



KRISTU JAYANTI
(DEEMED TO BE UNIVERSITY)

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Synapse

Annual Newsletter
Department of Life Sciences

Volume 11 | FEBRUARY 2026



The day in which you have not done good to another will not be recorded in your book of life

St. KURIAKOSE ELIAS CHAVARA

Founder, CMI Congregation

Kristu Jayanti (Deemed to be University)

Kristu Jayanti (Deemed to be University) Founded in 1999 and managed by the CMI Bodhi Niketan Trust, Kristu Jayanti (Deemed to be University) is a premier institution distinguished by A++ grade (3.78 CGPA) by NAAC during the third cycle of accreditation and with NIRF ranking of 34 in 2025. Recognized as a National Level Clean and Smart Campus, the university offers a learner-centric environment supported by state-of-the-art infrastructure and a robust research ecosystem. It is dedicated to the holistic development of future-ready graduates, integrating academic rigor with ethical values, social responsibility, and global competencies to foster a spirit of service in a dynamic world. The university received the DBT Star College status from the Department of Biotechnology, Government of India, under the strengthening component.



Department of Life Sciences

Established in 2002, the Department of Life Sciences is a premier institution dedicated to fostering excellence in education and research. With a vision to equip students with the knowledge and skills essential for the rapidly evolving Life Sciences sector, the department offers undergraduate programs in Biotechnology, Microbiology, Biochemistry, Genetics, and Botany, along with postgraduate programs in Biotechnology, Microbiology, and Biochemistry. Backed by cutting-edge laboratories and a strong emphasis on research, the department nurtures scientific curiosity and prepares students for promising careers in emerging fields of Life Sciences.

Message from the Vice Chancellor



*Rev. Dr. Fr. Augustine George
Vice Chancellor*

It is a matter of immense pride and pleasure that the Department of Life Sciences of Kristu Jayanti (Deemed to be University) is bringing out the 11th edition of its annual newsletter, Synapse, for the academic year 2025–26. Over the years, Synapse has evolved into a vibrant platform that captures the intellectual energy, scientific temper, and creative pursuits of our students and faculty.

The Department of Life Sciences has consistently demonstrated academic excellence through its commitment to quality teaching, innovative research, and meaningful community engagement. By nurturing curiosity, critical thinking, and a spirit of inquiry, the department empowers students to explore the frontiers of biology and contribute responsibly to society. The 11th edition of Synapse stands as a testament to this dedication, reflecting the diverse achievements, scholarly activities, outreach initiatives, and research endeavours undertaken throughout the year.

I commend the editorial team, whose dedication and collaborative efforts have shaped this publication. As we move forward, I am confident that the Department of Life Sciences will continue to scale greater heights, fostering scientific excellence, ethical responsibility, and social commitment. I extend my best wishes for this edition of Synapse and for many more impactful milestones in the years ahead.

Message from the Head of the Department



*Dr. Priya Josson Akkara
HOD Department of Life Sciences*

It gives me immense pleasure to present the 11th edition of Synapse, the annual newsletter of the Department of Life Sciences at Kristu Jayanti (Deemed to be University) for the academic year 2025–26. This edition is a vibrant reflection of the dedication, creativity, and scientific enthusiasm that characterize our department.

Synapse brings together insightful articles contributed by our students, highlighting their academic interests, research perspectives, and innovative ideas. It also offers meaningful glimpses from the past academic year, capturing the various seminars, workshops, conferences, outreach activities, field visits, and research initiatives that have enriched our learning journey. These contributions not only showcase talent but also reflect the collaborative spirit and intellectual engagement within the department.

As we continue to pursue excellence in teaching, research, and extension, our goal remains to nurture curiosity, critical thinking, and a strong ethical foundation among our students. We believe that true education in life sciences extends beyond the classroom, fostering responsibility toward society and the environment.

I wholeheartedly appreciate the efforts of the editorial team, faculty members, and students whose commitment and teamwork have made this publication possible. May Synapse continue to inspire inquiry, innovation, and academic excellence in the years ahead.

FROM THE EDITORS..

Every edition of Synapse tells a story, and the 11th edition is no exception. As editors, we are excited to present a collection that reflects not just academic achievements, but the pulse of student life, curiosity, and exploration during the academic year 2025–26.

This issue journeys through diverse and fascinating themes, from The Secrets of the Medicinal Garden to Urban Ecosystems, from Life in a Test Tube to Biology Beyond Earth. Our contributors explore questions such as Can Your Genes Decide Your Diet and Fitness? and unravel complex ideas like Mitochondrial Dysfunction and Epigenetic Regulation in Human Disease. We celebrate innovation through features like BioNova Biobusinesses, Waste to Wealth, and Encouraging from Bench to Publications, while also highlighting culture and sustainability in Fermented Food Fiesta and Wings and Water.

Beyond the articles, this edition captures vibrant glimpses and activities of the year seminars, workshops, outreach programs, field visits, certifications, competitions, and research milestones including The Gold Standard – KJU Certification. Together, these pages document our shared journey of growth, experimentation, challenges, and achievements.

Editing this newsletter has been a meaningful experience of collaboration and creativity. We thank every student writer, faculty mentor, and contributor who trusted us with their ideas.

We hope this edition inspires you to think deeper, question further, and continue discovering the many dimensions of life sciences – within and beyond the laboratory.

Photo on the Cover page

Picture Courtesy: Abhishek Kumar Singh

Location: Medicinal Garden KJU.

Editors of Synapse' 26



Kanak Kant
23MBGE27



Abhishek Kumar Singh
23BTGE04



Sunny Gabriel
24BGBB55



Pavani A Shetty
24BGBB38



Dr. Anoja Kurian
Faculty Co-ordinator



Dr. Akanksha Dubey
Faculty Co-ordinator

INDEX

1. Secrets of Medicinal Garden	1
2. A day in the life of a KJU student	3
3. Life in a test tube	5
4. Encouraging from bench to publications	8
Fermented Food Fiesta	11
6. Urban ecosystem	14
7. Can your gene decide your diet and fitness	16
8. Waste to wealth	19
9. Bionova Biobusinesses	22
10. The Gene that waits a genetic legacy unfolding over time	25
11. Wings and Water	28
12. Mitochondrial dysfunction and epigenetic regulation in human disease	31
13. The Gold Standard- KJU Certification	34
14. Biology Beyond Earth	36
15. Events organized by Department of Life Sciences	39
16. Faculty and Student Achievements	50

01

SECRETS OF MEDICINAL GARDEN



01

Hidden from the rush of lectures and deadlines, the smart medicinal garden holds more than just plants; it holds secrets. Secrets of healing, resilience, and a quiet clarity that no science textbook can fully explain. The moment you step inside, the noise of the university fades. Overhead, vines trellis themselves across the grill, forming a natural canopy. Some plants let their buds and flowers hang down gently, as if nature itself is reaching out to be noticed. It feels magical, almost unreal, especially on quiet afternoons when sunlight filters through layers of green.

Beneath this beauty lies a world of medicinal secrets. Rare and powerful species thrive here, forming part of a collection of over 243 species of plants, many with stories that surprise even science students. These stories unfold when a simple QR code is scanned, revealing details of their scientific names, morphology, phytochemical properties, and medicinal uses. *Nothapodytes nimmoniana*, a source of compounds used in anticancer research, grows quietly beside more familiar plants. *Gymnema sylvestre*, known as the “sugar destroyer,” can temporarily block the sensation of sweetness. *Tinospora cordifolia*, often called the elixir of immortality in Ayurveda, supports immunity, while *Catharanthus roseus* stands as proof that life-saving chemotherapy drugs can originate from delicate pink flowers. Some plants, like *Abrus precatorius*, remind us that nature’s line between medicine and poison is remarkably thin.

Another quiet secret of the medicinal garden is the way it feels both still and alive at the same time. Insects, butterflies, birds, and pollinators move freely through the space, turning it into a functioning micro-ecosystem rather than a curated display. The garden changes with seasons; new leaves appear, flowers drop unexpectedly from above, and familiar pathways look different each time you walk through them. For many students, this unpredictability is part of its charm. It reminds us that science is not static; it grows, adapts, and evolves just like the plants around us.

For life science students, this garden is not just a place to admire. It is an open-air laboratory. Leaves are observed, structures studied, hypotheses formed, and curiosity sparked. It bridges theory and reality, where textbook names shed their italics and emerge as living organisms with stories rooted in function and healing.

Yet, perhaps the biggest secret of the medicinal garden is how it makes students feel. It is where many of us walk when schedules and academics feel overwhelming, where we pause to breathe, think, and slow down. In a fast-moving university, the medicinal garden stands still; teaching us that healing, like science, often works best in silence.



N Charvikasree
23BTBC22



02

A DAY IN THE LIFE OF A KJU STUDENT

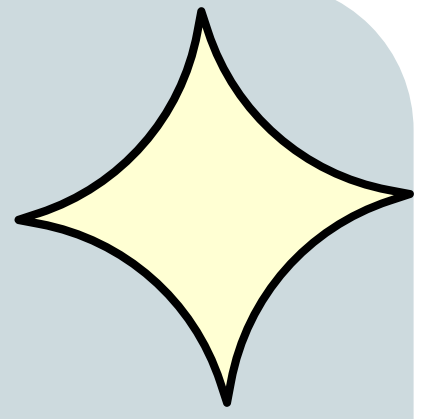
02

The average student's life begins with missing the first 3 alarms and waking up just half an hour before class. Getting ready, grabbing breakfast happens in the blink of an eye. The speed walk from the PG to campus is fast enough to put even the aunties who rise before dawn for their morning walks to shame. The rushing river of hurried footsteps slows at the university gates, welcomed by the bright, gentle smiles of our security bhaiyas and didis — protecting the campus with the quiet dedication of knights in shining armour. Then this river of students disperses to their respective classes, and the campus settles into a quiet stillness. Class begins, ideas are exchanged, challenged, and absorbed. Once in a while, a herald arrives with good news for the entire class — a free lecture, as thrilling as winning a lucky draw. Between the lectures, a short and sweet ten-minute break offers space for quick reunions in the halls, or simply a moment to step outside, breathe in the air, and stare into nothing at all to escape the monotony. The bell rings, breaking the silence of lectures. The quiet campus now roars with the laughs and giggles of the students. The canteens await with piping hot delicacies and refreshing beverages, only to be ravaged within a few minutes of lunch break.

The students at KJU do more than just study and eat heartily. As a student or a mere visitor, no one would ever be bored, for there are so many sights to see. After a long day of classes, the students gather to discuss the current affairs of their cliques either in the green park, the turf, or Chavara Square. At the basketball court, the college teams are engaged in a fierce battle to up their scores. The audience watches in awe, gasping at every clean swish and every near miss, their heads turning in unison as they follow the players across the court. At the humanities block, budding entrepreneurs sell their wares, the scene is no less than a festive bazaar. Scattered across the campus are dance crews practicing their choreos in perfect sync, a flock of birds soaring in unison in the skies. Along the campus pathway march on the NCC cadets, flawlessly with grit and sincerity, their shoulders tall and straight, carrying pride and responsibilities. The views on campus are the perfect reflection of the diversity, talent and spirit of the students of Kristu Jayanti University. Together, these moments weave a vibrant tapestry that defines campus life and makes every day unforgettable.



Shambhavi
23BTGE62



LIFE IN A TESTUBE 03





03

Originally regarded as science fiction, cultivating life in a test tube is now a common scientific practice. Tissue culture is the process of growing or cultivating desired cells, tissues, or organs on a sterile synthetic medium under carefully controlled humidity, light, and temperature conditions. It includes the growth and maintenance of living cells, tissue, or organs. There are primarily two kinds of tissue culturing: Animal Tissue Culture and Plant Tissue Culture.

In recent years, animal cell culture is one of the most significant tools in the biological sciences for research projects with commercial and economic potential. It is a kind of biotechnological method in which animal cells are cultivated artificially in an ideal environment. Each culture needs a suitable container with a medium or substrate that supplies the growth factors, hormones, and nutrients (such amino acids, carbohydrates, vitamins, and minerals) needed for cell culture. Depending on the type of cell, different culture conditions apply. Gases (O_2 , CO_2) and the physicochemical environment (pH, osmotic pressure, temperature) are crucial in determining proper cell growth in an artificial setting. Several fields, including basic and cutting-edge research, have employed animal cell culture. It has provided a model system for several research projects:

1. The study of basic cell biology, cell cycle mechanisms, specific cell functions, and cell-matrix interactions.
2. Gene therapy, which uses cells with functional genes to replace faulty genes.
3. An explanation of cancer cells and how various drugs, viruses, and radiation impact them.
5. Producing medicines, vaccines, and mABs.

