SLS NEWSLETTER

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SCHOOL OF LIFE SCIENCES

B.S. ABDUR RAHMAN CRESCENT INSTITUTE OF SCIENCE AND TECHNOLOGY

CHENNAI – 600048. TAMIL NADU. INDIA

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Preface

I am delighted and glad that School of Life Sciences, best potential School in B.S. Abdur Rahman Crescent Institute of Science and Technology, Chennai, Tamil Nadu, India is stepping into publication of SLS Newsletter with ISBN number during International Conference on Applications in Biotechnology and Nanotechnology (ICBN 19) to be held on Sep 30 & Oct 1, 2019. I found School of Life Sciences, as most eminent and one of the innovative schools in BSACIST in terms of excellence in teaching, research publications, sponsored projects, consultancies, inviting an emeritus and overseas professors, organizing International conference every year, conference participation and fellowships / awards received both from students and faculty members. Based on these criteria, BSACIST conferred the **BEST POTENTIAL SCHOOL AWARD** during Teachers Day Celebration on September 5, 2019. In SLS – NEWLETTER, the content devised for the each section are need of the hour and informative to scientific community. My best wishes to Dr. Hemalatha, Dean, faculty members, research scholars and students of School of Life Sciences.

Prof. Sahol Hamid Bin Abu Bakar
Vice Chancellor

History and functioning of SLS

S. Hemalatha
Professor and Dean
School of Life Sciences
B.S.Abdur Rahman Crescent Institute of Science and Technology
Chennai – 600048, Tamil Nadu, India

❖ Vision

To attain new heights in education and research in the field of biotechnology and help shaping life sciences into a premier precision tool for the future, creating wealth and ensuring social justice-specially for the welfare of the poor.

❖ Mission

- The mission of the school of life sciences and Technology is to maximize the benefits of Biotechnology to the Institute, the nation and the globe.
- Being a comprehensive, multidisciplinary of excellent quality school that supports, coordinates and disseminates knowledge to the community.
- To apply biotechnology in the areas of social welfare and entrepreneurship.

❖ Salient Features of School of Life Sciences

- Established in the year 2013.
- Well qualified and dedicated members of faculty with Ph.D. and Post-Doctoral experience from abroad.
- Highly motivated and meritorious students.
- State of the Art Lab facilities.
- 12 laboratories facilitated in the 7 storey SLS Block.
- Semester patterned and choice based learning with flexible credit system.
- 360^{o} feedback including all the stakeholders.
- Management strategy involves Class Advisor & Faculty Advisor.
- Wired and Wi-Fi internet connection all throughout the block.
- Collaboration with premier institutes and industries globally.
- Exclusive Department Library & Seminar Hall.
- International conferences are organized every year in association with universities abroad and sponsored by DST-SERB and ICMR, TNSCST.
- Several Workshops, Seminars, Guest Lectures, Industrial Visits have been organized.
- Motto of the School : ***Creating employers and not employees***
- Journal club conferences held by Undergraduates and research scholars.
- Research grants secured from DST, ICMR, DBT, BIRAC, and TNSCST.
- Faculty members serving as Editor and reviewers in Elsevier and other scientific publishers.

❖ Programs offered

	Name of the programme
Bachelors	
B.Tech	Biotechnology
B.Sc	Biotechnology
Masters	
M.Sc.	Biochemistry & Molecular Biology Microbiology Biotechnology
M.Tech	Biotechnology
Doctoral Ph.D	All areas of Life Sciences

❖ Best Practices

- Special coaching for the NET and GATE classes.
- Pathway to Entrepreneurship by associating with EDI-TN and offering course from University of Missouri on Life Sciences Innovations and management
- Periodically Journal Club is conducted.
- Roof Top organic herbal Garden initiated by the B.Tech students
- Biotechnology Students Association
- Society of Pharmaceutical Education and Research (SPER)
- 14 startup companies will be incubated at Crescent by all B.Tech final year students in 2018
- We create employers and not employees
- Placement in core companies
- Great scores secured by our students in GRE; alumni pursuing higher studies in USA, Canada, UK, Australia and Newzeland.
- High impact journal publications.
- Earn while you learn scheme.
- Assignments are checked for plagiarism through Turnitin.

