



SBC(I) NEWSLETTER

Vol. No. 116 July 2023

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<http://www.sbcihq.in>

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How did I become interested in Biochemistry?

People often ask me how I got into science and more specifically, biochemistry. My favourite subject till Class 9 was geography: maps, latitudes, longitudes, International date line, the equator and time differences across the world, all of which caught my imagination and showed up in the excellent scores I secured in the annual exams!

My earliest recollection of exposure to science as a teenager was during the summer holidays in the 60's when my siblings, cousins and I visited our grandfather in Mysore in our ancestral home "Margosa Lodge" which was a fairly big house that was built in 1894. It is during these visits to Mysore that I was exposed to "chemistry" inspired at least partly by my uncle Dr. D. Rajagopal Rao, a research scientist in CFTRI at that time. He had a small room in the attic in Margosa Lodge where he occasionally spent time developing photographic films and carried out some chemistry experiments.

At Hyderabad Public School (HPS), education in chemistry began and I found it to be my favourite subject during the 5 years of high school. This was primarily because of Mr. Venkatachary, my chemistry teacher, who made the subject so interesting and exciting. Inorganic salt analysis - one of the several experiments that one learnt during high school, was my favourite experiment so much so that I distinctly remember even after 50 years that I was given a mixture of sodium nitrate and copper sulphate to analyze in my Indian School Certificate (ISC) chemistry practical exam!

Therefore, it was quite natural for me to study chemistry even after my ISC. During the three years of undergrad, I got interested in chemistry because of two wonderful teachers: one who taught organic chemistry (Dr. Mittal) and the other who taught plant physiology (Dr. Verma). The metabolic cycles: Calvin cycle, Hatch-Slack cycle fascinated me and every time I saw different kinds of leaves, I used to wonder how efficiently these cycles were operating.

One of the summers during my B.Sc course I visited my uncle in Mysore. Since I knew a little bit about biomolecules, he decided to help me do an experiment to separate amino acids by paper chromatography using high voltage. Loading the amino acid samples on a Whatman paper using a capillary tube (one had to pipet microliter amounts into a graduated glass capillary by sucking through a little mouthpiece attached to the capillary with a plastic tube, running electrophoresis at high voltage, detecting the amino acids after separation using the ninhydrin reagent, calculating the R_f values for each of the amino acids... all of this excited me so much that I quickly made up my mind that chemistry of biomolecules was my future! For several years I kept that paper chromatogram showing it to all my friends.

However, it was at Pantnagar (where I studied biochemistry for my Masters) that I realized that chemistry was coolest when applied to life! Again, there were some excellent teachers who made the subject come alive. Dr. N Singh who taught chromatography and electrophoresis drilled into us the basic concepts of separation technology along with Profs. K.G. Gollakota, U.K. Misra and G.K. Garg (who had just returned from Urbana-Champaign after a sabbatical stint). I learnt about enzymes, vitamins & hormones and molecular biology from these great teachers.

One practical course BPC 463 (0:3) "Biochemical preparations" was taught by G.K. Garg and he challenged the class that if anyone could isolate ATP from rabbit muscle following a standard protocol, an "A" grade would be given. I remember to having got some ATP but when the final grades were



out, I got only a B grade in that course! Garg later told me that the A grade was to be given only if pure ATP was isolated. The TLC run of my sample showed more than 3 spots!

I did my Master's dissertation project with U.K. Misra and during this time, I learnt a lot from him: nuances of control experiments, statistical treatment of data, reproducibility. My M.Sc thesis went through a number of drafts and corrections. All of this was part of the learning curve which ultimately resulted in a publication although 4 years later.

Rao, D.N. and Misra, U.K. (1981) Ovarian and Uterine Lipids of Rats Administered Excess Vitamin A. *Acta Vitaminologica et Enzymologica*, 3, 3-7.