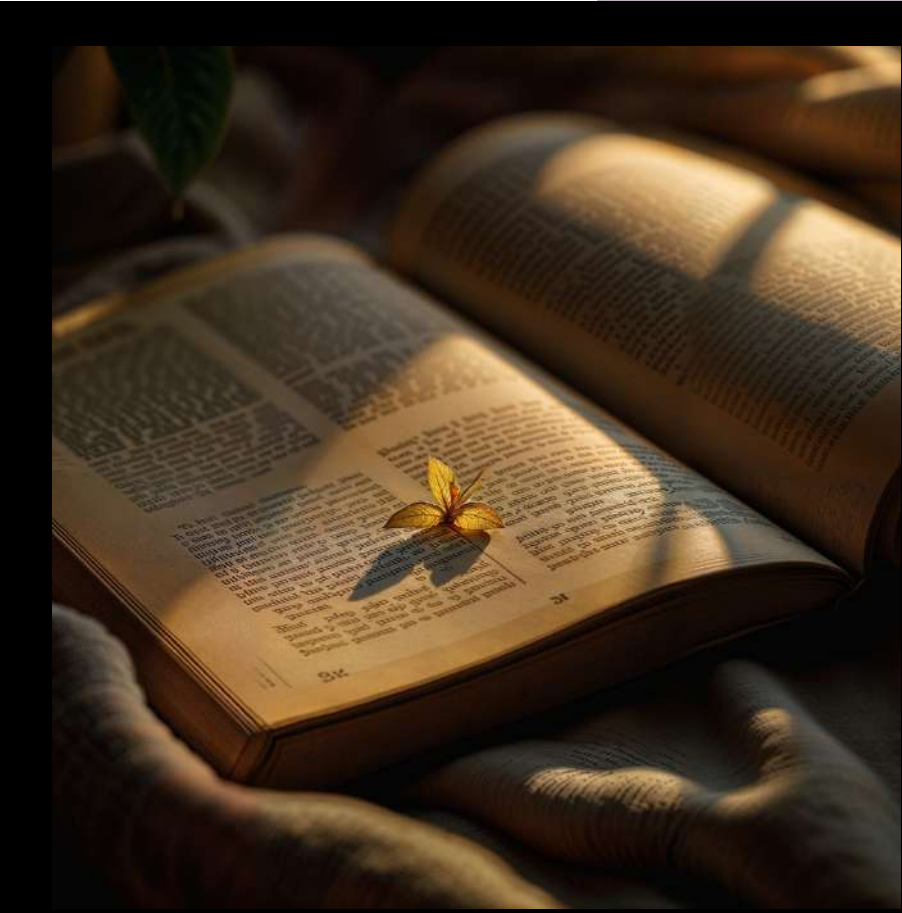
At Kristu Jayanti University, the Department of Life Sciences emphasizes hands-on training in Plant Tissue Culture as part of its commitment to applied plant biotechnology and research-based learning. Students are trained in media preparation, sterilization techniques, micropropagation protocols, and maintenance of aseptic conditions. The department actively engages students in projects focusing on rapid clonal multiplication, production of disease-free planting material, and conservation of valuable or endangered plant species.

Through well-equipped laboratories and guided mentorship, the department integrates theoretical knowledge with practical expertise, thereby strengthening skills in plant regeneration techniques and contributing to sustainable agriculture and biodiversity conservation.

Plant and animal tissue culture are essential techniques in biotechnology that enable the growth and maintenance of cells under controlled in vitro conditions. While plant tissue culture is widely used for micropropagation, production of disease-free plants, germplasm conservation, and development of improved crop varieties, animal tissue culture plays a crucial role in vaccine production, cancer research, drug testing, toxicological studies, and understanding cellular physiology. Animal cell culture techniques allow the study of cell lines, viral propagation, and recombinant protein production under sterile laboratory conditions. At Kristu Jayanti, the Department of Life Sciences provides practical exposure to both plant and animal tissue culture, training students in aseptic techniques, media preparation, cell maintenance, and experimental applications, thereby strengthening their technical competence and preparing them for careers in biotechnology, research, and the biomedical field.



Samriddhi Singh
23BTGE72



04

ENCOURAGING FROM BENCH TO PUBLICATIONS



04

When a student enters the world of higher education, each one has come to hear the word Publication. In the field of academics, publishing is the distribution of academic research to the public through journals. Researchers and scientists publish their experimental results, reviews, thoughts, and case studies in their specific field.

In the dynamic landscape of life science, research serves as the key factor in pushing the boundaries of the field, innovations, development of new drugs and treatments, understanding molecular mechanisms of the biological processes, agriculture, environmental conservation, and the list is infinite. But these researches, if they are only known to the research team and the institution, it won't contribute to society or the world. So, publication is like a vehicle for transferring the thoughts of every researcher to the world.

Publication serves as a guiding light for career growth by making a student's work visible and credible. When students publish in reputed journals or present at conferences, it highlights their knowledge, commitment, and meaningful contribution to science. Such achievements strengthen their academic profile and signal their readiness to become future innovators and leaders in their field.

The paper publishing journey entails conducting research, writing a manuscript, submitting it to a journal for review, peer review, and revisions, and ultimately, publishing it. Through these stages, various challenges are encountered, including exorbitant costs of publishing, inaccessibility, a lack of transparency, and restrictions on research access. In light of these challenges, various models aimed at solving these problems include publishing through open access journals, preprints, responsible journals to submit to, transparent peer reviews, and proper reviewer credit. These various strategies aim to facilitate easier access, affordability, transparency, and benefits for both the scientific communities and society at large.

The Department of Life Sciences at Kristu Jayanti College strongly promotes the philosophy of "Encouragement from Bench to Publications," fostering a research-driven academic environment. Students are guided from the initial stages of laboratory experimentation to the final stages of manuscript preparation and publication..

Through structured mentoring, hands-on laboratory training, research methodology workshops, and sessions on scientific writing, the department equips students with the skills required to transform experimental findings into quality research papers. Faculty members actively support students in designing projects, analyzing data, interpreting results, and presenting their work at conferences and seminars.

This culture of research excellence is further strengthened by focused initiatives to support student publishing. The department has established undergraduate research programs that encourage students to work on real-time projects under faculty guidance. Regular workshops on research methodology, biostatistics, and the publication process provide essential academic grounding. Publication is further promoted through research grants and financial support mechanisms, along with access to renowned journals to reduce financial barriers. Peer-review clubs enable students to share drafts and receive constructive feedback before submission, and interdisciplinary as well as inter-college collaborations are actively encouraged. The department also organizes research symposiums, conferences, and poster sessions to provide platforms for scholarly dissemination.

A significant milestone in this journey from bench to publication is the Kristu Jayanti Journal of Core and Applied Biology (KJCAB), the official academic journal of the Department of Life Sciences. KJCAB serves as a dedicated platform for publishing quality research articles, review papers, and short communications in core and applied biological sciences. By encouraging contributions from faculty members, research scholars, and students, the journal reinforces the department's commitment to academic excellence, innovation, and scientific dissemination.

Encouraging students to move from the bench to publication helps to promote scientific thinking, writing, and confidence. The result of this will be the responsible scientist who can take their work and contribute to science, and help to shape a future generation of innovative researchers.

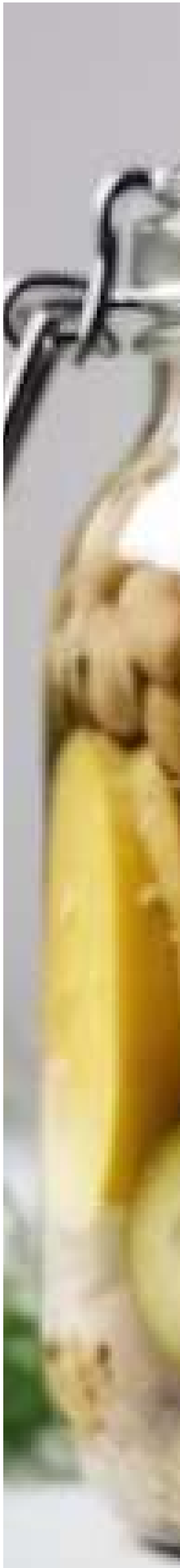


Reshma Hedge
23MBGE38

05

FERMENTED FOOD FIESTA





05

Well before the invention of the refrigerator, preservatives, or the sealable package, there existed an unlikely collaborator in the preservation of food, “microbes”. What started out as a method of survival has now developed into an art form that spawned the oldest food cultures in the world: “fermentation”. Fermentation breaks down sugars and starches, producing complex flavours and aromas, like the sour taste of sourdough bread or the fizz in kombucha are all a result of this process.

In an era characterized by overly processed and sanitized foods, fermented foods introduce microbial diversity that our bodies need. They are highly nutritious because they are high in probiotics that boost the immune system and improve digestion. Adding these foods into one's diet is more than searching for flavors; it is a journey towards wellness.

However, the real “fiesta” commences when the art of fermentation extends from the kitchen shelf to the markets. Traditional fermented foods, earlier packed in small bottles at local markets, are now generating a multibillion-dollar industry which is displayed on desirable shelves as well as on Internet platforms around the world.

This is reflected in the change that is seen in the eco-system of the Kristu Jayanti University, where entrepreneurs from the university are using traditional knowledge about fermentation to create innovative products with health-oriented branding. Online sales have acted as an acceleration factor for such products, where the products have been able to educate consumers about their health-related aspects.

The Department of Life Sciences organized the Food Fiesta, offering visitors an engaging and informative exploration of the fascinating and essential role microbes play in our daily lives. The event emphasized the importance of fermented foods in promoting gut health, improving digestion, and enhancing overall well-being. Through interactive exhibits, live demonstrations, and informative displays, students showcased the science behind fermentation and its practical applications in traditional and modern diets.

Participants also highlighted the diversity of fermented foods across cultures and their long-standing significance in Indian households.

A large, vertical image of a white bowl filled with a light-colored soup, topped with chopped green onions. The bowl is placed on a brown woven placemat. The image is partially obscured by a large, light brown rectangular area that contains text.

The event aligned with Bengaluru's growing interest in fermentation, as reflected in initiatives such as the Namma Oota Food Festival, which celebrates fermentation and its rich cultural heritage. Overall, the Food Fiesta successfully combined science, culture, and health awareness, creating a meaningful learning experience for all attendees.

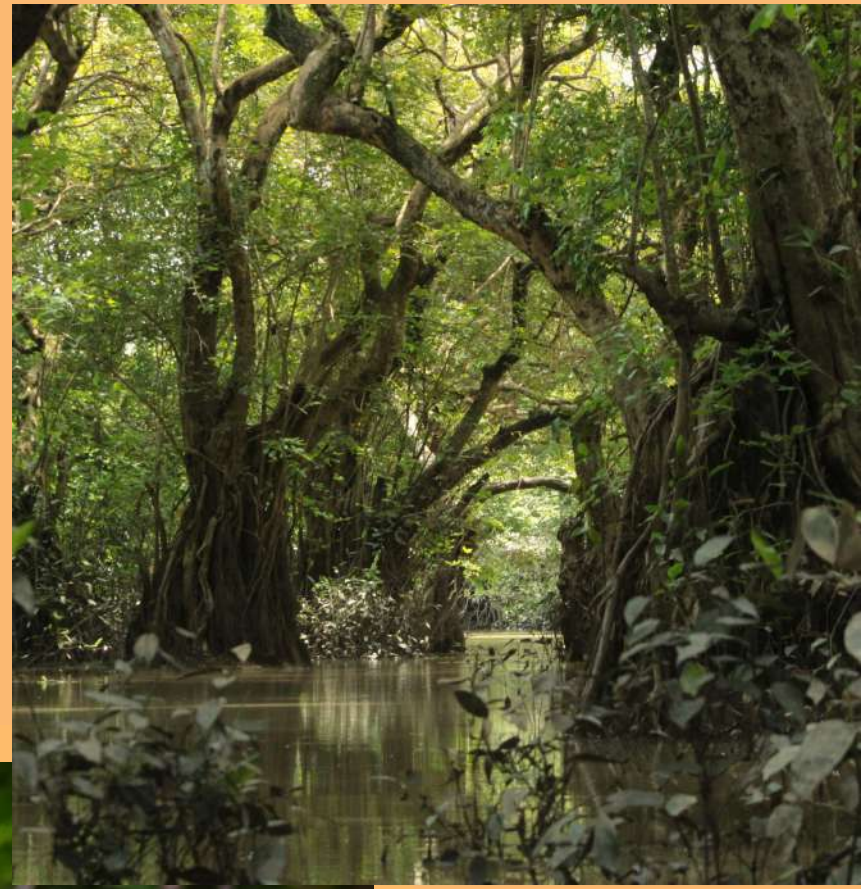
Fermented Food Fiesta is not just another trend that will fade away soon. It symbolizes the comeback of mindful consumption, ancient knowledge, and nature's gifts that are truly nourishing. From the humble jar to the rapidly expanding market, fermented foods are no longer merely consumer products but, rather, a triumph of health, taste, and tradition merging as one.



M Swapnil
24BGBA31

06

AN URBAN ECOSYSTEM





06

Kristu Jayanti University has active green and biodiversity initiatives within its green campus. It holds a gold rating under the AICTE-IIWM Green Campus Certification, recognizing its sustainable practices, renewable energy use and extensive green cover.

It offers floral diversity featuring a rich collection of plant species and a medicinal garden with more than 243 plant species. The garden supports students and visitors learning about medicinal and aromatic plants with more than 243 species, blending education with conservation.

In biodiversity audit of the campus grounds (9.7 acres), there were about 14,662 trees, plants and shrubs recorded belonging to 101 plant species and 380 species.

Although the fauna documentation is still going on, early records need to emphasize the need to log birds, butterflies, insects and other animal life to understand their roles in campus ecology.

Trees such as Neem (*Azadirachta indica*), Peepal (*Ficus religiosa*), Ashoka (*Polyalthia longifolia*), Rain Tree (*Samanea saman*). Shrubs such as Hibiscus, Bouganvillea, Ixora. Medicinal Plants- Tulsi, Lemongrass, Aloe Vera.

Carpet grasses and seasonal flowering plants for aesthetic and ecological value.