❖ List of faculty members and their qualification and areas of research and experience

Name and Designation	Qualification	Area of research	Experience
Dr. S. Hemalatha Professor and Dean	Ph.D & Post Doc (USA)	Functional genomics, Microbial pathology, nanotechnology	19
Dr. R. Karthikeyan Associate Professor	Ph.D & Post Doc (USA)	Microbial biofilm, bioremediation, antibiofilm coating, nanoemulsion	10
Dr. P. Ashok Kumar Associate Professor	Ph.D & Post Doc (USA)	Cancer Therapeutics (Colon and Breast cancer), signaling	7.2
Dr. Soumen Bera Assistant Professor (S.G)	Ph.D & Post Doc (USA)	Protein folding and Stability, Protein Biochemistry	8
Dr. Md Khurshid A. Khan Assistant Professor (S.G)	Ph.D & Post Doc (USA)	Cancer Biology, Microbiology	8
Dr. Neesar Ahmed Assistant Professor (S.G)	Ph.D & Post Doc (USA)	Cancer immunology, microbial immunology, cell signaling, protein chemistry	7
Dr. Shazia Jamal Assistant Professor (S.G)	Ph.D & Post Doc (USA)	Protein biochemistry and Cancer Biology	6.5
Dr. M.K. Sangeetha Assistant Professor	Ph.D & Post Doc (USA)	Diabetes, Natural products, snake venom, Infertility and toxicology	5
Dr. S. Sudarkodi Assistant Professor	Ph.D (Singapore) & Post Doc	Mycobacterium tuberculosis: Antimicrobial resistance, drug screening, systems biology of lipid metabolism	3.4
Dr. M. Wasima Assistant Professor	Ph.D	Pattern formation, Cell and molecular biology of cellular slime molds	1.5
Dr. Subhamoy Baneerjee Assistant Professor	Ph.D & Post Doc	Nanobiotechnology and Computational Biology	3.5
Dr. Gulsaz Shamim Assistant Professor	Ph.D	Pharmaceutical properties of natural compounds Molecular Entomology, Diversity analysis, Functional Genomics	3.5
Dr. G. Vimal Kumar	Ph.D (Belgium)	Immunology	0.5

Assistant Professor			
Dr. Mohd. Ashfaq Assistant Professor	Ph.D & Post Doc (Beijing)	Synthesis of nanomaterials and polymeric biomaterials for diverse applications mainly biomedical applications	0.5
Dr. Sheeza Khan Assistant Professor	Ph.D	Protein Chemistry, Protein folding and aggregation	3
Dr. D. MubarakAli Assistant Professor	Ph.D & Post Doc (Korea)	Molecular Taxonomy; Microbial Biotechnology; Nanomaterials; Solution Plasma; Bioenergy	7
Dr. Waseem M Assistant Professor	Ph.D & Post Doc (USA)	Pharmacology Neuroscience	3

❖ Human Resources & Technical and supporting staffs

Name and Designation	Qualification	Years of Experience
Scientific Assistant		
Ms. S. Ranjani	M.Sc., M. Phil	3
Dr. Faridha Begum	M.Sc., Ph. D.	5
Mr. Simon D	M.Sc.	1
Mr. Abrar Mohd Basha	M.Tech	1
Lab Technician		
K.Gopinath	B.Sc., MBA	3
K. Abirami	M.Sc.	2.5
Kaviya Kanchana.E	B.Sc.	0.9
Anna Poorani .M	B.Sc.	0.5
Aishwarya.V	B.Sc.	0.3
Vinnarasi	B.Sc	1.0
Nivetha	B.Sc	1.0

❖ Infrastructure and Laboratory facilities

The school has sufficient number of interactive classrooms and 12 well equipped laboratories with state of the art provisions, purchased with funds provided by the management and some through the grants from DBT, DST, ICMR, and AYUSH