My very first seminar in a 2 credit course normally taken by senior M. Sc. and Ph.D. students was on "Unusual Amino Acids in Nature". A whole month before the D-day, I was furiously scanning Biological Abstracts and Chemical Abstracts in the wonderful library we had in the university. We had learnt about the 20 standard amino acids generally found in proteins but what fascinated me was the discovery of amino acids other than the 20 standard amino acids. Almost every other day I visited the library looking out for newer amino acids that were being found and the abstracting journals kept me up to date. Going through abstracts in journals one felt that one knows all about research. However, when I joined the Indian Institute of Science in Bangalore in 1977 for my doctoral studies, I realized that while reading an abstract of research article was fun and gave an overall idea of the research findings, it was only an indicative narration; reading the full article was more enriching and satisfying.

The Department of Biochemistry at the Indian Institute of Science in Bangalore was considered as the "Mecca" for biochemists. One of the oldest biochemistry departments on this side of the Atlantic, it had acquired a reputation for being a center of excellence. Anyone who wanted to pursue biochemistry longed to be a part of this world-renowned department. Dr. G.K. Garg in Pantnagar encouraged several of us to join the IISc Biochemistry department for our doctoral studies. He was an alumnus of IISc and thought the world of this department. To get admission there, one had to clear a written exam and face a daunting interview with about 18 faculty members of the biochemistry department shooting all sorts of questions at you. As luck would have it, the offer letter from IISc came sometime in the third week of June and I remember that day I called myself a "Biochemist".

Five years in the biochemistry department at IISc, Bangalore saw me learning the ins and outs of purifying proteins in Prof N. Appaji Rao's laboratory. Appaji Rao was an excellent enzymologist and a great mentor whose laboratory was a much sought after one among students. It is said that if one wanted to purify and study a protein the primary source of material often is a piece of an animal that you or a friendly laboratory assistant fetched from a slaughter house. If you want to escape the trip to the slaughter house, you should work on plant proteins and all one had to do was to grow a plant - pick the leaves or roots or flowers to get enough material to work on. That is what I did. Bucket biochemistry, as it was called, was definitely the correct description for the experiments that I did in those 5 years of graduate study. Three years into my doctoral study a manuscript was sent off to BBRC and after 3.5 weeks (those days manuscripts were sent to journals by regular air mail post) Bernard Horecker, Editor of BBRC wrote back saying that the manuscript was accepted as is.

Rao, D.N. and Rao, N.A. (1980) Allosteric Regulation of Serine Hydroxymethyltransferase from Mung bean (*P. aureus*). *Biochem. Biophys. Res. Commun.* 92, 1166-1171

My very first publication-what a thrill !

Once I started working on enzymes (proteins), I never wanted to do anything else-it changed my life forever. One remembers Arthur Kornberg's prefatory article in the Annual Reviews of Biochemistry entitled: Never a dull enzyme. Purifying enzymes was the big thing I did during my Ph.D and it's a skillset that's been really important all through my career. Very early on I realized what Efraim Racker once said: "Don't waste clean thoughts on dirty enzymes". The moral of the story- Purify ! Purify ! Purify.

I fell in love with biochemistry when I first heard about it as an undergrad (circa 1973) and that love continues even after fifty years. Knowledge of the fundamentals of biochemical processes is essential if we are to gain an understanding of disease (plant or animal) processes. This understanding is necessary for a rational approach to prevention and cure of disease. Biochemistry reveals the workings of the natural world, allowing one to understand and appreciate the unique and mysterious condition that one calls life. Using biochemical techniques one reveals the beauty of nature's chemical processes.

The biochemistry department in IISc (now over a century old) had an atmosphere of excitement and discovery among the faculty and students. The department encouraged the free exchange of results and ideas, which gave us the opportunity to interact with others in our own or related fields. One of these avenues for these exchanges was going to national (often) and international (not so frequent) conferences. One great place to meet biochemists (biological chemists) in India is at the Annual meetings of the Society of Biological Chemists- SBC (I). The SBC (I) sponsors many activities that are important to biochemists and to the life sciences community as a whole. I have been to several SBC (I) annual meetings. Its one way to meet old friends, make new friends and most important of all listen to some good biochemistry being done in our country. Every biochemically minded scientist should be a SBC (I) member and get involved in its programs. This year the 92nd annual meeting of SBC (I) is being held in Goa during Dec 18-20, 2023 the theme being **Biological chemistry: opportunities, challenges and the way forward**. Hoping to meet many of you in Goa.

