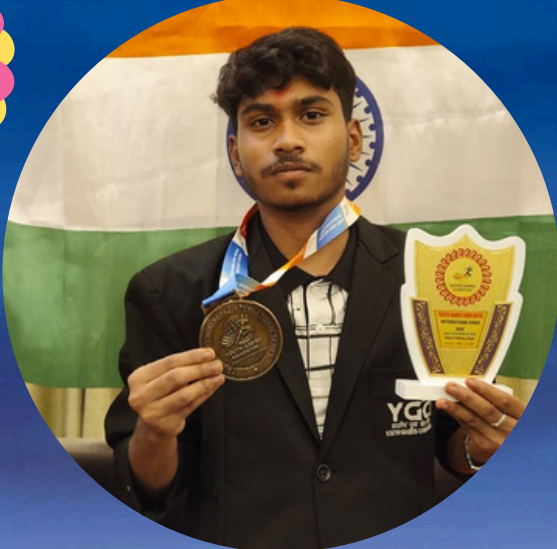
-PARAS SHARMA  
[BSC, BTGC I]



# STUDENT'S ACHIEVEMENTS AND EXPERIENCES

I PARTICIPATED IN THE YOUTH GAMES OPEN NATIONAL CHAMPIONSHIP 2026, ORGANIZED BY YOUTH GAMES COUNCIL INDIA, REPRESENTING TELANGANA IN ATHLETICS, WHERE I SECURED A WINNING POSITION. FURTHERMORE, I GOT A GOLD MEDAL IN THE YOUTH GAMES INDO-NEPAL INTERNATIONAL SERIES 2026, CONDUCTED BY THE YOUTH GAMES FOUNDATION, IN THE 100 METERS EVENT (U-19 CATEGORY) WITH A PERFORMANCE OF 11.19 SECONDS, HELD AT POKHARA, NEPAL.

**-S GIRIVARDHAN [BSC BTGC I]**



# STUDENT'S ACHIEVEMENTS AND EXPERIENCES



**R. MADHU, A III-YEAR STUDENT OF BSC. BCNDC, REPRESENTED THE COLLEGE AT THE MANDAL-LEVEL CM CUP SPORTS MEET HELD AT MARKOOK, SIDDIPET DISTRICT, ON 30TH AND 31ST JANUARY 2026. HE SECURED SECOND PRIZE IN THE 200 M AND 400 M RUNNING EVENTS, AND ALSO EXCELLED IN THE KABADDI MATCHES CONDUCTED DURING THE MEET.**





# FUN OF BIOHIVE

Genome Go! 🏁🏁	72
Apex S1: Last Wing Standing 🏔️	74
Trust No Cell 🚗	85



# GENOME GO!

A biology-themed racing board game where players roll a dice, move along the track, and face special tiles that can help or slow them down. Complete 3 full laps around the track and be the first player to cross the finish line to win.