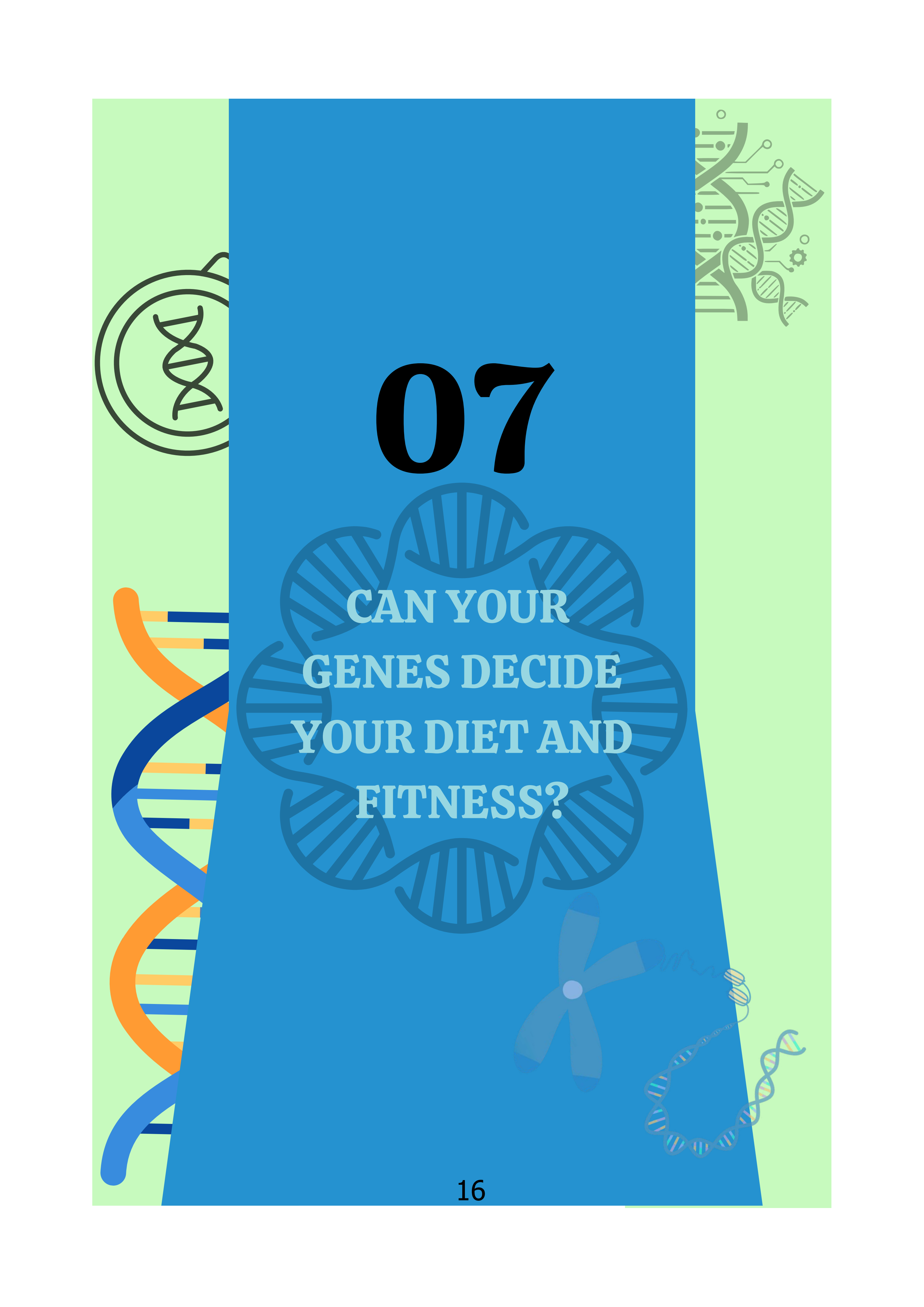
Despite being an urban campus, KJU supports various lives:

Birds such as House sparrows, Common Myna, Rock pigeons, Crows, Parakeets. Insects like butterflies, bees, ants, beetles. Reptiles like Garden lizards and geckos. Small mammals such as squirrels and rodents. Soil fauna like earthworms and termites important for soil health.

Urban Ecosystems are vibrant, dynamic environments where nature and humans intersect. Counting and monitoring flora and fauna, as practiced through initiatives at Kristu Jayanti University, not only enhances biodiversity knowledge but also fosters a conservation ethos in academic communities. As cities expand, such efforts become indispensable for sustaining ecological balance and nurturing future environmental scientists. The university campus thus serves as a living laboratory and a model for sustainable urban ecosystem management.

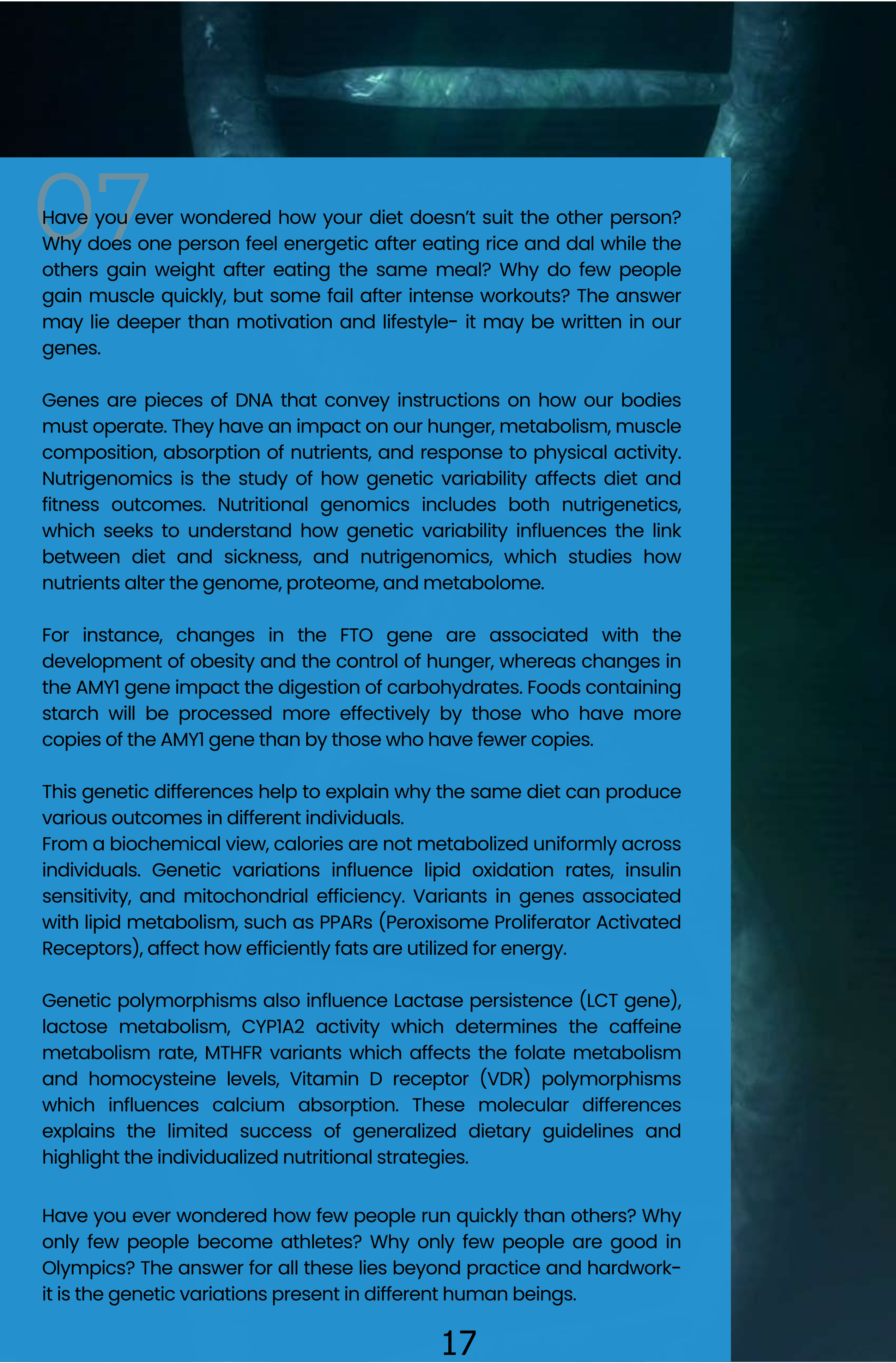


Chehak Kataria
25MGBA11

The background is a vibrant blue with light green vertical stripes on the left and right. It is decorated with various scientific and genetic motifs: a large DNA double helix on the left, a circular DNA helix in the top left, a cluster of DNA helices and circuitry in the top right, a stylized flower-like shape in the bottom right, and a circular DNA helix in the bottom right. The text is centered in the blue area.

07

**CAN YOUR
GENES DECIDE
YOUR DIET AND
FITNESS?**



07

Have you ever wondered how your diet doesn't suit the other person? Why does one person feel energetic after eating rice and dal while the others gain weight after eating the same meal? Why do few people gain muscle quickly, but some fail after intense workouts? The answer may lie deeper than motivation and lifestyle- it may be written in our genes.

Genes are pieces of DNA that convey instructions on how our bodies must operate. They have an impact on our hunger, metabolism, muscle composition, absorption of nutrients, and response to physical activity. Nutrigenomics is the study of how genetic variability affects diet and fitness outcomes. Nutritional genomics includes both nutrigenetics, which seeks to understand how genetic variability influences the link between diet and sickness, and nutrigenomics, which studies how nutrients alter the genome, proteome, and metabolome.

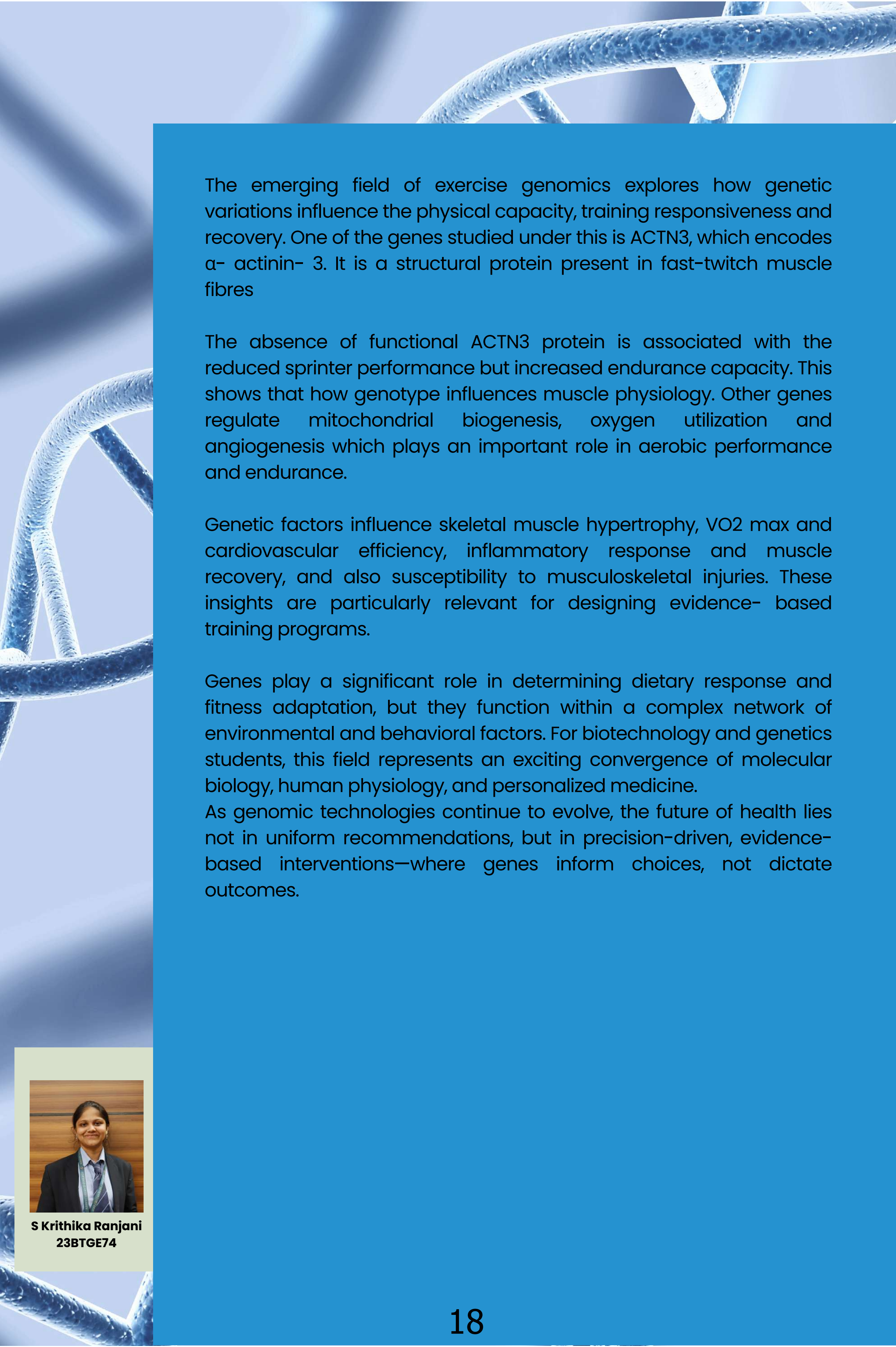
For instance, changes in the FTO gene are associated with the development of obesity and the control of hunger, whereas changes in the AMY1 gene impact the digestion of carbohydrates. Foods containing starch will be processed more effectively by those who have more copies of the AMY1 gene than by those who have fewer copies.