S. No	Name of the Laboratory	Location
1	Molecular biology for UG	SLS 2nd floor
2	Microbiology Lab for UG	SLS 3rd floor
3	Biochemistry lab for UG	SLS 4th floor
4	Biochemistry lab for PG & Research	SLS 5th floor
5	Microbiology Lab for PG & Research	SLS 5th floor
6	Molecular biology for PG & Research	SLS 6th floor
7	Genetics for PG & Research	SLS 6th floor
8	Central Research Facility -(SLS)	SLS 7th floor
9	Computational biology lab	SLS 6th floor
10	Animal tissue culture lab	SLS 6th floor
11	Plant tissue culture lab	SLS 6th floor
12	Microalgal Culture Facility	SLS 6th floor
13	Phyto& natural productsLab	SLS 6th floor
14	Bioenergy & Biopigmentation lab	SLS 6th floor
15	Biomaterial & bionanocomposites Lab	SLS 6th floor
16	Myconanotechnology Lab	SLS 5th floor

Total value of all the equipments: Rs. 2, 91, 83,171

❖ School of Life Sciences Library

1. No. of books : 273
2. No. of e-books : 1517
3. No. of Journal : 6
4. No. of PG Project Reports : 16
5. No. of Lab Manuals : 20
6. No. of other Technical Magazines: 11

❖ International Research collaboration

Our academic and research work is an international enterprise. We are interested in collaborating with researchers at universities, hospitals and industries around the globe. Current collaborations include joint research, faculty and student exchange, teaching, joint workshops and conferences with the following institutes:

- Johns Hopkins University, USA
- Purdue university, USA
- University of Illinois at Chicago, USA
- University of Nottinghm, UK
- University of East London, UK
- University of Malaya, Malaysia
- University of Missouri, USA
- Wayamba University of Sri Lanka, Sri lanka
- University of Lankashire
- Keck center, Univeristy of Virginia, USA
- King Saud University, KSA
- University of South California, USA
- Kangwon National University, Republic of Korea
- Incheon National University, Republic of Korea
- Shanghai Jiao Tong Technological University, China
- Ton Duc Thong University, Viet Nam
- Korea Aerospace University , Republic of Korea
- Universiti of Putra Malaysia

❖ Inauguration of Mizzou – Crescent Research Collaboration Center

Inauguration of Mizzou – Crescent Research Collaboration Center was inaugurated on October 30, 2018 by Dr. Jerry Parker, Associate Dean, University of Missouri, USA.

❖ International Events Organized

International Conferences Organized on the International conference on Emerging Areas in Biotechnology for Human Welfare and Bio entrepreneurship (ICEBHE-2018) was held on September 11-12, 2018 sponsored by TNSCST (Govt. of Tamil Nadu).

International Seminars Organized Seminar on "Emerging Research Trends on Prebiotics and Probiotics towards Synbiotics Relationships" by Dr. Ramachandran Chelliah, Kangwoon National University, Republic of Korea was held on November 2, 2018.

National Seminars Organized Seminar by Dr. G. G. Hammad A. Shadab, Aligarh Muslim University, on Career opportunities in Life Sciences held on August 29 2018.

❖ Workshops Organized

- Two days workshop on "Basics of Animal cell culture" held on December 26 & 27, 2018.
- Five days hands on training on "Recombinant protein expression & purification" held from December 17 – 21, 2018.

- Three Day Computational Workshop on Cancer Interactome Analysis & Drug Design, November 1 – 3, 2018.
- Workshop on ELISA – Biomarker quantification was organized on September 25, 2018.

- Workshop on "Analysis of Phytocompounds by HPLC" was organized on October 29, 2018, in association with Spinco Biotech Pvt ltd, Chennai.
- Two Day Computational Workshop on "R programming for NGS Data Analysis" held on, October 25 & 26, 2018.

❖ Industrial Visits

- To have real time analytical experience II, III and IV year B.Tech Biotechnology & Cancer Biotechnology students have been sent to Bioresearch foundation, Sengaddu, Chennai on September 26, 2018.