## ATP SURGE

Move ahead 3

## GENETIC MUTATION

Roll 

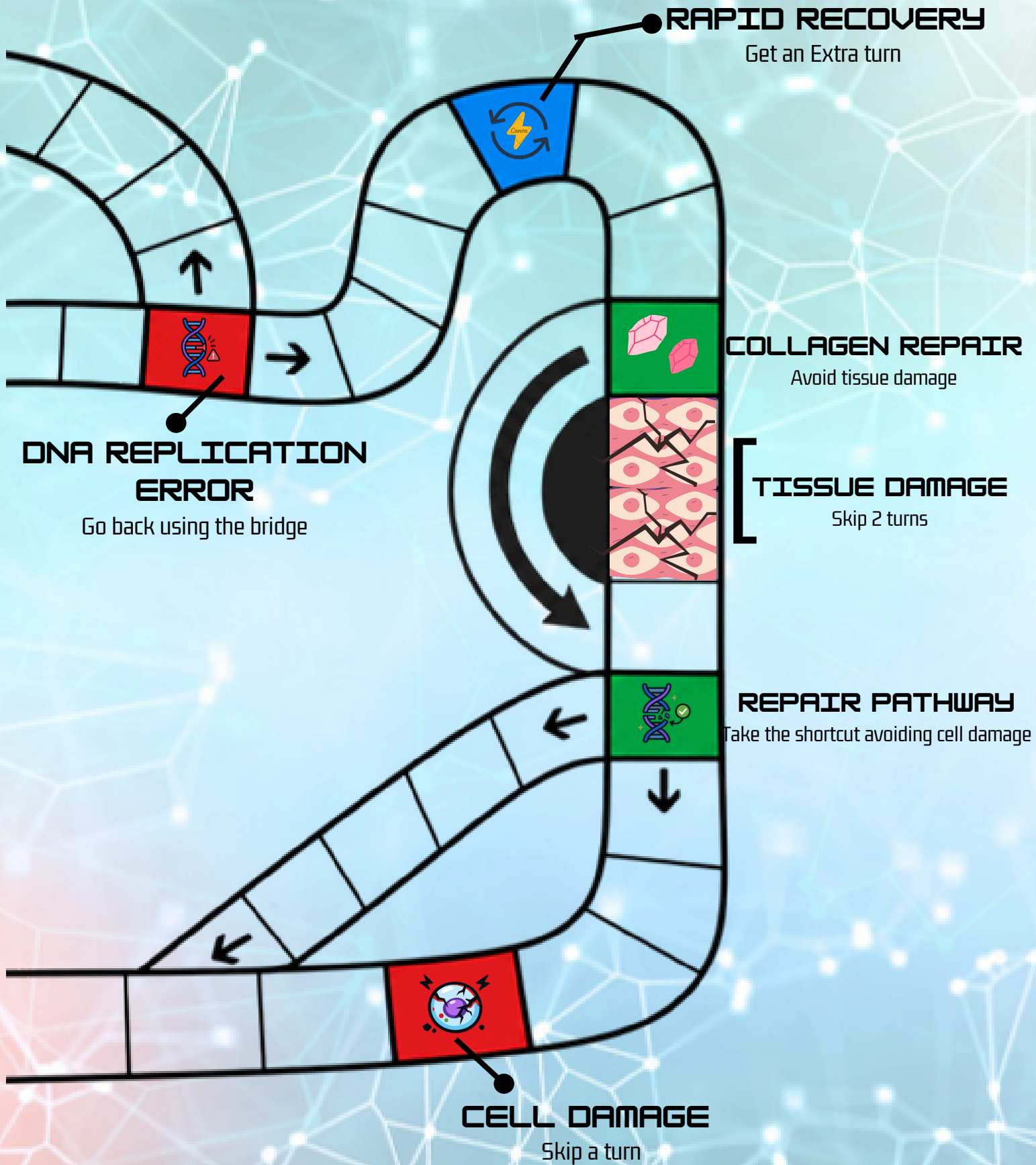
Even = Go forward 2

Odd = Go back 2

Start

## TOXIN EXPOSURE

Move to previous shaded tile



CHOOSE YOUR  
CHARACTER

## SEASON 1 – LAST WING STANDING



### WELCOME TO TERRAXIS

A FORGOTTEN ISLAND, SHAPED BY CHAOS, RULED BY NATURE ALONE. BOOMING CLIFFS, BURNING SKY, DENSE JUNGLES, AND ANGRY WATERS MAKE EVERY INCH A BATTLEFIELD JUST TO STAY BREATHING. STORMS ARRIVE WITHOUT WARNING. PREDATORS CREEP IN SILENCE. THE LAND TWISTS UNDER YOUR FEET BEFORE YOU EVEN HAVE TIME TO GET USED TO IT. NOTHING STAYS THE SAME HERE, AND YOU WON'T STAY THE SAME. EVERYTHING YOU CHOOSE CHANGES AROUND YOU. INCOME IN YOUR CREATURE, DESIGN ITS STRENGTHS AND DEAL WITH WHATEVER TERRAXIS THROWS AT YOU. OUTLAST YOUR OPPONENT, SURVIVE THE WRATH OF THIS ISLAND AND PROVE YOU ARE THE ONE THING THIS WORLD COULD NOT BREAK, THE ULTIMATE **APEX**



# CHOOSE YOUR CHARACTER

Choose your survivor and fight for the survival on Terraxis



## STORMTALON

## VELORA



A fierce sky hunter built for endurance and dominance. Raw power, sharp instinct, and aerial mastery — forged to outlast every storm.

A swift island survivor driven by speed and precision. She does not overpower — she outmaneuvers, outruns, and strikes when the moment is hers.

TWO SURVIVORS. ONE APEX.



# PHYSICAL TRAITS

Roll the dice once to unlock a permanent physical feature that enhances your organism's survival on Terraxis.



## STORMTALON



### Broad Wings

Built for long flights and strong winds.

**+2 Endurance** **+1 Defense**



### Reinforced Talons

Stronger grip for hunting and combat.

**+2 Power** **+1 Awareness**



### Dense Feathers

Extra protection from harsh weather.

**+2 Defense** **+1 Endurance**



### Hooked Beak

Sharp feeding tool for quick strikes.

**+2 Power** **+1 Speed**



### Lightweight

Faster movement with agile control.

**+2 Speed** **+1 Awareness**



### Long Tail Feathers

Improved balance and turning in flight.

**+2 Awareness** **+1 Speed**

## VELORA



### Enlarged Compound Eyes

Detects danger with rapid reactions.

**+2 Awareness** **+1 Speed**



### Reinforced Wings

Handles storms and rough air better.