This genetic differences help to explain why the same diet can produce various outcomes in different individuals.

From a biochemical view, calories are not metabolized uniformly across individuals. Genetic variations influence lipid oxidation rates, insulin sensitivity, and mitochondrial efficiency. Variants in genes associated with lipid metabolism, such as PPARs (Peroxisome Proliferator Activated Receptors), affect how efficiently fats are utilized for energy.

Genetic polymorphisms also influence Lactase persistence (LCT gene), lactose metabolism, CYP1A2 activity which determines the caffeine metabolism rate, MTHFR variants which affects the folate metabolism and homocysteine levels, Vitamin D receptor (VDR) polymorphisms which influences calcium absorption. These molecular differences explains the limited success of generalized dietary guidelines and highlight the individualized nutritional strategies.

Have you ever wondered how few people run quickly than others? Why only few people become athletes? Why only few people are good in Olympics? The answer for all these lies beyond practice and hardwork- it is the genetic variations present in different human beings.



The emerging field of exercise genomics explores how genetic variations influence the physical capacity, training responsiveness and recovery. One of the genes studied under this is ACTN3, which encodes α -actinin-3. It is a structural protein present in fast-twitch muscle fibres

The absence of functional ACTN3 protein is associated with the reduced sprinter performance but increased endurance capacity. This shows that how genotype influences muscle physiology. Other genes regulate mitochondrial biogenesis, oxygen utilization and angiogenesis which plays an important role in aerobic performance and endurance.

Genetic factors influence skeletal muscle hypertrophy, VO₂ max and cardiovascular efficiency, inflammatory response and muscle recovery, and also susceptibility to musculoskeletal injuries. These insights are particularly relevant for designing evidence-based training programs.

Genes play a significant role in determining dietary response and fitness adaptation, but they function within a complex network of environmental and behavioral factors. For biotechnology and genetics students, this field represents an exciting convergence of molecular biology, human physiology, and personalized medicine.

As genomic technologies continue to evolve, the future of health lies not in uniform recommendations, but in precision-driven, evidence-based interventions—where genes inform choices, not dictate outcomes.



S Krithika Ranjani
23BTGE74

08

WASTE TO WEALTH





08

What if yesterday's cafeteria leftovers could power today's stoves? Most of us walk past waste bins without a second thought, but hidden behind these simple acts is something extraordinary: a quiet revolution turning campus waste into valuable resources.

Kristu Jayanti University doesn't just talk about sustainability; it lives it. With a Gold-rated Green Certificate from AICTE, the university has established one of the region's most comprehensive waste management systems. The story unfolds in the biogas plant humming near the hostel kitchen, the vermicompost units where earthworms work their magic, and the smart bins alerting staff before overflowing.

Every day, kitchen waste gets a second life. Food scraps and vegetable peels are treated in the biogas plant, serving as an alternate energy source, while leachate enriches campus gardens as manure. It's a perfect cycle: waste becomes energy, energy prepares meals, and the process continues.

The vermicompost unit showcases nature's recyclers transforming wet waste into biofertilizer. Walk through the medicinal garden with its 243 plant species and over 40% green cover, and witness the results of this transformation.

The sewage treatment system is equally impressive. Plants with 90,000-litre and 20,000-litre capacities recycle all campus wastewater through grit removal, clarifiers, filtration, and UV disinfection. Clean water emerges safe for gardening and flushing, dramatically reducing freshwater consumption. Rainwater harvesting tanks with 49 lakh litres capacity further strengthen water conservation.

Paper waste reaches authorized recycling units through ITC Pro Enviro Recycling's Wealth out of Waste program. Electronic waste is responsibly handled via Sonal Metacop, preventing toxic materials from poisoning the environment.

What makes this work is participation. Exclusive support staff manage waste collection and segregation. Every time students separate waste correctly or refill water bottles, they contribute to this transformation.

On busy days when assignments pile up, it's easy to forget the bigger picture. Yet there's something calming about knowing your campus is a living experiment in sustainability. The waste we create transforms into fuel, fertilizer, and clean water.

The next time you notice the lush green cover or walk past a waste bin, remember: you're part of a system proving waste isn't the end. It's the beginning of something valuable.

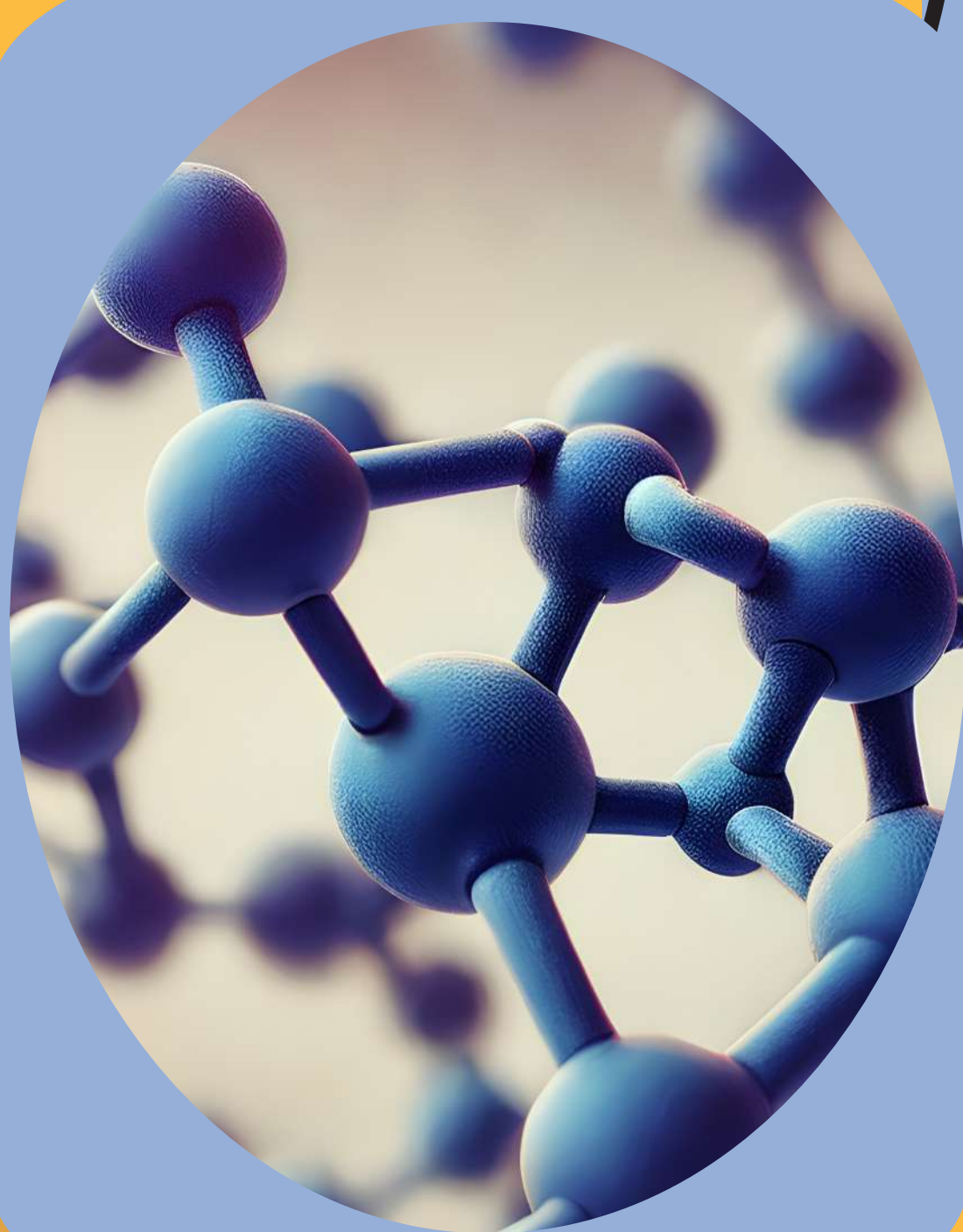
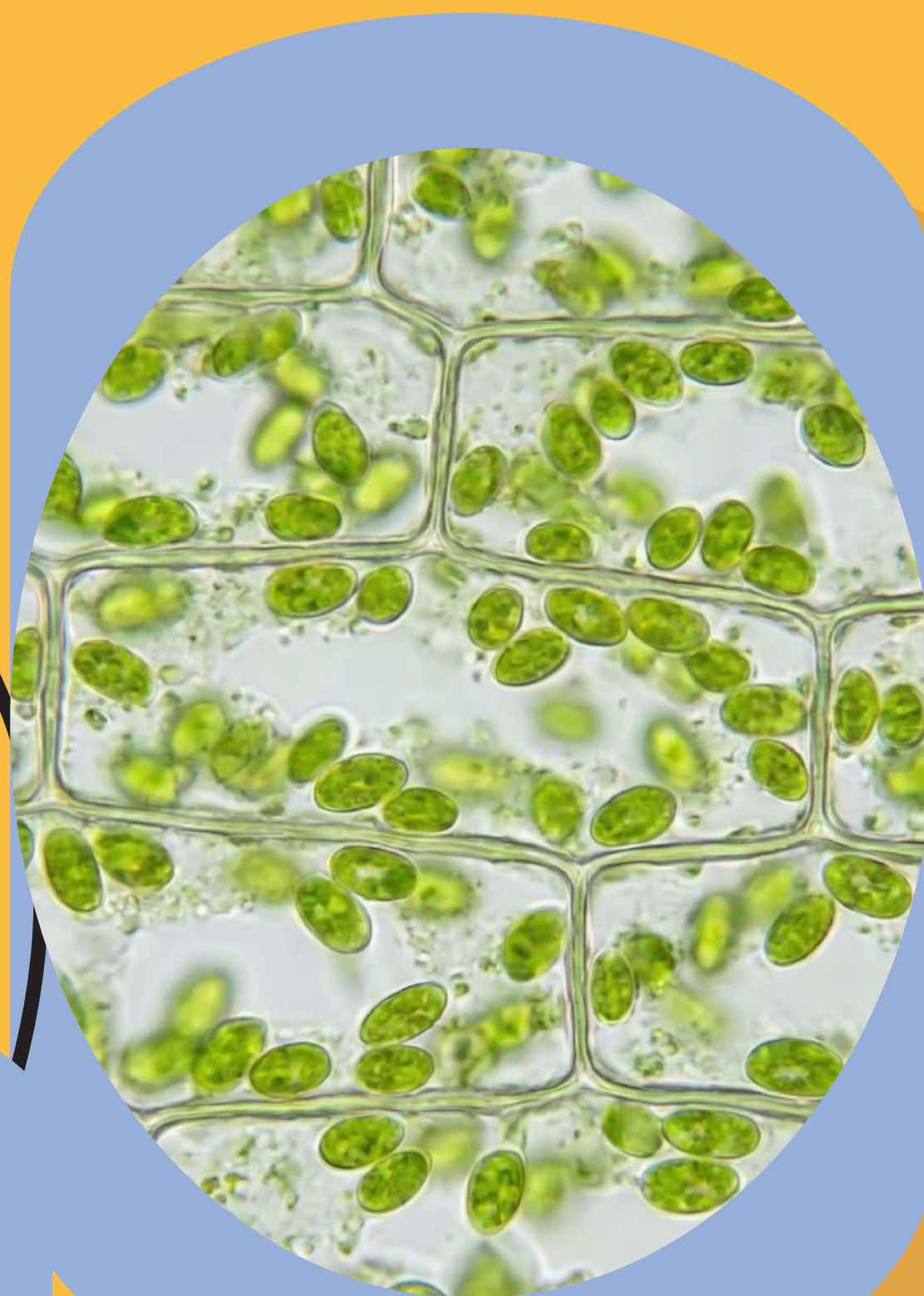
Because here, waste isn't waste at all. It's wealth woven into campus life.



Divya S Hugar
23BTBC34

09

BIONOVA BIOBUSINESSES





Kristu Jayanti University is another hope of the future of entrepreneurs in life science in the heart of the dynamic innovation ecosystem of Bengaluru. From August 2024 through the Biopreneurship Cell of the Department of Life Sciences with the Entrepreneurship and Innovation Centre, the BioNova is a life science startup initiative designed to enable students to create sustainable business ventures based on their scientific concepts.

BioNova presents the disconnect between the research and commercialisation of biotechnology and develops a new generation of bioentrepreneurs. The course targets undergraduate and posgraduate students of life sciences giving them the required knowledge in business planning, intellectual property strategy, product development and market viability. The subjects are trained to ideate, prototype, and pitch bioproducts that can involve fermented foods and herbal remedies, and sustainable agri-solutions, using a curricular program.

Fundamentally, BioNova has oriented itself on mentoring practices. The Biopreneurship Mentoring Series is a series of seminars organized by professionals on such critical issues as quality certification of bioproducts, entrepreneurial mind formation, and commercialization of research. The information on the world trends of fermented foods and wellness products is given by external partners including experts in Chiang Mai University, Thailand. Encountering other successful alumni and industry leaders also enable the students to learn the practical knowledge of how to deal with the challenges of startups.