Dr. D. N. Rao

President, Society of Biological Chemists (India)



92nd ANNUAL MEETING OF THE SOCIETY OF BIOLOGICAL CHEMISTS (INDIA)

Biological Chemistry: Opportunities, Challenges and the Way Forward

DECEMBER 18 – 20, 2023

ORGANIZED BY

BITS PILANI, K K BIRLA GOA CAMPUS

DATES

Early Bird Registration	1 st May '23 till 30 th June '23
Last Date of Registration	31 st August '23
Early Bird Abstract Acceptance Confirmation	15 th July '23
Final Abstract Acceptance Confirmation	15 th September '23

REGISTRATION FEES

	Early Bird	Regular Registration
Student and Post-Doctoral Fellow	Rs. 4,000	Rs. 5,000
Student and Post-Doctoral Fellow *	Rs. 5,000	Rs. 6,000
Faculty	Rs. 7,500	Rs. 9,000
Industry	Rs. 12,000	Rs. 15,000

*With limited accommodation in hostels on first come first serve basis


THEMATIC AREAS

- Biochemical Engineering and Synthetic Biology
- Cancer Biology
- Genetics and Gene Regulation
- Green Biochemistry: Environmental Engineering; Bioremediation
- Immunology
- Infectious Diseases and Antimicrobial Resistance
- Lifestyle and Congenital Disorders
- Molecular Modeling and Informatics
- OMICS Biology
- Plant Biotechnology
- Stem Cell and Regenerative Medicine
- Structural Biology

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BITS Pilani
K K Birla Goa Campus

92nd ANNUAL MEETING OF THE SBCI DECEMBER 18 – 20, 2023



ABOUT SBC

The Society of Biological Chemists (India) founded in 1930, with its Headquarters at IISc Bangalore, is one of the oldest scientific societies of India. The Society played a crucial role during the second world war period by advising the Government on the utilization of indigenous biomaterials as food substitutes, drugs and tonics, on the industrial and agricultural waste utilization and on management of water resources. The other areas of vital interest to the Society in the early years were nutrition, proteins, enzymes, applied microbiology, preventive medicines and the development of high-quality proteins from indigenous plant sources.

SBC(I) has more than 3700 life members and is a major forum which brings together researchers from all areas of biological chemistry. One of the major objectives of the Society is to coordinate the work of biological chemists in different parts of India and to hold meetings and symposia for discussions on important topics of scientific and technical interest. The annual meetings of the society are attended by a large number of students and scientists engaged in basic and translational research. This year we expect about 600 delegates including about 400 students and 200 national and international scientists. More information about SBC is available at www.sbcihq.in

ABOUT BITS PILANI

The Birla Institute of Technology & Science, Pilani (BITS Pilani), is a deemed university recognized as an "Institution of Eminence" by the Ministry of Education, Government of India. BITS Pilani is a pioneer in Higher education in all the major disciplines of Engineering and Sciences, with Humanities, Social Sciences, Economics and Finance in its ambit. Its four modern, aesthetically beautiful and fully residential campuses at Pilani, Dubai, Goa, and Hyderabad, with state-of-the-art facilities for teaching and research, provide a unique ambience for student and faculty interaction. BITS Pilani is establishing yet another campus in Mumbai to house the School of Management and School of Law. The primary aim of BITS Pilani is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century.

The Institute was established in 1964 by late Shri G. D. Birla, an eminent industrialist, a participant in the Indian freedom struggle and a close associate of Mahatma Gandhi. Over the years, BITS Pilani has provided the highest quality technical education to students from all over India, admitted on the basis of merit. Its graduates can be found worldwide in eminent leadership positions in all areas of engineering, science and commerce. BITS Pilani is proud to have given 13 unicorns to the country and more than 7500 founders and co-founders. The Institute's commitment to excellence, adherence to merit, transparency, innovation, and enterprise have characterized its steady march to eminence.