**+2 Defense** **+1 Endurance**



### Hydrophobic Body

Repels water for wet terrain survival.

**+2 Defense** **+1 Speed**



### Segmented Abdomen

Flexible body control for rapid turns

**+2 Speed** **+1 Power**



### Streamlined Frame

Slim body shape built for evasive flight

**+2 Speed** **+1 Awareness**



### Stabilized Wing Pair

Balanced wing motion and flight

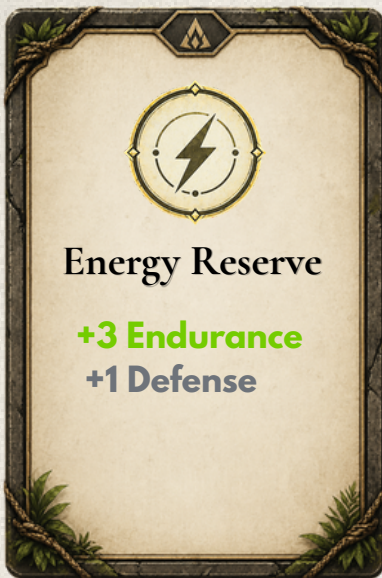
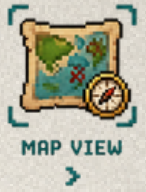
**+2 Endurance** **+1 Speed**

[CHOOSE 1 TRAIT PER PLAYER]



# SPECIAL PERKS

Roll the dice once to unlock a permanent physical feature that enhances your organism's survival on Terraxis.



[CHOOSE 1 PERK PER PLAYER]





# TERRAXIS

# TRIALS OF TERRAXIS

*One island... Endless Trials*



**YOUR SURVIVAL JOURNEY STARTS HERE** [How to Play] 

EACH PLAYER STARTS WITH 3 LIVES. TO TRIGGER EACH ROUND, ONE PLAYER SAYS “START” WHILE THE OTHER BEGINS COUNTING 1 THROUGH 20. AT ANY MOMENT, THE FIRST PLAYER SAYS “STOP” THE NUMBER REACHED DETERMINES WHICH OF THE 20 TERRAXIS EVENTS WILL TAKE PLACE.

EACH EVENT HAS SURVIVAL REQUIREMENTS BASED ON KEY STATS (CHOSEN PRIOR IN PAGES 75-77) .

MEET THE REQUIREMENTS IN ORDER TO SURVIVE.

FAILED TO MEET THE SURVIVAL REQUIREMENTS, LOSE 1 HEART. 

ROUND AFTER ROUND, TERRAXIS WILL CONTINUE TO UNLEASH ITS WRATH UNTIL ONE PLAYER LOSES ALL 3 HEARTS.

THE FINAL SURVIVOR IS CROWNED THE APEX RULER OF TERRAXIS [Claim Apex Sovereign]



**APEX SOVEREIGN**





12

### CYCLONE WINDS

Violent winds rip across the island skies.

- Survival Req.

**+4 Defense**  
**+4 Endurance**



4

### HEATWAVE

Scorching temperatures drain stamina rapidly.

- Survival Req.

**+4 Endurance**  
**+4 Awareness**



19

### THUNDERSTORM

Lightning strikes without warning.

- Survival Req.

**+4 Speed**  
**+4 Awareness**



7

### MONSOON FLOOD

Heavy rain swallows the lowlands.

- Survival Req.

**+4 Defense**  
**+4 Speed**





2



### LANDSLIDE

The cliffs give way in a crashing wave of stone.

- Survival Req.

**+4 Speed**  
**+4 Awareness**



16



### QUICKSAND BASIN

Soft terrain drags creatures downward.

- Survival Req.

**+4 Power**  
**+4 Awareness**



10



### CAVE COLLAPSE

Shelter caves shatter within.

- Survival Req.

**+4 Defense**  
**+4 Speed**



5



### RAZOR RIDGE

Sharp cliffs and jagged rock block movement.

- Survival Req.

**+4 Defense**  
**+4 Power**





14



### VIPER AMBUSH

A hidden serpent strikes from the bush.

- Survival Req.

**+4 Awareness**  
**+4 Speed**



20



### IRONJAW MAULER

A massive armored beast charges your zone.

- Survival Req.

**+4 Power**  
**+4 Defense**



1



### RAZORWING SWARM

Hostile flying hunters descend in numbers.

- Survival Req.

**+4 Defense**  
**+4 Awareness**



9



### SHADOW STALKER

A silent nocturnal predator begins pursuit.

- Survival Req.

**+4 Awareness**  
**+4 Endurance**





6



### FOOD SCARCITY

Resources vanish across the island.

- Survival Req.

**+4 Endurance**  
**+4 Awareness**



17



### HARSH MIGRATION

You must cross Terraxis in search of safety.

- Survival Req.