One can already observe the impacts of the program. Since its inception, BioNova has been able to assist several student initiated projects via the Biopreneurship Club. The most notable ones include the Agri Foods Private Limited (agricultural innovations), Appachi Pvt Ltd (recovery of the traditional health remedies), Cervam Private Limited, Thrive Ups Pvt Ltd (urban gardening) and Paramparika among the most significant startups. These companies have participated in exhibitions, trade fairs globally and at least given birth to their own small entities with the initiators being masters of Biotechnology graduates.

The members of BioNova are also given an opportunity to access the modern laboratories to develop their products and also be incubated as well as to connect with other incubators like the C-CAMP. The show is aligned to the new bioeconomy of India that supports innovations in health, agriculture and sustainability.

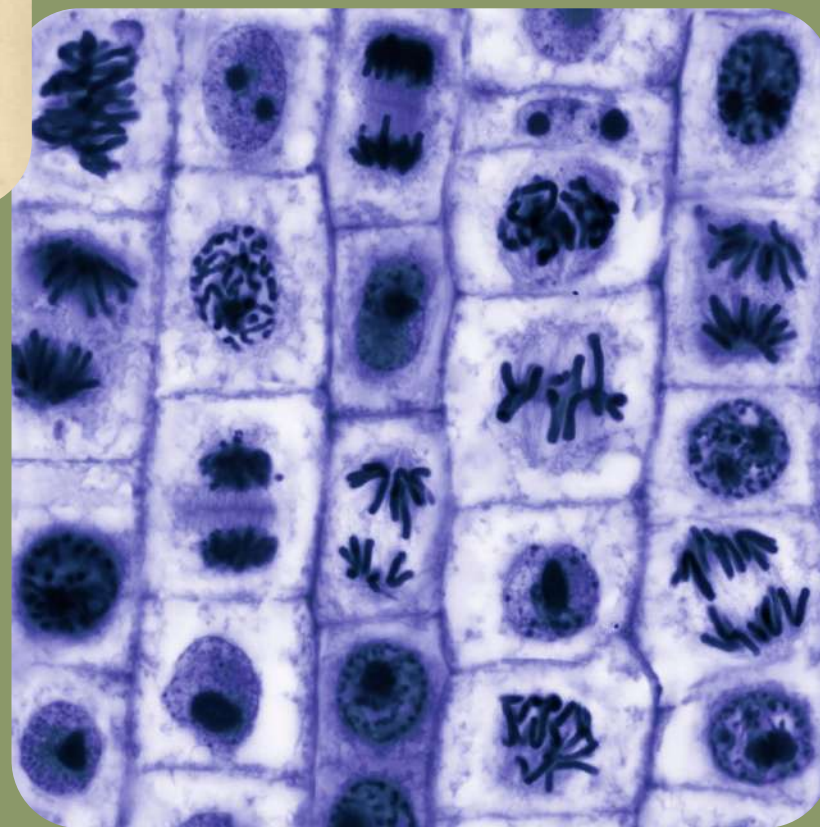
As Kristu Jayanti University continues to expand, the latest news in this regard is that the university has recently been granted deemed university status in 2025 which makes BioNova an illustration of how the university is committed to comprehensive learning and service to society. The program does not only offer jobs to those who provide employment, but also makes the world a better place to live in by converting the findings in the laboratory into lucrative businesses. It can be made a reality to life science students who wish to become entrepreneurs through the platform of BioNova.



Tilisha
24MGBA33

10

**THE GENE THAT WAITS A
GENETIC LEGACY
UNFOLDING OVER TIME**



10

Isn't it both intriguing as well as concerning to realize that a microscopic entity serves as the remote control of your life? A minor alteration in this entity could entirely transform your existence.

Variations at the gene or chromosomal level are usually the cause of genetic disorders, which manifest as a variety of abnormalities. These differences could be brought on by changes in the DNA sequence that result in frameshift or point mutations, or they could be brought on by changes in the chromosome that result in aneuploidy or polyploidy. These conditions can arise during gamete production or in the early stages of embryonic development, and they can be inherited from one or both parents. These conditions primarily impact intellectual capacity, general health, and physical development. Huntington's disease is a particularly deadly neurological syndrome among the many genetic disorders resulting from such mutations.

Like a grave horoscope inked at birth, whose lines cannot be erased, Huntington's disease carries a destiny written in the blood, revealing itself gradually, chapter by chapter. Huntington's disease is a rare, progressive neurodegenerative disorder and marked by the gradual deterioration of the specific nerve cells in the brain, frequently impacting movement, cognition and behaviour.

Huntington Disease (HD) exhibits an autosomal dominant inheritance pattern. This disorder arises from a mutation in the HTT gene located in the chromosome number 4 and typically manifests in adulthood, generally between 30-50 years of age though juvenile forms also exist. This disorder is one where both male and female have an equal livelihood of being affected, with a 50% chance of being transmitted to their offspring. Currently there is no cure for Huntington Disease and comprehensive care is necessary during the advanced stages.

Huntington Disease is one of the trinucleotide repeat disorders which occur when the length of a repeated segment of a gene surpasses the normal range. The HTT gene is located in the shorter arm of chromosome 4 at position 4p16.3. It comprises of a sequence of three DNA bases- cytosine, adenine, and guanine (CAG) that is repeated numerous times.

CAG codes for the amino acid glutamine and a succession of these codons leads to the formation of a chain of glutamine known as a polyglutamine tract.

Typically healthy individuals possess fewer than 36 repeated glutamines in the poly Q region, which further results in the synthesis of the cytoplasmic protein huntingtin. A sequence of 36 or more glutamines lead to the production of a protein with distinct characteristics, further leading to the modified form termed as mutant huntingtin (mHtt) thereby accelerating the decay rate of certain neuronal types. Generally, the number of CAG repeats correlates with the extent to which this process is influenced, accounting for approximately 60% of the variability in the age at which symptoms manifest.

The presence of mutant huntingtin results in abnormal protein folding and aggregation within neurons, disrupting normal cellular functions. These aggregates hinder transcriptional regulation, mitochondrial function, and intracellular transport, ultimately leading to neuronal dysfunction and death. Neurons in the striatum, especially the medium spiny neurons, are particularly vulnerable, which explains the significant motor and cognitive impairments observed in affected individuals. As the neuronal degeneration progresses, patients gradually display characteristic symptoms such as involuntary movements, impaired coordination, cognitive decline, and psychiatric disturbances. The disease advances in a manner that causes symptoms to deteriorate over time, significantly affecting quality of life.

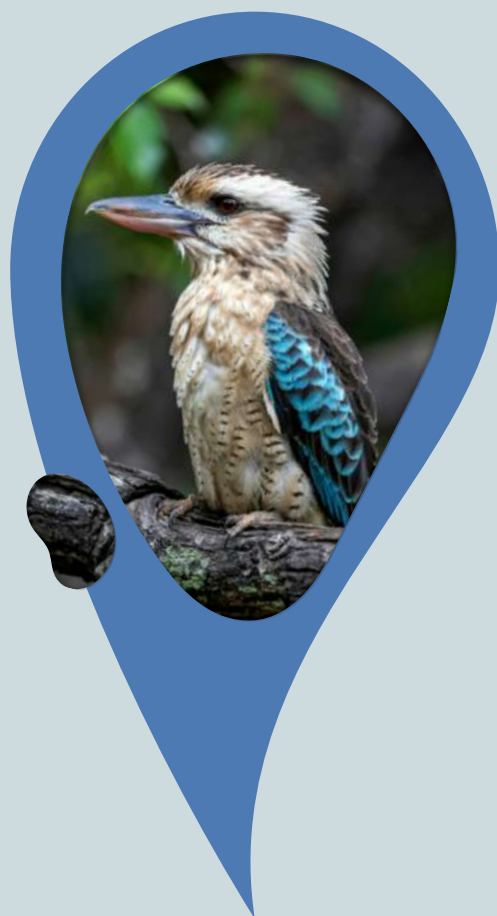
A single mutation in the HTT gene causes gradual and permanent neurodegeneration in Huntington's disease, a well-defined hereditary illness. Its late onset, trinucleotide repeat expansion, and autosomal dominant inheritance illustrate the profound impact that small genetic variations can exert on human health. Furthermore, understanding the genetic foundation of Huntington's disease not only aids in early diagnosis and genetic counseling but also provides crucial insights into the molecular mechanisms that drive neurodegenerative disorders, paving the way for potential future therapeutic strategies.



Nandan Menon
23BTGE46

11

WINGS AND WATER



11

As the cold winter moon sets and the scorching summer sun begins to rise, everyone makes sure that they have full access to the one resource that saves them from the unbearable heat: Water. This refreshing elixir works as an antidote for the sweltering waves of heat, not only for us humans, but also for our animal companions.

As part of its commitment to environmental stewardship and compassion toward all living beings, the Department of Life Sciences at Kristu Jayanti University actively undertakes the initiative titled “Wings and Water: A Summer Savior for Birds.” During the scorching summer months, when natural water sources become scarce, earthen water bowls are thoughtfully placed across the campus to provide relief to birds and small urban wildlife. This simple yet impactful initiative reflects the department’s deep respect for biodiversity and ecological balance.

Being a department dedicated to the study of life, we believe that caring for living organisms extends beyond laboratories and classrooms. By ensuring access to water for birds, we promote coexistence, environmental responsibility, and empathy among students. The initiative also serves as a practical lesson in conservation biology and urban ecology, sensitizing students to the challenges faced by wildlife in rapidly urbanizing environments. Through such meaningful actions, the Department of Life Sciences reinforces its core value—celebrating, protecting, and sustaining life in all its forms.

Birds have very high metabolic rates (as their bodies must generate enough energy to lift their weight against gravity), hence they lose water very quickly. This causes rapid dehydration, in fact in summer dehydration can occur within hours. Drinking fresh water keeps their blood circulation, digestion, organ function and feather health normal while preventing dehydration. Moreover, birds do not sweat. Water helps them cool down as it evaporates from feathers and lowers the body temperature.

Sun Conure (Aratinga solstitialis)

If you look inside the small bird cage besides the big one, you will spot a vibrantly colored bird with a loud and energetic personality. This is the Sun Conure, known for its brilliant yellow, orange and green plumage, native to northeastern South America.



Java sparrow (*Lonchura oryzivora*)

Another plump fife in one of the small cages is the one with a black head, characteristic white cheeks and a very thick pink beak. The Java Sparrows, native to Indonesian islands of Java, Bali and Bawean, are highly gregarious birds that live in large flocks when in the wild. Communal gatherings to drink from water sources like puddles and bird baths is common. Their diet largely consists of dry seeds and grains, and hence, they require regular excess to water to stay hydrated. They often combine drinking with bathing, using available water sources for both hydration and feather maintenance.

The Budgerigar

One of the most common cage birds, the budgies can be found in many numbers and colours in the big cage. Native to Australia's dry plains and grasslands, get most of their moisture from fresh foods. They drink small amounts of water frequently, often after feeding. Constant heavy drinking can be a signal of underlying illnesses like polyuria. Drinking patterns are mostly seen in the morning in these vibrant seed-eating parrots.

These birds are provided with a fresh supply of water everyday but the birds in the wild have to find water using sharp vision for shiny surfaces, hearing flowing sounds and following other animals.

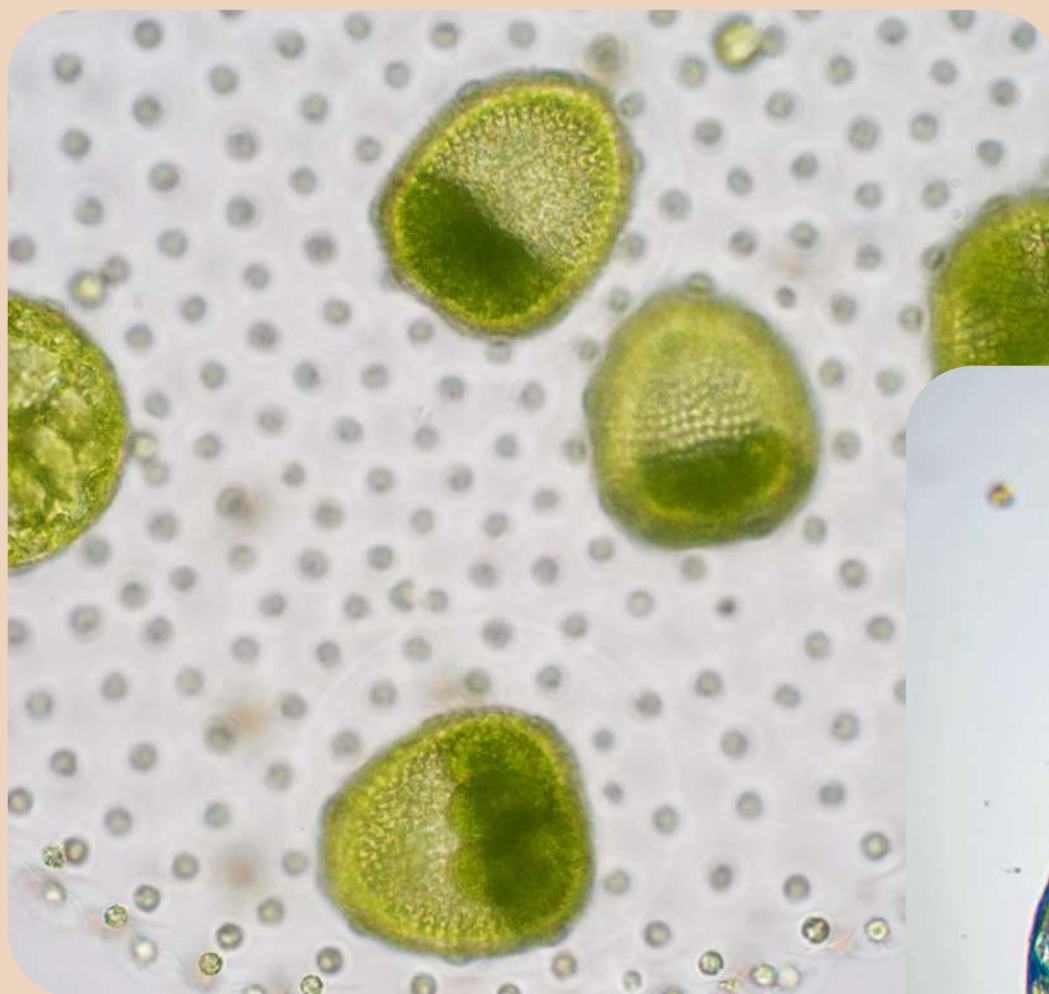
If you have caged birds at home or are planning to get some, here are a few tips to keep them well hydrated!