BITS Pilani has emerged as a hub for sophisticated research in science and engineering, with an H-index of 146, ~70% publications in Q1/Q2 journals and 144 patents in the last four years. It is the only Private University which DST, Government of India, has identified to establish a Technology Innovation Hub under the Bio-Cyber Physical Systems vertical with a grant of Rs 125 Crore.

ABOUT BITS PILANI, GOA CAMPUS

Nesting in the lap of verdant hills and overlooking the Zuari River, the Campus is spread over an area of 180 acres. The location of the campus is unique in respect of scenic beauty and panoramic view of picturesque surrounding encompassing the Zuari River, hillocks, waterways, forests and landscape. In the midst of idyllic, sylvan beauty, the campus houses the Main building, having academic and administrative offices, guest houses, hostels for boys and girls, Student Activity Centre, faculty and staff quarters, medical centre, playground and shopping complex. The campus boasts of a state-of-the-art auditorium and other conference facilities, spacious and well-equipped labs, classrooms with soundproof acoustics, computer labs, library etc. which define the infrastructural counters of the institution.

The campus has a unique ecosystem promoting cutting-edge research based on multidisciplinary intertalk, tapping into the right legacy of entrepreneurial, scientific and technological resources. BITS-Goa houses the "Central Sophisticated Instrumentation Facility" where the sophisticated, state-of-the-art instruments are in regular use by internal as well as external users, "Anuradha and Prashanth Palakurthi Centre for Artificial Intelligence Research", whose mission is to conduct high-quality, focused research in AI, and to be a nursery for training future generations of skilled and responsible data scientists, the "Center for Innovation, Incubation and Entrepreneurship" and "BITS BIRAC BioNEST incubator", which promote innovation and entrepreneurship in various fields including Health & Environment.

GUIDELINES FOR ABSTRACT SUBMISSION

92nd ANNUAL MEET OF THE SOCIETY OF BIOLOGICAL CHEMISTS

Venue: BITS Pilani K K Birla Goa Campus, Dates: 18 to 20 Dec 2023

Title of the abstract in Times New Roman, Font size: 14, Bold, centered paragraph

Author names Times New Roman, Font size: 12, Regular, centered paragraph

A. B. Last name*; C. D. Last name

* Presenting author/s

Address of the Institution (Times New Roman, Font size: 12, Regular, centered paragraph) E-mail of presenting author/s (Times New Roman, Font size: 12, Regular, centered paragraph)

The main text, Times New Roman, Font size: 12, Regular. Paragraphs are justified (straight-edged) on both left and right.

Do not change the page and margin formatting, which A4 and 1 inch on each side.

The limit for your abstract is **300 words** only. Abstracts that do not meet these formatting requirements will be returned. The organizing committee reserves the right to edit abstracts for correct formatting.

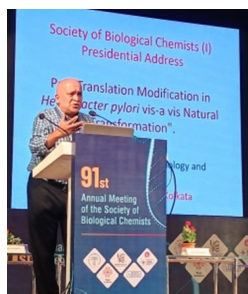
Figure/Scheme: If any, please insert only **one** file in **TIFF** or **JPEG** format.

Keywords: Maximum **Five** (5) keywords are allowed; Times New Roman, Font size: 12, Regular. Paragraphs are justified (straight-edged) on both left and right.

91st SBC(I) ANNUAL MEETING REPORT (KOLKATA)

The Society of Biological Chemists (I) Kolkata Chapter in association with Bose Institute, CSIR-Indian Institute of Chemical Biology, National Institute of Biomedical Genomics and Sister Nivedita University, Kolkata organized the **91st Annual Meeting of the Society of Biological Chemists (India)**, during 8th to 11th December, 2022, at the Biswa Bangla Convention Centre, Kolkata. The theme of the meeting was ***Life at the Confluence of Biology and Chemistry***.