- To have real time experience II year B.Sc Biotechnology students have been sent to PONLAIT Milk Co-operative society Ltd. PONDICHERRY on 6th October 2018.

❖ Outreach and Social responsibility

Industrial Collaboration

Industrial Institute Meet is conducted every year to establish collaborations with industries.

❖ Conferences, FDP, Seminars & Workshops Attended

- Global Vice Chancellor's Training Programme for University Administration & Management held within July 30th – August 2, 2018, sponsored by MHRD, Government of India

- Tree Plantation on September 5, 2018 with Students

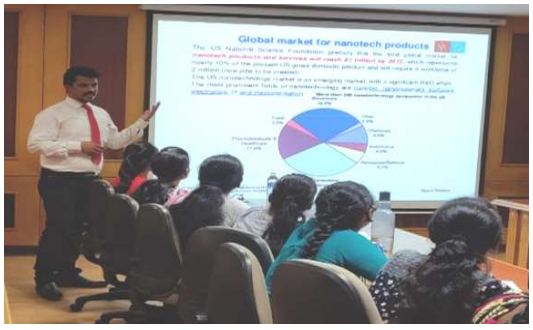
- AICTE sponsored faculty development programme for student induction Program on Dec 3- 9, 2018

- **Invited talks delivered in Workshops**

Dr. Sudarkodi Sukumar received an invitation to conduct a "workshop on Cancer Informatics" organized by Bio incubator and lab, Vels Technology along with Dr Rangarajan & Dr Sagunthala, R & D Institute of Science & Technology, Chennai on July 16, 2018.

❖ Invited talks delivered in seminars

- **Dr. U. Vimal Kumar** delivered guest lecture in a seminar at Centre for BioSystems Science and Engineering, Indian Institute of Science (Bangalore) December 7, 2018.
- **Dr. D. MubarakAli** delivered an invited talk on "Nanomaterials: Synthesis, Characterization and Application" held at Women's Christian College (Autonomous), Chennai, Tamil Nadu, India October 10, 2018.
- **Dr. MubarakAli** gave a talk on "Nanobiotechnology: avenue for noble research and opportunities" held at Vivekananadha College of Arts and Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu, India on August 24, 2018.



- **Dr. S. Hemalatha** was invited among 20 researchers from India for The UK-India Newton-Bhabha Fund Researcher Links Workshop on working at the chemistry-microbiology interface to develop new antibiotics for tackling antimicrobial resistance and resistant TB, TB Research Institute, Bangalore.

❖ Publication details (2018)

❖ Research Article

- Gulsaz Shamim, Kewal Krishnan Sharma, Ranganathan Ramani; Isolation and identification of culturable bacteria from honeydew of Indian lac insect, Kerria lacca (kerr) (Hemiptera : Tachardiidae)., Meta Gene 19 (2019) 10 - 14
- Sneha Unnikrishnan, Mohd Hashim Khan, Kartikeyan Ramalingam; Dye-tolerant marine *Acinetobacter baumannii*-mediated biodegradation of reactive red., Water Science and Engineering 2018, 11 (4): 265 - 275
- Ganesh Kumar, Krishnamoorthy, Prashanth Alluvada, Esayas Alemayehu, Shahul Hameed Mohammed Sherieff, Wasihun A. Addi, Timothy Kwa, Janarthanan Krishnamoorthy; Log D analysis using dynamic approach., Biochemistry and Biophysics Reports 15 (2018) xxx – xxx
- Tahira Akther, Mohd Shahanbaj Khan, Hemalatha Srinivasan; Novel silver nanoparticles synthesized from anthers of *Couroupita guianensis* Abul. Control growth and biofilm formation in human pathogenic bacteria., Nano Biomed Eng 2018, 10 (3): 250 – 257
- Raguraman, V., MubarakAli, D., Narendrakumar, G., Thirugnanasambandam, R., Kirubagaran, R., & Thajuddin, N. Unraveling rapid extraction of fucoxanthin from Padina tetrastromatica: Purification, characterization, Process Biochemistry, 73, 211-219.
- Saravanakumar, K., Kathiresan, K., MubarakAli, D., Kayalvizhi, K., Rajendran, N., Hemalatha, S., & Chen, J. Soil-microbial communities indexing from mangroves rhizosphere and barren sandy habitats., Physiological and Molecular Plant Pathology, 104, 58-68.