Shaurya Patil
23BTBC24

12

MITOCHONDRIAL DYSFUNCTION AND EPIGENETIC REGULATION IN HUMAN DISEASE





12

It is the one area that serves as a link between the illness and the methods of therapy. One of the fields that is flourishing and will play a significant part in future treatments. Mitochondrial dysfunction and epigenetic regulation are two of the new ideas in molecular genetics that have garnered significant attention in relation to cellular homeostasis and disease development. The majority of recently published articles indicate that they have a role in the development and course of a number of complicated human disorders.

One of the earliest known types of DNA is mitochondrial DNA, which is found in mitochondria, and was a turning point in the history of human ancestry and was employed in numerous investigations. Because they produce ATP for cellular processes and controls, mitochondria are referred to as the "powerhouse of the cell." Any damage to mitochondrial DNA may result in decreased mitochondrial biogenesis and an imbalance in the processes of mitochondrial fusion and fission, which could worsen the course of the disease and cause problems with energy metabolism, excessive production of reactive oxygen species, and altered signalling pathways. It may also be linked to metabolic syndromes, cancer, and neurodegenerative diseases.

The field of epigenetics studies how genes can change without actually changing DNA sequences. Histone modifications, non-coding DNA regulation, and DNA methylation are important epigenetic marks. These systems play a significant part in controlling how the body reacts to pollution, pollutants, stress, and food. Diabetes, neurological conditions, age-related illnesses, etc., can result from any gene error. One significant benefit of epigenetics is its reversibility, which makes diseases curable and makes it a target for therapeutic intervention. According to recent research, mitochondria affect epigenetic alterations via controlling the availability of metabolic intermediates that are necessary for DNA methylation and histone modification activities, such as acetyl-CoA, NAD⁺, and 3-adenosylmethionine. Therefore, any type of epigenetic disruption will result in mtDNA-altered biogenesis and functions, demonstrating the crucial molecular connection between cellular and systemic illness outcomes and environmental exposure.



This comprehension clearly establishes a stage for treatment as well as an opportunity for identification. Insulin resistance and obesity may result from changes to epigenetic genes that impact mitochondrial energy metabolism. In a metabolic neurodegenerative conditions, neuroprotective gene silencing speeds up oxidative stress and neuronal death.

With all the information now accessible, we can create a fundamental foundation for comprehending the molecular causes of complicated human disorders. In cancer, epigenetic instability results in unchecked cell growth and therapeutic resistance. Researching this interaction advances our knowledge of disease mechanisms and creates new opportunities for early diagnosis, precision medicine, and a range of focused treatment approaches. A promising avenue for molecular medicine research is represented by this integrated approach.



THEJASWINI V S
23BTGE66

13

THE GOLD STANDARD- KJU CERTIFICATION





13 In an age where climate change is the biggest problem, it is becoming a responsibility that every campus must do something. That is why I take much pride in the fact that Kristu Jayanti University (KJU) has recently received a Gold level Green Certification. It demonstrates that campus is not only talking about sustainability, but it is living sustainably.

Green Certification is not something that is just given away. By winning it, the institutions are demonstrating that they live by actual environmentally conscious practices and pass stringent environmental inspections. Gold rating implies that KJU has nailed the energy saving, smart water usage, waste reduction, abundance of green overlay, and environmental awareness. It is not the instant success but the outcome of the years of regular work.

The green Campus Initiatives of KJU are one of the things which is really impressive. All the students are able to notice waste bins with labels clearly marked as recycle, the college is reducing consumption of single use plastics. The extensive green lawns, the planting of trees and the biodiversity corridors make the campus breathable and provide us with the chill atmosphere within which to study.

We do not sit around on teachings about sustainability either. The university is challenging us to switch our phones off and really participate in it, through clean-up drives, plant-downs, eco-clubs we learn just what environmental responsibility would look like, not in the lecture theatre. It makes policy a daily habit and in such a way, the entire university culture is impacted by it.

KJU can use environmental audits to keep track of all things, and this includes where they are exhibiting good performance and areas where they can improve their performance. Such transparency keeps the university on a consistent course of greater standards, demonstrates that there is an apparent strategy to carry on with progress. And it does not begin and end at the gates of the campus. The certification adds more fame to KJU .

In other words, Gold Green Certification delivered by KJU is not only a glittering badge but a responsible leadership, an active environmental learning, and a great thrust towards a more environmentally friendly future. Prioritizing sustainability, KJU demonstrates that students and universities can be the facilitators of the actual change and can build the future in which everyone is a little more environmentally aware.



LAKSHMIPRIYA SAHOO
25BTGB35



14

**BIOLOGY
BEYOND
EARTH**





14

What if the next breakthrough cure for a deadly disease isn't discovered in a high-tech laboratory on Earth, but in a spacecraft orbiting 400 kilometres above us? This is not science fiction but a budding reality happening far away from earth. As humans push the boundaries of space exploration, biology is quietly undergoing a revolution beyond our planet. This emerging field, space biotechnology is transforming how we understand life, health, and survival, both in space and on Earth. Space biotechnology is not a recent development; its roots go back to the very beginning of space exploration.

Early biological experiments in space were primarily designed to understand how microgravity affects living systems. In the 1970s and 1980s, space agencies like NASA and the European Space Agency (ESA) carried out extensive studies on platforms such as Skylab and Spacelab. These experiments investigated changes in microbial behaviour, cellular functions, and protein synthesis under spaceflight conditions. The findings from these early studies showed that microgravity can enhance certain biological phenomena, notably protein crystallization, which has since contributed to advances in drug discovery and structural biology research. Scientists study how life responds when gravity, a force that has shaped evolution for billions of years, is suddenly removed. When gravity is reduced or absent, biological systems behave differently and sometimes in surprising ways.

One of the most extensively studied benefits of microgravity is its effect on protein crystallization, an essential process in pharmaceutical development. Under Earth's gravity, convection currents and sedimentation often interfere with crystal formation, resulting in irregular and lower-quality protein crystals. In contrast, the microgravity environment allows proteins to form more uniform crystals with minimal defects.. This advantage has been utilized for several decades in space-based pharmaceutical research, contributing to the creation of drug formulations with improved stability and therapeutic effectiveness. Notable discoveries include, Merck's Research on the International Space Station (ISS) with the cancer drug ingredient pembrolizumab (Keytruda) successfully produced more uniform crystals in microgravity.



Microgravity also has a profound influence on three-dimensional (3D) tissue culture and biofabrication by enabling cells to grow and interact in ways that are difficult to achieve on Earth. Terrestrial gravity restricts the structural complexity of engineered tissues, often necessitating artificial scaffolds to maintain their architecture. In space, however, cells can self-organize into more physiologically realistic 3D structures without external support. In 2023, Redwire Space achieved a significant milestone in space-based bio-printing when their Bio-Fabrication Facility (BFF) successfully produced a human knee meniscus on the International Space Station .

This ground breaking experiment, known as BFF-Meniscus-2, utilised living human cells in bio-inks to create the first full human knee meniscus bio-printed in space. The printed meniscus was then cultured for 14 days using Redwire's Advanced Space Experiment Processor (ADSEP) to solidify the structure . This achievement showcases the potential of microgravity environments for creating complex, structurally intact tissues, which could lead to advancements in regenerative medicine and provide alternatives to animal testing for drug development.

Space radiation presents both challenges and opportunities for biotechnology. At the cellular level, radiation can induce DNA damage, accelerate mutations, and alter gene expression patterns. While these effects pose risks to biological systems, they also provide a unique opportunity to study radiation-induced genetic adaptations, which could inform cancer research, gene therapy, and synthetic biology applications. Radiation alters the growth of bacteria and in turn effect the gut microbiome.



ANU K RAPHEAL
23BTGE21



Events Hosted by the Department of Life Sciences 2025-26

Synapse 2026

Creatrix-26



Date: 30/01/2026

Creatrix-26 was an engaging and inspiring Life Sciences exhibition that reflected the enthusiasm and creativity of undergraduate students. The exhibition included a variety of exhibits from fields such as Biotechnology, Microbiology, Genetics, Biochemistry and Botany. Each exhibit was designed to explain scientific concepts in a simple and practical way. Senior students guided and mentored juniors, making the event a valuable peer-learning experience. Live demonstrations and working models attracted active participation from visitors.

The Untold Hypothesis-Inside Biology



Date: 30/08/2025.

"The Untold Hypothesis" is a new YouTube podcast series created by the Department of Life Sciences to present biological concepts in an engaging, conversation-driven format. Designed to move beyond traditional lectures, it makes complex topics more accessible for students and general audiences. By using digital platforms like YouTube, the initiative supports modern, flexible learning styles and encourages critical thinking through hypothesis-based storytelling. The series also aims to spark curiosity by connecting scientific ideas with real-world examples and emerging research trends. Its success will depend on consistent content updates and maintaining open access, but overall

Pre-event to the International Trade Fair (ITF)



Date: 28/01/2026

The Department of Life Sciences, in collaboration with the Department of Agriculture, Government of Karnataka, organized the ITF 2026 pre-event "Agriculture Beyond Cultivation: Empowering Farmers" on 28 January 2026. Inaugurated by Sri. N. Chaluvarayaswamy, the programme featured expert sessions, panel discussions, student competitions, exhibitions, and a book release. The event promoted sustainable agriculture, value addition, and entrepreneurship, fostering innovation and farmer empowerment beyond traditional cultivation.

53rd Edition VICHARMANTHAN



Date: 8/01/2026

The 53rd Vicharmanthan was organised on Thursday, January 8, 2026, by the Department of Life Sciences, Kristu Jayanti (Deemed to be University). The event gained special significance as the University had the honour of hosting His Excellency, Archbishop Rev. Fr. Carlo Maria Polvani, Secretary of the Dicastery for Culture and Education, Rome, Italy, for the first time. His Excellency was accompanied by the Most Rev. Fr. Hrudaya Raju, Official of the Dicastery for Asia and Oceania and Rev. Fr. Mathew Attumkal, President of Dharmaram Vidya Kshetram

Synapse 2026

Intradepartmental UG Bio-Fest, Connoisseur 2025



Date: 28/08/2025

Connoisseur '25, a bio-fest organized on 28th August 2025 by final-year Life Sciences students for I and II year B.Sc. students, aimed to foster scientific curiosity and creativity. Inaugurated by Fr. Dr. Lijo P. Thomas, with an inspiring address by Dr. Fathima Benazir J., the fest embraced the theme "CELL-ESTIAL SAGA." Coordinated by Dr. Indira M. N. and Dr. Saraswathi, the event featured ten competitions, with winners felicitated on 30th August 2025.

Writing a Review paper: Crafting the Scientific Narratives



Date: 06/08/2025

The Department of Life Sciences organized a special session on "Writing a Review Paper: Crafting Scientific Narratives" for the final year PG students. The session, led by Dr. S. Gurunathan, Dr. P. Deepak, and Dr. V. Manon Mani, emphasized the importance of review writing as a scholarly skill. Students were guided on how to critically analyze scientific literature, identify research gaps, and present information in a structured and coherent manner. The faculty members highlighted the art of weaving scientific facts into a meaningful narrative that reflects clarity and originality. Practical strategies for organizing content, using citations effectively, and adhering to publication standards were shared.

Intra-university PG Bio-Fest, BIOVENTURA 2025



Date: 26/09/2025

Bioventura '25 was organized on 26th September 2025 by final-year Life Sciences students for I year M.Sc. Life Sciences students to foster innovation and scientific curiosity. The fest was inaugurated by Fr. Dr. Marialal Joseph, with an address by Ms. Deepa D. Uchil, and featured the launch of the department newsletter Jeevdhwani. Coordinated by Dr. Indira M. N. and Dr. Saraswathi, winners were felicitated on 29th September 2025 by Dr. Calistus Jude A. L.

Champions in Crisis Management



Date: 29/10/2025 - 03/11/2025

The School of Biological and Forensic Sciences secured the First Prize in the Crisis Management event at Aarohana. The competition had three rounds, where in the first two rounds teams were asked to create a complete event plan, then they dealt with unexpected issues like stampedes, medical emergencies, and a lack of volunteers using only WhatsApp groups for coordination. The final round put them in front of a press panel that questioned their choices and responses. Despite tough competition from every college, the team stayed calm, showed strong teamwork, handled each situation with confidence, earning them the top spot.