The 91st Annual Meeting of the Society of Biological Chemists (India) was attended by about 600 delegates including 400 students and 200 national and international (from USA and Singapore) scientists engaged in biological research. The scientific program highlighted both basic and translational aspects of biological research.



Prof. D. N. Rao, President, SBC(I), Prof. Amitabhva Mukhopadhyay, Vice-president, SBC(I), Prof. Dr. Gaurisankar Sa, Vice-president, SBC(I), Prof. Dipak Saini, Secretary, SBC(I), Prof. Dhrubajyoti Chattopadhyay, Chief Advisor, Organizing Committee of 91st Annual Meeting of SBC(I), Prof. Susanta Roychoudhury, President, Organizing Committee of 91st Annual Meeting of SBC(I), Prof. Tanya Das, Jt. Secretary, Organizing Committee of 91st Annual Meeting of SBC(I), Prof. Sib Sankar Roy, Jt. Secretary, Organizing Committee of 91st Annual Meeting of SBC(I) graced the inaugural program. The inaugural program started with an invocation, which was a nice collage of Sanskrit sloka and Tagore's song, followed by watering of a plant by Prof. D. N. Rao and other dignitaries present on the Dias. Prof. Tanya Das delivered the welcome address, followed by Prof. Susanta Roychowdhury, who elaborated on the history of SBC(I) and its aims. Prof. Dhrubajyoti Chattopadhyay addressed the gathering and informed them about the objectives of the 91st Annual Meeting of the Society of Biological Chemists (India). There Prof. Dipak Saini introduced Prof. D. N. Rao to the audience, who then kindly delivered the much-awaited Presidential Lecture. Prof. Sib Sankar Roy delivered the Vote of Thanks to memorably sign off which ended the inaugural ceremony.

The scientific session started with the Keynote Address by Prof. Sankar Ghosh, Fellow of National Academy of Sciences (NAS), USA, Fellow of American Association for the Advancement of Science (AAAS), and Chairman and Silverstein & Hutt Family Professor of the Department of Microbiology & Immunology at Columbia University Medical Center, USA. The following session was SBC(I) Award Session, in which three awards were given this year. 'D.P. Burma Award' for the year 2022 was given to Dr



Rajendra Prasad of Amity University, Haryana; the 'P.S. Sarma Award' for the year 2022 was given to Dr. Arun Shukla of Indian Institute of Technology, Kanpur and the 'PA. Kurup Award' for the year 2022 was given to Dr. Dipshikha Chakravorty of the Indian Institute of Science Bengaluru. The Executive Council (EC) meeting was successfully conducted on 8th December, 2022 under the Chairmanship of Prof. D. N. Rao. A

special scientific session on 'Covid and Long Covid' was also held in which basic scientists and clinicians jointly discussed about the subject and interacted with the audience, especially the young scientists, about their experience and related opinion regarding the disease and its long-term effects.

After the day-long scientific sessions a cultural program staging Tagore's dance drama 'Chitrangada'.



Next two days had witnessed lectures by established as well as comparatively young scientists representing all the states of India. The topics covered almost all the aspects of modern research on Biology and Chemistry. There were three parallel sessions each day and all the halls were totally full till the last lecture of the last day. On 9th December, 2022, after the scientific session, there was Annual General Meeting, in which the president, SBC(I), and other committee members of SBC(I) Head Quarter, hugely appreciated the local organizing committee for organizing such a successful meeting in Kolkata. All the members present in the AGM enthusiastically echoed the same. Up on the request and logistic explanations of Dr. Samit Chattopadhyay, it was decided in this AGM that the next Annual Meeting will be in BIITS, Goa. The last session of this annual meeting was a panel discussion on "*Confluence of Biology and Chemistry in shaping Health Science and Translational Research in India*" by basic scientists as well as entrepreneurs. It was a very fruitful interaction between the speakers and the audience.