**+4 Speed**  
**+4 Endurance**



3



### TOXIC WATER

Nearby water becomes dangerous to use.

- Survival Req.

**+4 Awareness**  
**+4 Defense**



15



### NEST RAID

Your resting zone is attacked.

- Survival Req.

**+4 Power**  
**+4 Awareness**





11



### WILDFIRE

Flames spread through the jungle.

- Survival Req.

**+4 Speed**  
**+4 Awareness**



8



### VOLCANIC TREMOR

The earth violently shakes beneath you.

- Survival Req.

**+4 Defense**  
**+4 Endurance**



18



### ASHFALL

Smoke clouds choke the skies.

- Survival Req.

**+4 Defense**  
**+4 Awareness**



13



### FINAL CATAclySM

Terraxis unleashes ultimate destruction.

- Survival Req.

**Any two stats at 5+**



# TRUST NO CELL

## HOW TO PLAY:



Players are assigned secret roles: Most are **Scientists (Crew)**, a few are **Imposters**.



Scientists complete biology-based tasks around the hive.



Imposters secretly **sabotage, eliminate** players and avoid getting caught.



When a body is found or a meeting is called, players **discuss and vote** to find imposters.



Game continues in rounds until **one team wins!**

## RULES



**Do not** reveal your role to anyone.



Complete tasks **honestly** (if you're not an imposter).



Imposters must **act normal** and avoid suspicion.



**No repeating** accusations without reason.



Eliminated players must **stay silent**.



Vote **only during** discussion rounds.



No physical force—only **light signals** allowed.