Synapse 2026

Bharat Innovates 2026



Date: 1/11/ 2025

Bharat Innovates 2026 is a national initiative by the Ministry of Education to showcase about 100 cutting edge Indian deep-tech innovations (TRL 3–9) in France in June 2026, connecting university research with global investors and partners. Kristu Jayanti University (KJU) supports this vision through its Entrepreneurship and Innovation Centre (EIC) and advanced research labs, with the Department of Life Sciences contributing strong work in biotechnology and translational science.

Exploring knowledge, celebrating excellence where research meets recognition



Date:15/09/2025

As part of the annual Jnana Darshan Book Exhibition 2025-26, the Library and Information Centre, with the School of Biological and Forensic Sciences, Department of Life Sciences, hosted a book review and launch of "Microbial Enzymes as Potential Biotherapeutics in Human Healthcare." Dr. Dileep Francis, Dean of Research and Development, highlighted the book's key themes, scientific insights, and its relevance to translational medicine, marking a valuable addition to academic literature.

NABI Awareness Program



Date: 31/10/ 2025.

The novel student-initiated startups of the 2nd and 3rd year undergraduate programs discussed the possibilities of collaboration with the best bio-foundries in the frames of the NABI (National Accreditation Board for Testing and Calibration Laboratories) Awareness Program at the Bangalore Bio-innovation Centre on 31-10-2025. Students learned about NABL standards, improved the quality of research, and developed industry ready concepts at the event.

Awareness session on Substance Abuse

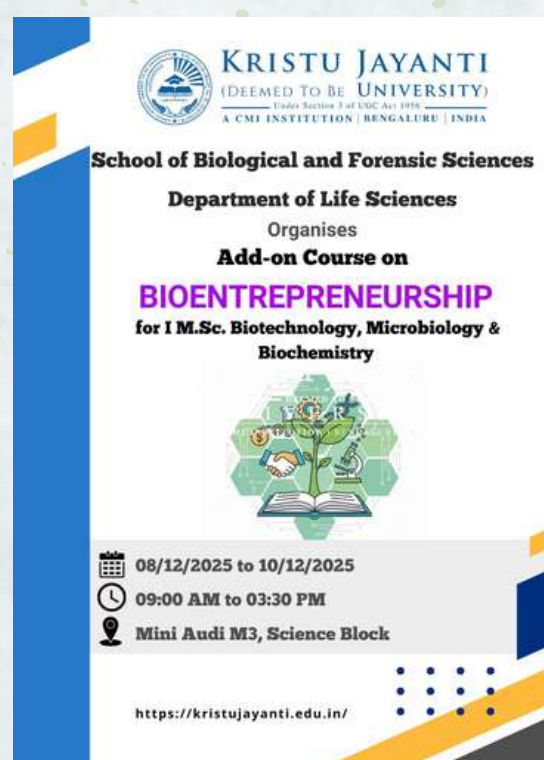


Date : 12/9/2025

The Department of Life Sciences organized an awareness talk on substance abuse to educate students on the health, psychological, and social consequences of addiction. Resource persons Mr. S. J. Chander, CEO, FSHI, and Dr. Jayant M., NIMHANS, emphasized informed decision-making, prevention, and timely intervention. The interactive session encouraged healthy lifestyle choices and empowered students with knowledge to resist substance abuse.

Synapse 2026

An Introduction to Bioentrepreneurship



Date : 08/12/2025 to 10/12/2025

The Department of Life Sciences organized a Course on Bioentrepreneurship for M.Sc. students. The program introduced students to entrepreneurship in biological sciences, covering innovation management, startup ecosystems, intellectual property, regulatory frameworks, funding, and business model development. Interactive sessions encouraged creative thinking and highlighted real-world challenges and opportunities in bio-based industries. The course enhanced students' understanding of commercialization strategies and inspired them to explore innovation-driven career paths beyond traditional research roles. Students also gained practical insights into launching biotech ventures and networking with industry experts. The initiative fostered a culture of innovation and entrepreneurship within the department.

Learning & Literacy



Date: 24/09/ 2025

A special session on "Science of Speaking Smart" was conducted for first-year B.Sc. (Life Sciences) students at Kristu Jayanti University on September 24, 2025. Led by Dr. Anindita Chowdhury, Assistant Professor, Department of English, the session offered practical tips to enhance communication skills and confidence, reflecting the department's dedication to fostering an engaging and inclusive learning environment.

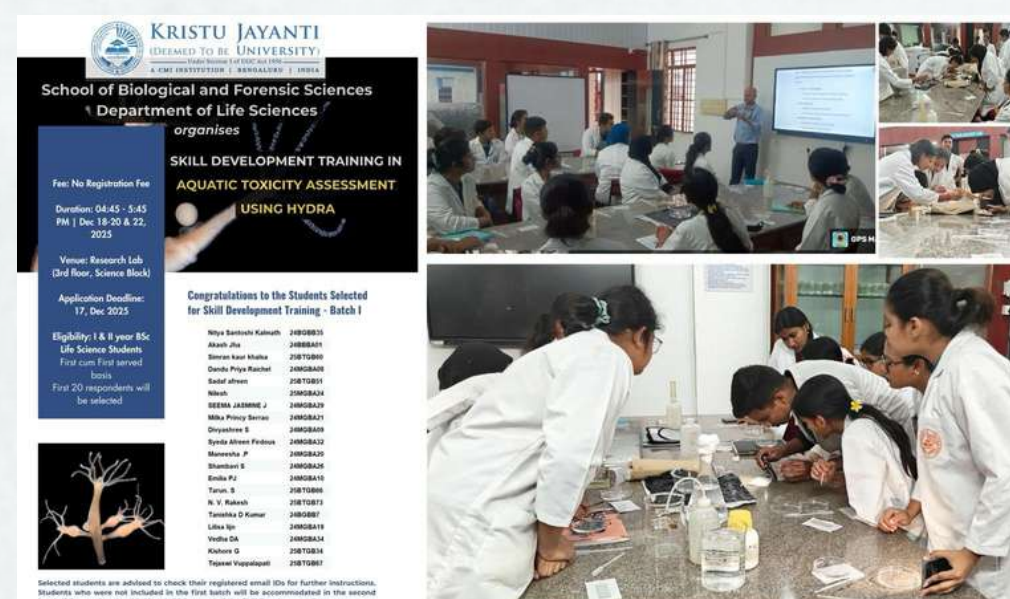
Skill Development Training on Polymerase Chain Reaction (PCR)



Date : 16/10/2025, 17/10/2025 & 26/10/2025

The Department of Life Sciences organized a Skill Development Training Program on Polymerase Chain Reaction (PCR) from 16 to 17 October to strengthen students' practical and conceptual understanding of molecular biology techniques. The training sessions were conducted by Dr. Kushi Anand and Dr. Malathi, Associate Professors of the department, and were open to all Life Science students.

Hydra-Based Aquatic Toxicity Training



Date : 18/12/2025

The Department of Life Sciences, School of Biological and Forensic Sciences, organized a Skill Development Training Program on Aquatic Toxicity Assessment Using Hydra, marking the commencement of the first batch of hands-on training in aquatic toxicity techniques. The training introduced students to the principles and applications of aquatic toxicology using Hydra as a model organism.

Lifestyle and Diseases



Date: 08/12/ 2025 - 10/12/2025

The Department of Life Sciences conducted an Add-on Course on "Lifestyle and Diseases" for B.Sc. students. The course created awareness about how lifestyle choices influence human health, highlighting the role of diet, physical inactivity, stress, and unhealthy habits in disease development. Students were introduced to common lifestyle related disorders such as diabetes, cardiovascular diseases, obesity, and stress-related conditions.

From Gene and Cure: CRISPR's Promise in Diagnostics and Therapy



Date: 09/08/2025

The programme on CRISPR Technology was conducted for I and II year M.Sc. students of Biotechnology, Microbiology, and Biochemistry, benefiting a total of 270 participants. The session was led by Dr. Gokul Kesavan, Director, Cascore Bio Private Limited, Bengaluru. The programme introduced students to the fundamental principles of CRISPR, a revolutionary gene-editing technology derived from bacterial immune systems, and its transformative role in modern biology.

Bioentrepreneurship Stars



Date: 8/12/2025 -12/12/2025

The Biopreneurship Club of the Department of Life Sciences congratulates students Arvind Rao, Nandana, Anjitha Jacob, and Vismaya M. for their selection in the fully sponsored Skill Development Training Programme on "Patents, Copyright, GI, and Trademarks for Entrepreneurship". The residential program, held at CSIR-NIIST, Thiruvananthapuram from 8th–12th December 2025, was supported by the Ministry of Micro, Small & Medium Enterprises. The training offered in-depth insights into intellectual property, commercialization, and entrepreneurial strategies, empowering students to translate scientific innovation into viable business ventures. This achievement reflects the department's commitment to nurturing future bio-entrepreneurs and fostering innovation-driven careers.

Summer Internship



Date : 16/06/2025-30/06/2025

The Department of Life Sciences organized two batches of a Summer Internship and hands-on training in Animal Cell Culture and Structure-Based Drug Discovery from 16–30 June and 1–15 July 2025. The programme covered aseptic cell culture techniques and computational drug design methods. Led by experienced faculty and experts from Kristu Jayanti College and IISc, the internship provided practical exposure, concluding with certificate distribution during the valedictory sessions.

Synapse 2026

Gunvatta Yatra 2025



Date: 12/12/2025

The School of Biological and Forensic Sciences, Department of Life Sciences, in association with the National Accreditation Board for Testing and Calibration Laboratories (NABL), organized Gunvatta Yatra 2025 at M4 Auditorium. The program provided participants with insights into NABL accreditation, its benefits, and the step-by-step process to achieve it. Attendees learned how accreditation strengthens laboratory competence, enhances institutional quality, ensures national and international recognition, and improves customer confidence. The program helped participants understand the practical implementation of accreditation standards. Experts shared tips to enhance laboratory performance and credibility.

Alumni Expert Lecture on "Short Chain fatty acids in Cancer therapy"



Date: 23/08/2025

The programme was conducted for I and III Semester M.Sc. students of Microbiology, Biotechnology, and Biochemistry, benefiting 270 participants. Miss Nidhi Prakash, Research Scholar and K-DST Fellow, Bangalore University, delivered an expert lecture on cancer research and drug development, with a special focus on the therapeutic role of long-chain fatty acids. She explained their collection, extraction, application, and mechanisms of interaction with cancer cells, supported by graphs, images, and tables. The session also highlighted the role of the gut microbiome in human health and factors influencing it, making the programme highly informative and motivating.

Faculty Development Programme (FDP) on MicroImmuno Master Class



Date: 30/06/2025 - 04/07/2025

The Faculty Development Programme (FDP) for the Department of Life Sciences was inaugurated with a Presidential Address by Fr. Dr. Lijo P Thomas, Vice Principal and CFO, Kristu Jayanti College (Autonomous), Bengaluru. The programme featured expert sessions under the theme "MicroImmuno Master Class," focusing on diagnostic bacteriology, serology, immunology, and biochemical techniques.

Tiny Greens, Mighty Impact: Unlocking the journey of microgreens and their innovations in health, food, and agriculture



Date: 29/08/2025

A skill development orientation titled "Tiny Greens, Mighty Impact: Unlocking the Journey of Microgreens and Their Innovations in Health, Food, and Agriculture" was conducted on 29 August 2025 for B.Sc. Botany students, benefiting 33 participants. Mrs. Selva Mary (Latha), Founder of Sunrudh Microgreens, Bengaluru, highlighted the nutritional superiority, sustainable cultivation practices, innovative applications, and entrepreneurial potential of microgreens, encouraging hands-on learning and real-world application of botanical knowledge.

Synapse 2026

Alzheimer's Disease – Scrutinising the Enigma



Date: 20/09/2025

On the occasion of World Alzheimer's Day, the Department of Life Sciences, Kristu Jayanti (Deemed to be University), organized an expert lecture titled "Alzheimer's Disease: Scrutinising the Enigma" on 20th September 2025. Dr. Phalguni Alladi, Senior Scientific Officer, NIMHANS, discussed the genetic and pathological basis of Alzheimer's disease, its impact on patients and caregivers, and recent advances in early diagnosis, biomarkers, and preventive strategies, creating greater scientific awareness among participants.

Bioaura: "Vigyaandyuti"



Date: 10/09/2025

The Department of Life Sciences, Kristu Jayanti (Deemed to be University), hosted Bioaura 2025, an intercollegiate biofest celebrating science, creativity, and innovation. With the theme "Vigyaandyuti – The Radiance of Science in a Desi Way," the fest welcomed 235 participants from diverse institutions. Inaugurated by Fr. Dr. Augustine George and inspired by Chief Guest Mr. Suraj Madhavan, the event featured dynamic competitions, with Mount Carmel College winning the overall trophy and St. Joseph's University as runners-up.

Navigating the Research Landscape: From basics to Innovations



Date: 22/08/2025

The Department of Life Sciences, Kristu Jayanti University, organized a Research Empowerment Talk on "Navigating the Research Landscape: From Basics to Innovations" on 22nd August 2025. The resource person, Dr. Jayashree R, Professor, Department of Animal Genetics and Breeding, Veterinary College, KVAFSC, Bengaluru, emphasized the significance of developing strong research skills, from formulating a problem statement to adopting innovative methodologies for impactful outcomes. The session provided students with a comprehensive understanding of research design, data collection, and analysis while highlighting the importance of ethics, innovation, and interdisciplinary approaches in scientific inquiry.