One of the major attractions of the total meeting was the poster presentation. This year around 300 posters were presented by the graduate and post-doctoral students from all over the country. Posters were judged by the competent judges committee and eighteen posters were selected for Best Poster Award among



which top nine were selected for the Flash-Talks. After the panel discussion on the last day, an Award-giving ceremony was arranged in which 18 students selected for their posters judgement received certificates of merit and cash prize. The three and half day 91st Annual Meeting SBC(I) ended with a valedictory session including the vote of thanks and finally the Indian National Anthem.

SBC(I) AWARDS 2022 FOR BEST POSTER

Name	Institute Name	Title
Best Poster Awards		
Abarna Sinha	NIBMG, Kalyani	Suppression of MAL gene expression in HPV16 related cervical cancer is associated with poor patient survival and mediated by the interactive roles of antisense lncRNA
Nishan Mandal	IISER, Kolkata	Autophagy defect results in abnormal clearance of mitochondria and energy depletion in the MPS VII fly brain
Nilanjan Ganguly	CNCI, Kolkata	NLGP interacts with Dectin-1 receptors on dendritic cells to initiate an intracellular signal via CARD9-NFκB axis to impose type I immunity
Shrabastee Chakraborty	CSIR-IICB	Role of E3 ligase CHIP in Monoubiquitination and Nuclear Translocation of Tumor Suppressor PTEN
Rupam Paul	IISER, Kolkata	Copper at the helm of macrophage-Leishmania interaction
Shantanab Das	ISI, Kolkata	Universal Penalized Regression (Elastic-net) model with differentially methylated promoters for detecting oral cancer
Ankita Sarkar	CSIR-IICB	Butyrate limits inflammatory macrophage niche in Nonalcoholic Steatohepatitis
Piyanki Das	Viswa-Bharati University	Fine-tuning of “cellular and oncogenic stress balancing mechanism” during KSHV-associated malignancy as a potential therapeutic strategy
B. S. Narasinga Rao Best Poster Awards		
Chandramouli Swamy T.M	Gulbarga University, Karnataka	Bacterial degradation of Polyethylene terephthalate (PET) plastic.
Ankita Mandal	Bose Institute	Taurine ameliorates colitis related pathophysiology and inflammation
Sillarine Kurkalang	NIBMG, Kolkata	Characterization of Cellular Diversity in Oral Squamous Cell Carcinoma (OSCC-GB) Reveals Two Dominant Cellular Programs
Ankush Paladhi	University of Burdwan	Mitochondrial Reactive Oxygen Species Regulate the Natural Killer-Dendritic Cell Immune Axis in Colon Cancer Immunotherapy
D. P. Burma Poster Awards		
Priya Rani	IISc	The interplay between miR-22 and RBPs at the 5'UTR of Coxsackievirus B3 RNA:
Rudra Chakravarti	NIPER, Kolkata	Small molecule inhibitors of NHEJ pathway increase Paired nickases mediated Targeted Knock-in
P. R. Sudhakaran Poster Awards		
Kalyani R Aswale	National Institute of Animal Biotechnology	Pulling the tricks out of the cap - identification and characterization of mRNA capping machinery in Toxoplasma gondii
Subham Basu	CSIR-IICB	The RNA Polymerase II elongation factor ELL is functionally regulated by multiple proteins in a context dependent manner
U. K. Misra Best Poster Awards		
Sudip Nag	IIT-KGP	An Isothermal Nucleic Acid Amplification Based Low-Cost Platform Technology for Rapid Detection of Pathogenic Infection at Point of Care (POC)
Mayurakshi Nag	University of Calcutta	Culturable and unculturable endosymbionts regulates the fitness of nitrogen fixing endophytic yeast Rhodotorula mucilaginosa JGTA-SI

NOMINATIONS FOR 2023 SBC (I) AWARD

This year Sreenivasaya Memorial Award, Prof I. S. Bhatia Award, Prof. A. N. Bhaduri Memorial Lecture Award, Krishnamurthy Award (best paper published in Indian Journal) will be given at the Annual Meeting of SBC(I) to be held at Goa. Please send nominations in a single consolidated PDF including cover letter addressed to Hon. Secretary, SBC(I) along with membership status and brief resume of the nominee to sbcihq@gmail.com

The complete application should reach the SBC(I) office on or before 30th September 2023.