THINK • DEDUCE • SURVIVE



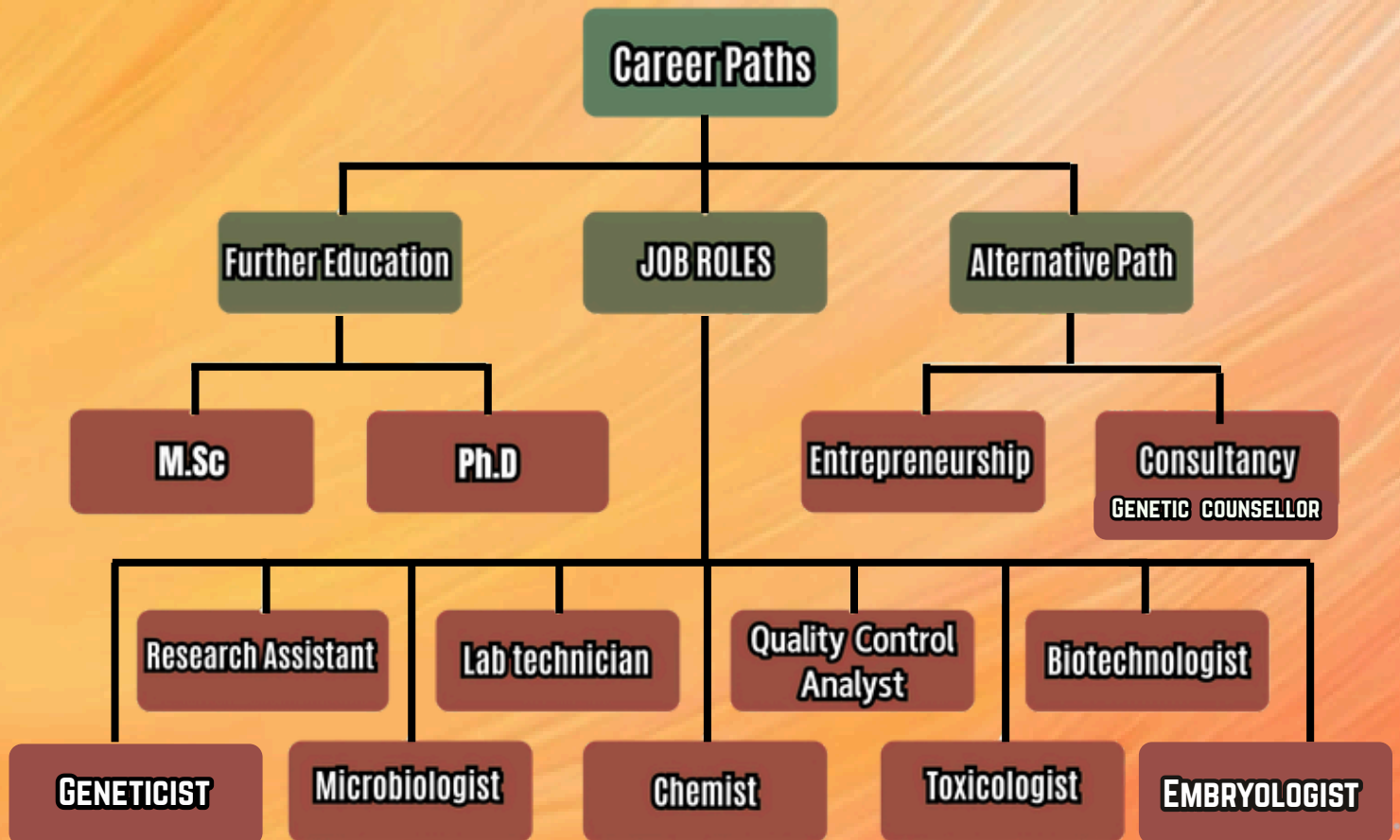


Career

Conundrum



# CAREER PATHS AFTER PURSUING B.SC. LIFE SCIENCES



## SUGGESTED SKILLS AND RESOURCES



Textbook Knowledge



Wet Lab Tech



Bioinformatics Basics



Communication, Bio-entrepreneurship Basics



Critical Analysis



Industry Trends



## **EXAMINATIONS AFTER B.SC LIFE SCIENCES**



Exam Name	Application Dates	Exam Date	Eligibility	Application Fee	Subjects Covered
IIT JAM	Sep – Oct	Feb	B.Sc. degree with required percentage	INR 750-1500	Biology, Biotechnology, Chemistry
JNU CEEB (JNU Entrance)	Mar – Apr	May	B.Sc. degree with Life Sciences background	INR 530-800	Biochemistry, Genetics
AIIMS M.Sc.	Mar – Apr	Jun	B.Sc. in relevant field	INR 1500-3000	Life Sciences, Biotech
BHU PET	Feb – Mar	May	B.Sc. with minimum 50%	INR 300-600	Biology, Chemistry
CUET	Feb – Mar	May	Bachelor's in Science	INR 600-1200	Biology, Chemistry, General Science
TIFR GS	Oct – Nov	Dec	B.Sc./B.E./B.Tech. in Science/Engineering	INR 900	Biology, Chemistry, Math
GATE	Sep – Oct	Feb	Bachelor's degree in Science/Engineering	INR 750-1500	Biotechnology, Life Sciences
JGEEBILS	Oct – Nov	Dec	B.Sc. in Biology or related fields	INR 900	Biology, Biotechnology



## **TRACING ACADEMIC JOURNEYS ABROAD**



Vishnu  
(BtGC 2022-2025)



Nidhish Yalavarthy  
(BtGC 2022-2025)



Mirza Fareedulla Baig  
(MGC 2022-2025)



Sadbhavana Bazaru  
(MGC 2022-2025)





## ALUMNUS TALK

### IN CONVERSATION WITH MR. VISHNU

Currently pursuing his MS in Biotechnology at University of Greenwich,  
United Kingdom (UK)



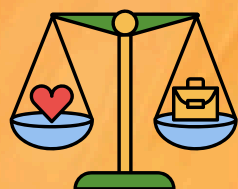
**1. What motivated you to pursue an MS in Biotechnology at the University of Greenwich, and how has this experience shaped your future career plans so far?**

Honestly, my interest in biotechnology started during my bachelor's. I had really supportive professors who gave me a strong base, and that made me want to learn more. Doing a Master's was always a dream for me. I chose the University of Greenwich because of its good reputation and focus on research. So far, this experience is helping me think more seriously about my future, especially moving towards research or industry roles in biotechnology.

**2. When deciding to study abroad, what factors mattered most to you—such as course structure, affordability, or job prospects—and how did Greenwich stand out among your options?**

For me, the biggest factors were career opportunities and long-term growth. I felt that studying in the United Kingdom would give me better exposure, especially in life sciences. I also thought about future job prospects and stability. Among the universities I looked at, Greenwich felt like a good balance of quality education and career opportunities, so it stood out to me.





**3. What has been the most memorable part of your academic or cultural experience so far? And what challenges did you face adjusting to a new environment, especially in terms of academics or lifestyle?**

To be honest, the beginning was not easy. Adjusting to a new country, new people, and a different academic system was quite challenging. But at the same time, it has been a really beautiful experience. I've learned how to be independent, manage things on my own, and explore a completely new culture. That's something I'll always remember.

**4. How different is the teaching and evaluation system compared to your undergraduate studies in India?**

There's a big difference. In my undergraduate studies in India, it was mostly classroom lectures and theory-based learning. But here, it's more about self-learning, research, and practical exposure. We're expected to explore topics on our own and apply what we learn, which actually helps in understanding things better

**5. What advice would you give to students planning to pursue Biotechnology abroad, especially regarding preparation, expectations, and common mistakes to avoid?**

I would say, plan properly and be mentally ready for challenges. Stepping out of your comfort zone is not easy, but it's worth it. Don't blindly believe everything—do your own research before making decisions. Choose your course and university carefully. And most importantly, stay strong during tough times, because in the end, it will definitely help you build a good career. And if you ever need any guidance or support, I'll always be here to help.