❖ Review article

- Pandurangan AK, Divya T, Kumar K, Dineshbabu V, Velavan B, Sudhandiran G. Colorectal carcinogenesis: Insights into the cell death and signal transduction pathways: A review. World J Gastrointest Oncol., 10 (9):244-259

❖ Book chapter

- Pandurangan AK and Mustafa MR. 2018. Ed. Akhtar MS and Swamy MK. Anticancer Plants: Natural Products and Biotechnological Implements. Chapter 14: The therapeutic strategies of natural agents on Triple-negative breast cancer. Springer International Publishing, pp. 321-342,
ISBN: 978-981-10-8063-0 (DOI: 10.1007/978-981-10-8064-7_14).

- Pandurangan AK, Suresh Kumar A, Sivaprakasam P, Sekar K, Naveen S. Ed. Akhtar MS and Swamy MK. Medicinal Plants: Chemistry, Pharmacology, and Therapeutic Applications. Chapter 2. Understanding the mechanism of Luteolin, a bioflavonoid on colorectal cancer. Studium Press, USA.

❖ RESEARCH HIGHLIGHTS

Partial agonism at B2AR unveiled by salmeterol efficacy

Haajira Haaris

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Research Highlights:

Partial agonism is characterized as the ability of a ligand to activate a given receptor with a partially efficient response even when it is fully occupied. In a quest to explore partial agonism at GPCRs (G protein coupled receptors) with respect to its structural dynamics, the researcher has chosen to study the pre determined crystal structure of salmeterol bound - B2AR stabilized by a nano body. B2 Adrenergic Receptor (B2AR) is a type of GPCR which binds with epinephrine naturally while salmeterol acts as a partial agonist for the above mentioned receptor.

It is used in the treatment of asthma and chronic obstructive pulmonary disorder. Structural details show that the pharmacophore of salmeterol binds to the receptors active site somewhat like epinephrine does while its long aryloxyalkyl extension binds to the "exosite", which is composed of TM6, TM7 and extracellular loops (ECLs) 2 and 3. The author also states that the salmeterol's selectivity towards B2AR is due to the difference in constituents of exosite between B1AR and B2AR.

Investigations in comparing the epinephrine bound structure and salmeterol bound structure exposed the unavailability of a polar network in the latter making the ligand – receptor interaction at the binding site less complex than the former. And the lack of a Hydrogen bond between the ligand and Asn293 $^{6.55}$ was found to be the cause. Furthermore the investigator validates the partial efficacy of salmeterol bound structure supported by the observation of a comparatively smaller movement of TM6

on the intracellular side that leads to an intermediary access to the active site of B2AR which in turn results in submaximal activation of G protein. This review on the structural dynamics of partial agonism at the B2-Adrenergic Receptor was carried out by Dr. Arun K Shukla, an Indian structural biologist and professor at IIT, Kanpur.

Further reading: Arun K Shukla. 2019. Structural Basis of Partial Agonism at the β2-Adrenergic Receptor, *Biochemistry*, 58, 3, 137-139.
https://pubs.acs.org/doi/full/10.1021/acs.biochem.8b01237

Idea corner (The ideas submitted to the Smart India Hackathon)

Dr. D. MubarakAli
School of Life Science, B.S.Abdur Rahman Crescent Institute of Science and Technology, Chennai – 600048, Tamil Nadu, India