International Microorganism Day 2025



Date: 17/09 /2025 – 24/09/ 2025

To commemorate International Microorganism Day 2025, the Department of Life Sciences hosted a series of vibrant and educational events aimed at celebrating the significance of microbes in science, sustainability, and society. The activities engaged students across various semesters and programs, blending scientific inquiry with artistic expression and creativity.

Synapse 2026

Visit to Nagenahalli main road, K. Narayanapura



Date: 23/08/2025

The Department of Life Sciences conducted an extension service programme at Nagenahalli Main Road, K. Narayanapura, involving 14 students and three faculty members to promote hygiene and healthy living. The initiative included a cleanliness drive, awareness on the ill effects of tobacco and alcohol, and distribution of hygiene kits to households. The programme transformed the locality and fostered community awareness, social responsibility, and positive health practices.

Exploring the Research Ecosystem at KJU



Date: 09/08/2025

The School of Biological and Forensic Sciences, Kristu Jayanti University, organized the Monthly Research Day on 9 August 2025 with the theme "Exploring the Research Ecosystem at KJU." Dr. Dileep Francis, Dean-R&D, delivered a Research Empowerment Talk highlighting interdisciplinary collaboration, ethical research, SCIE publications, and institutional support. The interactive session engaged Life Sciences faculty and inspired impactful, innovative, and globally relevant research aligned with the university's vision of academic excellence.

Cleanliness Drive conducted at K. Narayanapura Road , Kothanur, Bengaluru



Date: 30/08/2025

The Department of Life Sciences, in collaboration with CEES, organized a Cleanliness Drive under Swachhotsav – Swachhata Hi Seva 2025 on 30th September 2025 at K. Narayanapura Road, Bengaluru, with over 100 I semester BBG students. The drive involved waste collection, segregation, and hygiene awareness, linking environmental science concepts with community service. The programme strengthened civic responsibility, environmental awareness, and sustainable practices among students and the local community.

Neurotoxicology Of Mitochondria To Environmental Toxicology



Date: 26/07/2025

The Monthly Research Day organized by the School of Biological and Forensic Sciences, Kristu Jayanti University, featured an insightful Research Empowerment Talk by Dr. Shinomol George K. The session, titled "Neurotoxicology of Mitochondria to Environmental Toxicology," provided an in-depth understanding of mitochondrial pathways affected by environmental toxins and their implications on neurological health. The talk enabled participants to appreciate the significance of mitochondrial research in environmental toxicology, fostering a research-driven academic culture and inspiring young scholars to engage in evidence-based scientific inquiry.

Synapse 2026

Overall Championship Trophies Edesia'25



Date: 03/09/2025

Students of the Department of Life Sciences, School of Biological and Forensic Sciences, Kristu Jayanti University, showcased their talent and determination at intercollegiate fests hosted by St. Joseph's University. At EDESIA 2025, a food science fest celebrating creativity and innovation, they delivered outstanding performances and lifted the Overall Championship Trophy. At CELOSIA 2025, they further demonstrated their all-round excellence, winning across multiple events and leaving a lasting impression with their creativity, skill, and teamwork. Their achievements reflect not only their individual dedication but also the strong mentorship and collaborative spirit nurtured within the department. These successes have brought pride to the university and inspired younger students to pursue excellence in academics, research, and extracurricular activities.

Visit to Indo American Hybrid Seeds (India) Pvt. Ltd.



Date: 23/09/2025

The Department of Life Sciences, Kristu Jayanti (Deemed to be University), Bengaluru, organized an industrial visit to Indo American Hybrid Seeds (India) Pvt. Ltd. for III and V Semester Botany students, coordinated by Dr. Indira. The visit provided practical exposure to hybrid seed production, plant taxonomy, micropropagation, and germplasm conservation. Students gained firsthand insight into biotechnology-driven crop improvement, sustainable agriculture, and career opportunities in applied botany.

BIONOVA- Where Science Meets Startup



Date: 30/09/2025

Kristu Jayanti University fosters innovation through initiatives like BioNova Acceleration, empowering life science students to develop ventures in food, herbal products, probiotics, and scientific kits. A standout success is Frostopia Bakes, a student-led startup by Mr. Mithun and his BBA collaborators, renowned for its brownies. The brand now supplies 27 shops near KJU and 11 in Byrathi City, with a recent campus stall under the E-Store program. These initiatives reflect the university's commitment to creativity, collaboration, and practical learning.

CRISPR is the pen with which biology writes its next chapter



Date: 6/09/2025 - 21/09/2025

The Department of Life Sciences, Kristu Jayanti (Deemed to be University), in collaboration with Cascore Bio Pvt. Ltd., Bengaluru, conducted a Certificate Course on "CRISPR: Exploring Gene Editing and Rapid Diagnostics" from 6th to 21st September 2025. Aimed at final-year UG (BTGE, BTBC, MBGE & BTBO) and PG (Biotechnology, Microbiology, Biochemistry) students, the program was led by Dr. Gokul Kesavan, Director of Cascore Bio Pvt. Ltd. The sessions covered the mechanisms, therapeutic applications, and diagnostic uses of CRISPR-Cas systems through interactive lectures and hands-on learning. The initiative strengthened students' research skills and reflected the University's commitment to scientific innovation and career readiness.

Synapse 2026

Confluence 2025 – Book Release & Mini Symposium



Date: 16/08/ 2025.

The Department of Life Sciences and Centre for Research & Development, Kristu Jayanti University, Bengaluru, organized Confluence 2025 on 16th September 2025. The book "Microbial Enzymes as Potential Biotherapeutics in Human Healthcare" was released by Fr. Joshy Mathew, Chief Human Resource Officer & Director, School of Humanities and Social Sciences

Acharyotsava 2025: Champions Beyond the Classroom



Date: 03/09/2025

The Department of Life Sciences at Kristu Jayanti (Deemed to be University) continues to excel both academically and beyond the classroom. This semester showcased true holistic growth through outstanding performances in Acharyotsava, the university's cultural and sports fest. Congratulations to Dr. Vineetha for securing the Runner-up position in Women's Badminton and leading the Tennicoit team to a Runner-up finish, and to Dileep Sir for achieving the Runner-up position in Men's Badminton. These accomplishments reflect the department's commitment to excellence, teamwork, and overall development, embodying the dynamic and determined spirit of Life Sciences at Kristu Jayanti.

Coffee with Mentor –Brewing Minds, Shaping



Date: 6/08/ 2025.

The Department of Life Sciences at Kristu Jayanti University organized a career counseling session, titled "Coffee with Mentor," for final-year B.Sc. students. Botany and Biotechnology (BTBOBC) students at the Amphitheater near the PG Block. The informal coffee setup created a comfortable space for open discussions on career paths, higher studies, research, and skill development. Mentors offered personalized guidance, helping students reflect on their strengths, explore opportunities, and make informed career choices. The interactive session emphasized the importance of continuous learning, adaptability, and confidence, leaving students inspired and motivated to take the next step toward achieving their goals..

Awareness today brings breakthroughs tomorrow



Date: 20/09/2025

On World Alzheimer's Day, the Department of Life Sciences at Kristu Jayanti University organized awareness activities featuring a guest lecture by Dr. Pallguni Alladi (NIMHANS) on "Alzheimer's Disease: Scrutinizing the Enigma." The lecture covered the disease's stages, risk factors, and the role of multilingualism in cognitive health. Dr. Rituparna Saha coordinated the session, which included a student quiz and distribution of purple ribbons to show solidarity. The event highlighted the critical role of community awareness, early detection, and ongoing research in combating Alzheimer's. It inspired participants to advocate for dementia-friendly initiatives and support those affected by the disease.

Major Faculty achievements 2025-2026

Sl. No	Name of the Faculty	Name of the award	Awarding Agency
1.	Dr. Priya Josson Akkara	The Literacy Leader Award for a Blended Learning Environment-2025: Global Literacy Day 2025	Flyers Charitable Trust, A.C.T Academy & ACTA Classic Publisher
2.	Dr. Priya Josson Akkara	Distinguished Researcher Award 2025	Scientific Laurels (International Scientific Awards)
3.	Dr. Kushi Anand	The Ignitor of Imagination Award-2025	ACT Academy & ACTA Classic Publisher
4.	Dr. Kushi Anand	Best Researcher Award	Scientific Laurels (International Scientific Awards)
5.	Dr. Sonia Angeline M	Innovative Teaching Award	ACT Academy

Student achievements 2025-2026

Sl No	Date of the Event	Title of the fest	Host Inst. and Venue	Regional / State/ National	Overall trophy details
1.	03/09/2025	EDESIA	St. Joseph's University	State	Winners
2.	16/09/2025	ALCHEMY	St. Joseph's University	State	Winners
3.	12/09/2025	CELOSIA	St. Joseph's University	State	Winners
4.	21/08/2025	JEEVOTSAV	Christ University	State	Runners-up

Synapse 2026

Student Co-ordinators from the Department of Life Sciences



Adisha Kaur: 23BTGE05
Literary & Cultural Association

Aisheeka Saha: 23BTGE07
Member of Student Council

Alan Kinad: 23BTGE10
Life Science Club

N Charvikasree: 23BTBC22
Life Science Club

Tharun Balaji N: 23MBGE48
Environment Club

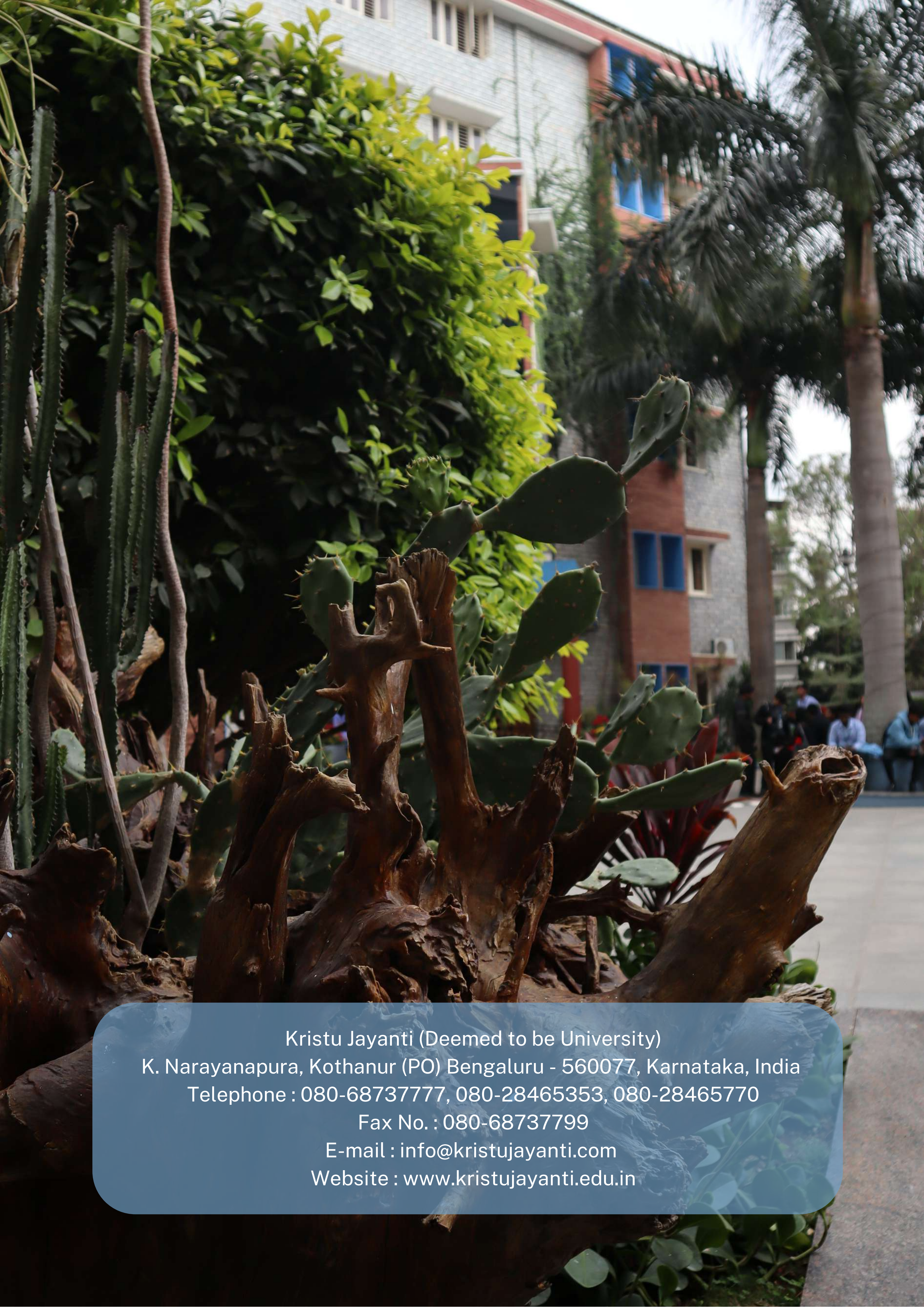
Priyanka M: 23BTBO19
Environment Club

Elizabeth Jigi: 23BTBO03
Jayantian Catholic Association

Akhil Raj: 23BTGE08
Jayantian Catholic Association

Akshatha Patil: 23MBGE08
Kristu Jayanti Centre for Indian Knowledge
System

Jovita Jose: 23MBGE26
Quiz Club



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