## ALUMNUS TALK

### IN CONVERSATION WITH MR. NIDISH

Currently pursuing his MS in Biotechnology at Monash University, Australia



**1) How has your journey from undergraduate studies to pursuing an MS in Biotechnology at Monash shaped your long-term career goals? Has studying in Australia changed the direction or scope of what you initially planned?**

My journey from undergraduate studies to pursuing an MS in Biotechnology at Monash University has been more of a shift in thinking than just academics. During my undergrad in Bhavan's I was focused on understanding biological concepts. But here, I've started looking at biotechnology as a problem-solving tool, especially in healthcare. For example, my interest has evolved towards combining AI with biotech, particularly in areas like cancer monitoring and aged care. Earlier, my goal was more inclined toward working in a biotech company, but now I'm aiming to build or contribute to innovative healthcare solutions, possibly even a startup. Studying in Australia has definitely expanded the scope of my goals. It pushed me to think globally and make real-world impact.



**2) What specifically drew you to Monash University and Australia for Biotechnology? Was it the research infrastructure, global recognition, or career opportunities—and how did you evaluate these factors before deciding?**

Choosing Monash University and Australia wasn't a random decision where I've evaluated it from three angles: research quality, exposure, and future opportunities. Monash stood out because of its strong biotech research ecosystem and its connection to institutes like Monash Biomedicine Discovery Institute. I was particularly drawn to how research here is not just theoretical but often aligned with real-world healthcare problems. Australia, in general, appealed to me because of its innovation-driven education system. Compared to more rigid academic structures, I saw that Australian universities encourage critical thinking, collaboration, and industry interaction. So for me, it wasn't just global ranking—it was about how well it prepares you.

**3) Looking back, what has been the most rewarding part of studying at Monash—academically or personally? Also, what was one challenge you didn't expect when moving abroad, and how did you practically deal with it?**

The most rewarding part has been the freedom to explore. I've been able to dive into new concepts and startup ideas, while also enjoying the experience of traveling, meeting new people and trying new foods.

On a personal level, adapting to independence has been huge—it changes how you manage time, priorities, and responsibilities

One unexpected challenge was balancing everything at once—studies, part-time work, and personal life. It wasn't just about time management, but also mental adjustment. Practically, I dealt with it by Structuring my week, Prioritising high-impact tasks And slowly building consistency instead of trying to do everything perfectly





#### 4) How does the research and practical exposure in your program compare to what you experienced during your undergraduate studies in India?

There's a noticeable difference in how learning is approached. During my undergraduate studies in India, the focus was more on theoretical understanding and exams. Practical exposure was there, but often limited in scope.

Here in Monash, the approach is more application-driven:

- You're encouraged to question and critique research
- Assignments often involve real-world problem solving
- There's a strong emphasis on independent thinking and innovation

#### 5) What kind of career paths are you currently exploring after your MS—industry, research, or academia—and how has Monash helped you prepare for them?

Right now, I'm exploring a mix of industry and innovation-driven roles, especially where biotechnology intersects with AI and digital health.

In Long-term, I see myself Working in the industry.

Monash has helped prepare me for this by:

- Exposing me to real-world research problems
- Encouraging critical and entrepreneurial thinking
- Giving me the flexibility to explore ideas beyond traditional biotech roles

It's made me realise that my career doesn't have to be limited to a lab—I can work at the intersection of science, technology, and innovation.





## ALUMNUS TALK

### IN CONVERSATION WITH MR. MIRZA

**Currently pursuing his MS in Cancer Molecular Biology and Therapeutics  
at University of Leicester, UK**

**1.Can you describe your current career trajectory and how your education abroad has influenced it?**

Currently, I'm pursuing my MSc in Cancer Molecular Biology & Therapeutics at the University of Leicester, UK. My goal is to build a strong foundation in molecular biology and cancer research, and work in research-focused roles in the future...

Studying abroad has changed how I approach science. The focus here is very practical and research oriented . I'm getting hands-on experience with lab techniques and also learning how to read and think about scientific papers more critically....It's not just about memorizing concepts anymore, it's about understanding how research actually works in real life.





**2. What led you to choose this particular country and institution for your studies? Were there any factors (academic, cultural, career-related) that influenced your decision?**

I chose the UK mainly because of the structure of the program. A one year master's degree will allow me to enter the research space much faster compared to longer programs in other countries.

Academically wise, the UK universities place strong emphasis on research and lab work, which is exactly what I wanted.

As for the University of Leicester, the course content aligned well with my interests in cancer biology. The research opportunities and facilities available made it a strong choice. Cultural exposure and the chance to experience an international academic environment also played a role.

**What was your favourite part of your experience abroad? Did you encounter any challenges in adjusting to a new culture and how did you overcome them?**

My favourite part, I think is working in the lab and being part of an actual research project. It feels very different from classroom learning. Like you start seeing how small experiments connect to bigger scientific questions.. which is not possible with only theoretical learning.