S.No	Name of the Team	Idea Title	Name of Team Leader	Technology Bucket
1.	CRESCENT SMART PRODIGIES	solution plasma for water solution	Joseph Vijay Nandru	Clean Water
2.	SCAN PROBES	analysing and quantifying using nano-spectrophotometric method	Syed Zafer Sathiq	Healthcare and Biomedical Device
3.	CRESCENT SMART PRODIGIES	desalination of water salinity	Joseph Vijay Nandru	Clean Water
4.	BIO SQUAD	alternative to get best results rather than skin test in tb	Dasari Manoj	Healthcare and Biomedical Device
5.	BUDDING SCIENTIST	nutrition in time works fine	Safia Siddika	Healthcare and Biomedical Device
6.	CRESCENT SMART PRODIGIES	reframed nanocatalyst for refining of lubricant oil	Joseph Vijay Nandru	Energy/ Renewable Energy
7.	ENDOFIGHTO	nanoformulation by using lemon grass and other natural product for birds, animals insects repellen	Tahira Akther	Life Sciences
8.	BIO NANOTECH	development of iot based automatic fertigation for coconut plantation health system	Ranjani, S	Life Sciences
9.	ECOFRIEND	novel bioactive compound to control multi drug resistant organisms	Faridha Begum	Life Sciences
10.	ENDOTECH	use of Co2 generated from meg plant for spirulina production	Shariq Ahamed	Energy/ Renewable Energy

Scientific facts

Sriram, B

B. Tech. Biotechnology, School of Life Science, B.S.Abdur Rahman Crescent Institute of Science and Technology, Chennai – 600048, Tamil Nadu, India

- Through extensive testing, the T1 MRI has been shown to be more accurate, and efficient, and safer than existing techniques used to detect heart disease in children.
- Researchers have uncovered structural networks of tubules at the plant-fungal interface that could shed light on the mechanisms of this symbiotic partnership.
- Using a group of Caribbean reef fishes as a model system, a team of scientists has found that natural selection can couple the evolution of genes for vision and color pattern.
- New research has found that despite the low density of the desert yellowhead -- there are fewer than 15,000 individual plants scattered across just 55 acres -- these populations survive partly because of a principle called negative density dependence.
- Scientists have identified the mistake-rate of DNA editing tools, based on CRISPR and known as adenine base editors. Assessing the genome-wide target specificity of these innovative techniques is essential to harness their applications in clinics and biotechnology.
- Influenza viruses from bats use an entirely different portal to enter the cell than all previously known types of influenza.
- P. falciparum develops resistance to some antimalarial compounds by epigenetic changes, according to a new study. This is of concern because resistance acquired at the epigenetic level can arise quickly, even during the course of a single infection.
- Researchers at the Columbia University College of Dental Medicine have determined how F. nucleatum -- a common oral bacteria often implicated in tooth decay -- accelerates the growth of colon cancer.

- Researchers studied a gene associated with ageing in roundworms. They found that by reducing this gene's expression, they could not only more than double the worm's lifespan - but also improve the fitness of its offspring.
- A small group of plants known as 'resurrection plants' can survive months or even years without water.
- An international project has mapped connections in the marmoset brain at an unprecedented level of detail. A better understanding of primate neural connectivity promises to lead to fundamental therapeutic advances for human diseases.
- Researchers have invented a new method to observe bacterial build cell walls in real time that could contribute to the search for new antibacterial drugs.
- Investigators have now shown that the breast milk microbiome contains fungi, of which certain fungi and bacteria have been shown to be important probiotics for infant health.
- Researchers have found that sugar molecules play a key role in cellular communication, serving as the 'channels' that cells and proteins use to talk to one another.
- Scientists in Panama explored the compounds produced by frog skin bacteria as potential novel antifungal sources for the benefit of humans and amphibians.
- Celastrol's potent anti-obesity effects were widely reported in 2015. Derived from the roots of the thunder god vine, the drug curbed food intake in obese mice by nearly 80 percent, producing up to a 45 percent weight loss.
- A team led by a plant pathologist at the University of California, Riverside, has identified a regulatory, gene
- Researchers are using tobacco plants as 'green bioreactors' to produce large quantities of a human protein called Interleukin 37, or IL-37.tic mechanism in plants that could help fight bacterial infection.
- The fungus Aspergillus fumigatus occurs virtually everywhere on Earth, as a dark grey, wrinkled cushion on damp walls or in microscopically small spores that blow through the air and cling to wallpaper, mattresses and floors which knocks out the immune defenses, enabling a potentially fatal fungal infection to develop.