CRITERIA FOR 2023 AWARDS

SREENIVASAYA MEMORIAL AWARD

Year of Commencement	Frequency	Value
1972	Once in three years	Rs.10,000/- with a citation

Eligibility:

1. The award is for the best work done in the field of Biochemistry and Allied Sciences in India.
2. The recipient of the award should not have completed 50 years before January 1st in the year for which the award is announced.
3. The award has to be nominated by a life member of the society and no self-nomination is accepted.
4. A lecture will be scheduled at the Annual Meeting of SBC(I) and presentation will be made at that time.
5. The Award is open to all Indian Scientist who must be a life member of Society of Biological Chemist India.
6. Only one person can be nominated for one award.

PROF I. S. BHATIA AWARD

Year of Commencement	Frequency	Value	Field of research
2000	Once in three years	Rs.10,000/- with a citation	Original research contributions in Plant Biochemistry, Molecular Biology & Allied Sciences

Eligibility:

1. The Award will be considered for "life time" achievements in the above disciplines.
2. The award has to be nominated by a life member of the society and no self-nomination is accepted.
3. The Awardee should give a lecture at the Annual General Body Meeting of the Society of Biological Chemists (I) and should have been a member of the Society for at least two years.
4. The Award is open to all Indian Scientist who must be a life member of Society of Biological Chemist India.
5. Only one person can be nominated for one award.

PROF. A. N. BHADURI MEMORIAL LECTURE AWARD

Year of Commencement	Frequency	Value
2006	Once in three years	Rs. 10,000/- with a citation

Eligibility:

1. The recipient of the award should be below 50 years of age on December 31st of the year of the award.
2. The award is open to all Indian Scientists who hold a permanent position in Universities, public funded Institutes and National laboratories.
3. The award is given for Biological Chemistry and Allied Sciences, preferably related to parasitic infections.
4. The award has to be nominated by a life member of the society and no self-nomination is accepted.
5. A lecture will be scheduled at the Annual Meeting of SBC(I) and presentation will be made at that time.
6. The Award is open to all Indian Scientist who must be a life member of Society of Biological Chemist India.
7. Only one person can be nominated for one award.

KRISHNAMURTHY AWARD

Year of Commencement	Frequency	Value
1976	Annually	Rs.2,000/- with a citation

Eligibility:

1. The recipient of the award should be below 30 years of age on January 1st of the year of the award.
2. The paper should be in the area of Biological Chemistry and Allied Sciences and the work should have been carried out in India.
3. The paper published in any Indian Scientific Journal in the previous year will be considered for the award.
4. In the case of multiple authorship, the senior author can nominate one of the authors or could be shared by all the eligible authors.
5. The Award is open to all Indian Scientist who must be a life member of Society of Biological Chemist India.
6. Only one person can be nominated for one award.

Here's is an opportunity to be very creative and show your Talent!

Put your creations in the form of cartoons, science comics, comic strips, limericks, excerpts from the conference you attended! Anything to do with Science, commentaries on new exciting developments is also welcome.

We are looking for young talents who can contribute to the SBC(I) Newsletter, which we are planning to bring every few months. Submit your contributions to us, and of course, the best contribution will be rewarded!

We will accept the contributions throughout the year but hurry up to see your contribution in the next Newsletter.