Adjusting to a new country was definitely not so smooth. The weather, the food, and even communication styles like accents and stuff took some getting used to. The biggest challenge was honestly feeling out of place initially, especially in the lab when I felt like I didn't know enough.

I dealt with it by slowly building routines, asking questions without overthinking, and giving myself time. And eventually, things started making more sense, and I became more comfortable in both academic and social settings.



#### **4. Which exams did you take (IELTS, TOEFL, GRE etc)**

I took the IELTS as part of my application process. Since English is already a language I'm comfortable with, it was mainly about understanding the test format and preparing accordingly.

#### **5. Biggest myth about studying abroad!!**

One big myth is that everything becomes easy once you go abroad. That's definitely not true.

Academically, it can actually be more challenging because you're expected to manage a lot of things in addition to academics. People assume life is very comfortable, but managing finances, studies, and personal life together can be tough.

#### **6. What would you advise to beginners about studies abroad?**

First, be very clear about why you want to study abroad. Don't do it just because others are doing it.

Second, research your course properly. Look at modules, teaching style, and career outcomes instead of just rankings.

Third, be financially realistic. Plan your expenses well and have a backup strategy.

Finally, be prepared for discomfort in the beginning. It's normal to feel lost. What matters is how you adapt over time. Because sometimes growth isn't about moving ahead faster, it's about seeing further than you ever could before.





## ALUMNUS TALK

### IN CONVERSATION WITH MS. SADHBHAVANA

Currently pursuing his MSc in Biochemistry at Geothe University, Germany

#### 1. Can you describe your current career trajectory and how your education abroad has influenced it?

I'm currently in my 2nd semester of MSc Biochemistry at Goethe University Frankfurt, Germany. So far everything is aligning like it's supposed to or EVEN better than I expected. I never knew there could be even better world with research i was never exposed to. So tbh I do not know where my trajectory is headed but I'm confident that I will choose something that will ultimately help me learn even if it means i choose a different path than what I want for myself right now.

#### 2. What was your favourite part of your experience abroad? Did you encounter any challenges in adjusting to a new culture and how did you overcome them?

The favorite part of my experience is living on my own. This gives me room to know myself better, do things by myself, romanticize my life. Additionally, I love that I get to travel to different counties on the weekend and be back for my 8 am class on the Monday. Traveling is what keeps me sane. Initially it was quite balancing my academic life with my personal/ social life but it only gets better from there and you'll eventually learn to plan your life better so you have room to do everything other than being in the lab all day. But someday, even being in the lab all day is Fun. For me, personally I like challenges. I am always looking forward to new things and new experiences



### **3. What led you to choose this particular country and institution for your studies? Where there any factors (academic, cultural, career-related) that influenced your decision?**

I choose Germany because of lotta factors. But the main one being I wanna live in a different country and Rediscover myself. There are also factors like free-tution , extraordinary research, Germany being part of Europe so you can travel a lot. But to answer the Question why I choose Goethe University Frankfurt is because of it's Biochemistry program. It's research particularly on T-cell receptors, ABC transporters, GPCRs, membranes, Neurobiology of *C. elegans* etc was so fascinating. Additionally, the university's proximity to Max planck institute of brain research, Max planck institute of Biophysics and Paul Ehrlich Institute. BUT let me remind y'all that there's more to life than education so it's important to balance that with lots of fun and friends. That being said, Frankfurt is a melting pot of cultures. People from all over the world. So my friend group right now is people from all over the world. Does it get any better than this??? I don't think so :)

### **4.Which exams did you take(IELTS,TOEFL,GRE etc)**

I only had to take IELTS

### **5.Biggest myth about studying abroad!!**

Biggest myth probably have to be that Germans are Racist towards you. If anything the people have been amazing to me. Always helping me adjust, helping me with the language, sweet grandmas. I think their curiosity towards the foreigners result in that misconception of the racism most of the time.

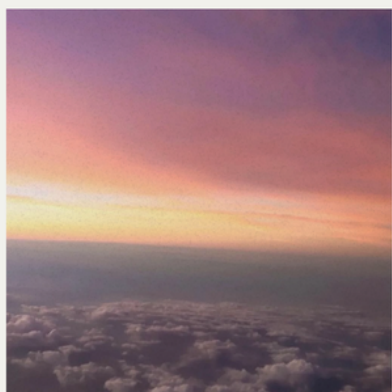


## 6. What would you advice to beginners about studies abroad?

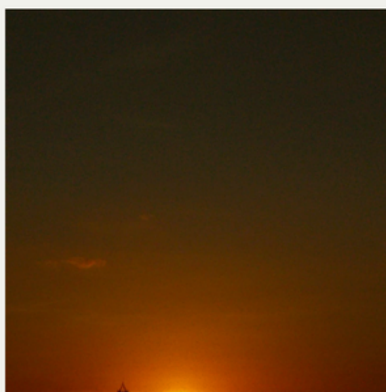
To the people who wants to study abroad, I want to tell them to know what they want better. To have a clarity. In their program, in life, in their decisions in general. I would so suggest them to do everything by themselves instead of relying on consultancies because figuring out by yourself gives you more knowledge, which you can pass on to more people in future. But ultimately it's your life and the university's you decide on for your master's is important and needs be threaded carefully. Because picking a wrong university will not only waste your time but also make you devoid of all the right experiences.