- Scientists are blasting E. coli bacteria with ionizing radiation once a week to watch evolution happen in real time as the bacteria become radiation resistant, giving view into DNA repair.
- Some of the bacteria that live in ponds grow faster during the day, even if they don't take in sunlight as an energy source, suggesting the existence of special genes that absorb light.
- A new method for sequencing the chemical groups attached to the surface of DNA is paving the way for better detection of cancer and other diseases in the blood, These chemical groups mark one of the four DNA "letters" in the genome, and it is differences in these marks along DNA that control which genes are expressed or silenced.
- Scientists from Utrecht University, University Medical Center Utrecht and Hubrecht Institute have successfully created kidney organoids from urine cells. This could lead to a wide range of new treatments that are less onerous for kidney patients.
- Pollen from a genetically modified plant to carry CRISPR's components into other plant cell. The solution promises to speed up the production of more versatile and better crops.
- Researchers at Boyce Thompson Institute have launched a novel Plant Genome Editing Database (PEGD), which will act as a central repository for efficiently managing plant mutant data.

E-RESOURCES / JOURNALS

- Genetics Education Center :For educators interested in human genetics and the human genome project

  http://www.kumc.edu/gec/#resource

- Bentham Open: BENTHAM Open publishes a number of peer-reviewed, open access journals. These free-to-view online journals cover all major disciplines of science, medicine, technology and social sciences. BENTHAM Open provides researchers a platform to rapidly publish their research in a good-quality peer-reviewed journal. All peer-reviewed accepted submissions meeting high research and ethical standards are published with free access to all.

  https://www.benthamopen.com/index.php

- TDR Targets : This database functions both as a website where researchers can look for information on targets of interest, and as a tool for prioritization of targets in whole genomes. Using the TDR targets database as a tool, researchers can quickly prioritize genes of interest by running simple queries (such as looking for small enzymes, or proteins with high quality structural models), assigning numerical weights to each query (in the history page), and combining these results to produce a ranked list of candidate targets. The name of the database includes the initialism 'TDR' for Tropical Disease Research, a special programme within the World Health Organization.

  http://tdrtargets.org/

- DOAJ (Directory of Open Access Journals) : DOAJ is a community-curated online directory that indexes and provides access to high quality, open access, peer-reviewed journals. DOAJ is independent.All DOAJ services are free of charge including being indexed in DOAJ. All data is freely available.

DOAJ operates an education and outreach program across the globe, focussing on improving the quality of applications submitted.

https://doaj.org/

- GENEVESTIGATOR : GENEVESTIGATOR is a high performance search engine for gene expression. It integrates thousands of manually curated, well described public microarray and RNA-Seq experiments and nicely visualizes gene expression across different biological contexts such as diseases, drugs, tissues, cancers, cell lines or genotypes. The high diversity of curated experiments allows GENEVESTIGATOR to project your genes or your data against a broad spectrum of reference profiles and datasets.

  https://genevestigator.com/gv/doc/intro_biomed.jsp

- Dryad Digital Repository :The Dryad Digital Repository is a curated resource that makes the data underlying scientific publications discoverable, freely reusable, and citable. Dryad provides a general-purpose home for a wide diversity of data types.

  http://datadryad.org/

- Cellosaurus : This is an online knowledge resource on cell lines.

  https://web.expasy.org/cellosaurus/

- NetPath : This is a manually curated resource of human signal transduction pathways. It is a joint effort between Pandey Lab at the Johns Hopkins University and the Institute of Bioinformatics (IOB), Bangalore, India,and is also worked on by other parties. NetPath hosts 45 signaling pathways, including 10 pathways with a major role in the regulation of immune system and 10 pathways with relevance to regulation of cancer.

  http://www.netpath.org/

- Ensembl genome database : Ensembl aims to provide a centralized resource for geneticists, molecular biologists and other researchers studying the genomes of our own species and other vertebrates and model organisms.Ensembl is one of several well known genome browsers for the retrieval of genomic information.
  http://asia.ensembl.org/index.html
- SNPedia : SNPedia is a wiki investigating human genetics. We share information about the effects of variations in DNA, citing peer-reviewed scientific publications.
  https://www.snpedia.com/index.php/SNPedia

- RefSeq :The Reference Sequence (RefSeq) database is an open access, annotated and curated collection of publicly available nucleotide sequences (DNA, RNA) and their protein products.This provides only a single record for each natural biological molecule (i.e. DNA, RNA or protein) for major organisms ranging from viruses to bacteria to eukaryotes.
  https://www.ncbi.nlm.nih.gov/refseq/

- MGI: MGI is the international database resource for the laboratory mouse, providing integrated genetic, genomic, and biological data to facilitate the study of human health and disease.
  http://www.informatics.jax.org/

- RGD :The Rat Genome Database (RGD) is the premier site for genetic, genomic, phenotype, and disease data generated from rat research. In addition, it provides easy access to corresponding human and mouse data for cross-species comparisons. RGD's comprehensive data and innovative software tools make it a valuable resource for researchers worldwide.
  https://rgd.mcw.edu/

- FlyBase :A Database of Drosophila Genes & Genomes
  https://flybase.org/

- ConsensusPathDB :ConsensusPathDB is a molecular functional interaction database, integrating information on protein interactions, genetic interactions signaling, metabolism, gene regulation, and drug-target interactions in humans.
  http://consensuspathdb.org/

- Microbiology Society :The Society supports sustainable open access models which maintain the scholarly publishing environment that is fundamental to how microbiologists improve, validate and share their research.
  https://www.microbiologyresearch.org/

- T-Coffee : T-Coffee is a multiple sequence alignment program. Its main characteristic is that it will allow you to combine results obtained with several alignment methods.
  https://www.ebi.ac.uk/Tools/msa/tcoffee/

- Biotech terms :It is an online glossary of terms associated with biotechnology.
  http://www.biotechterms.org/sourcebook/index.phtml

WORKSHOPS/ CONFERENCE/ INTERNSHIPS

Workshop / Conferences / Internships will be updated periodically

❖ INSTRUCTIONS TO CONTRIBUTORS

SLS newsletter, a biannual publication by the School of Life Science intends to enlighten the readers with research articles, reviews, reports, research highlights, news and facts, concerned to the advanced fields of biotechnology.

In order to acknowledge recent advancements and potential knowledge, bringing it to the notice of the science community through the newsletter, SLS welcomes original research, review and reports and details of the forthcoming events (conferences, seminars, symposia, trainings and workshops.)

❖ GUIDELINES FOR SUBMISSION:

✓ The article submitted must be an own write up on the selected article.

✓ References: The research paper referred must be assessed from renowned publishers (science, nature etc.,) and the references must be mentioned in the article.

✓ No Plagiarism will be entertained.

✓ The article should be typed in double spaced in word/doc format limited to < 1000 words with font, “Cambria” and font size 12 with 1.5 line spacing.

✓ Illustrations must be reduced to one – third of the page. Typed tables should be provided with titles. Authors are specially requested to reduce the number of tables, illustrations and diagrams to a minimum (maximum 2).

✓ The SLS newsletter assumes no responsibility for statements and opinions advanced by the contributors to the journal.

SLS NEWSLETTER - MEMBERSHIP FORM

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*Conditions apply

Note

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School of Life Sciences

2017-2019 (Current) (Summary)

- Total Number of Publication: **92**
- Grant: **Rs. 3,19,29,600 (11 grants)**
- Consultancy : **2.9 lakhs**
- H-Index of School: **13**
- Total Citation of School: **576 (as on 3. 9.2019)**
- Books Published: **1**
- Articles: **81**
- Chapter contribution : **5**
- Book / Research Paper Review: **5**

Current Research Grants from

विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF SCIENCE & TECHNOLOGY

आयुष मंत्रालय
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