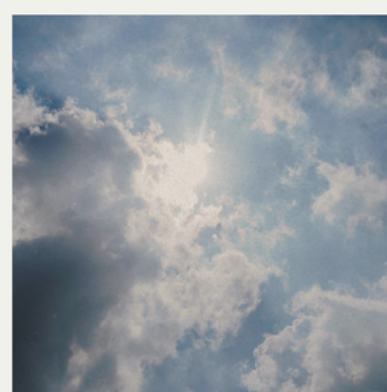
# Picture Acknowledgements



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*Bsc. BTGC 3*



*M. Samyameendra*  
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*Taruni Sree*  
*Bsc. BTGC 3*



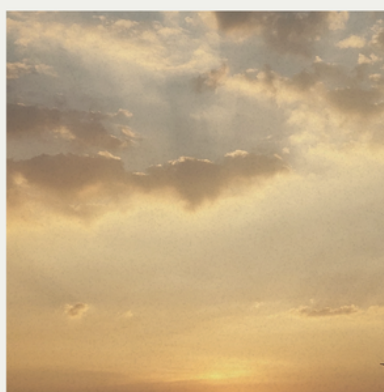
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*Bsc. BTGC 1*



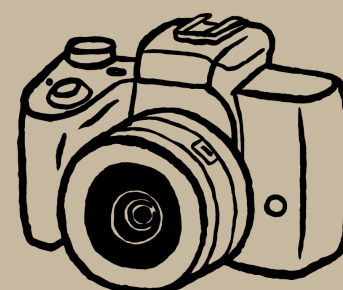
*Rupali*  
*Bsc. BTGC 1*



*Rupali*  
*Bsc. BTGC 1*



*DR. S. NAGAMANJU*



# TEAM BIOHIVE



## *Names (L TO R):*

***Sailaja, Sanjana, B. Gayathri, Vaishnavi, Harshitha, M. Samyameendra, Roshni Gazalamin, P. Joshua, Vedant, Paras Sharma, Ananya, Anu Srujana, Nissi.***

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# TEAM BIOHIVE

## HEADS



*Joshua Parnandi*  
*Event -O - Clock*



*Gayathri*  
*Lab Chronicles*



*Taruni Sree*  
*What's on your mind*



*Roshni Gazalamin*  
*Beyond the books*



*M. Samyameendra*  
*Fun of Biohive*



*C.S.Srinidhi*  
*Career Conundrum*



*Vedant*  
*Social Media Management*

# TEAM BIOHIVE

## CO-ORDINATORS



*We, the student coordinators of BioHive Newsletter – Edition 4, M. Samyameendra, Roshni Gazalamin, and Joshua Parnandi, feel immensely proud to present this latest chapter of our collective journey.*

*BioHive has always been more than just a newsletter; it is a vibrant canvas where the curiosity, scientific temper, and creative spirit of our Life Sciences students come alive. Each edition carries not just information, but the pulse of ideas that continue to evolve and inspire.*

*Taking over the mantle this year has been an exhilarating experience. From the first sparks of brainstorming to the final touches on each page, every step has been a lesson in collaboration, creativity, and shared passion. What you hold now is the result of countless discussions, dedication, and a collective belief in the power of knowledge.*

*We extend our heartfelt gratitude to our Principal, GSVRK Choudary, and the Head of the Department of Genetics and Biotechnology, Dr. B. Kalpana, for their unwavering support and encouragement. We are especially thankful to our faculty coordinator, Dr. S. Nagamanju, whose constant guidance has been the backbone of this initiative.*

*To our incredible team, thank you for transforming ideas into something tangible and meaningful.*

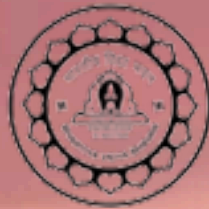
*As we look toward the future of Life Sciences, we remember that like the sky, our potential is vast, interconnected, and truly limitless.*

*May our curiosity always reach for the clouds and beyond.*

*Warm regards,*

*The Coordinators*

*BioHive Newsletter – Edition 4*



Bharatiya Vidya  
**Bhavan**

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of Science, Humanities & Commerce

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