Don't wait! Pen down your excellent creative thoughts and reach us at

Society of Biological Chemists (India)

Indian Institute of Science

Bangalore 560 012

Phone 91-080-23601412, Email sbcihq@gmail.com

Send us a hard copy by post and a soft copy by an E-mail

INTERNATIONAL TRAVEL FELLOWSHIPS

GUIDELINES FOR AWARDING INTERNATIONAL TRAVEL FELLOWSHIPS FOR Ph.D. STUDENTS BY THE SOCIETY OF BIOLOGICAL CHEMISTS (INDIA)

One travel fellowship of Rs.15,000/- per quarter (Two awards per year) will be awarded

* Award period

- I. Jan- Mar
- II. Apr-June
- III. July-Sept
- IV. Oct-Dec

** Last Date for receipt of application

-Dec 31 Previous Year
.....Mar 30
.....June 30
.....Sept 30

For example, those who wish to attend an International meeting scheduled to be held during July-Sept 2023, should submit the application by 30 June 2023.

*Award period refers to the period during which the meeting is scheduled to take place.

** The Committee will meet on these days to decide on the award.

This award is meant for Ph.D. students only.

The applicant should currently be a member of the SBC(I) and should have been a member for at least two consecutive years.

2022 ANNUAL AWARDS

The Society announced the Annual Awards for the year 2022 at its Annual Meeting Held at Kolkata during December 8th to 11th 2022. This year three awards were given and the society congratulates all the awardees and wishes them good luck in perusing their goals. A brief description of the research interests, as provided by the awardees, is given below.

DP BURMA MEMORIAL AWARD



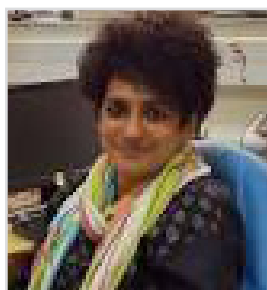
Dr. Rajendra Prasad
Amity University Haryana

Dr. Rajendra Prasad is currently the Dean, Faculty of Science, Engineering and Technology at Amity University Haryana, Gurugram. Dr Prasad was a former Professor & Dean of School of Life Sciences at Jawaharlal Nehru University, New Delhi, where he served for 40 years in various capacities including Rector (Pro-Vice-Chancellor).

Dr. Prasad, a Ph.D. from Central Drug Research Institute, Lucknow, joined JNU in 1976 as an Assistant Professor after doing post-doctoral training at University of Southern California, Los Angeles. He has been a visiting Professor in several universities and institutes which included visiting faculty at Ecole Normale Supérieure – CNRS Paris, France; Catholic University, Louvain-la – Neuve, Belgium; Technical University, Valencia, Spain; Bristol Mayer Squib, Princeton, USA; University of Darmstadt, Germany; New York Medical College, USA.

Dr. Prasad has worked extensively on clinical drug resistance prevailing in pathogenic fungal species. His research led to the first identification of a major multidrug transporter in *Candida albicans* which has changed the whole gamut of antifungal research. Multidrug resistance (MDR) transporters belonging to either ATP-binding Cassette (ABC) or Major Facilitator Superfamily (MFS) groups are major determinants of clinical drug resistance in fungi. With large numbers of drug transporters potentially involved in clinical drug resistance in pathogenic yeasts, his work focuses on the drug transporters of *C. albicans*. This organism harbors many such proteins, several of which have been shown to actively export antifungal drugs. Of these, the ABC protein CaCdr I and MFS protein CaMdr I are the two most prominent and have thus been subjected to intense site directed mutagenesis and suppressor genetics-based analysis. Numerous results point to a common theme underlying the strategy of promiscuity adopted by both CaCdr I and CaMdr I. His work has provided insight into the inter-domain communication, and how multidrug transporters function to deliver their remarkable poly-specificity. His group also showed that an increased *CaCDRI* transcription and mRNA stability are two predominant factors implicated in the development of azole tolerance. More recently his work has shown that alternate splicing events of select genes play an important role in governing drug resistance in *C. albicans*. His current focus has been to understand the pan-resistant emergence of *C. auris* which is simultaneously resistant to multiple classes of the antifungal agents and pose a greatest impediment to antifungal therapy. The canonical drug-resistance mechanisms are unable to explain why *C. auris* manifest high intrinsic resistance. Dr Prasad's recent work on experimental evolution of drug resistance and analysis of alterations in karyotype and, transcriptional profiling of evolved drug-resistant isolates of *C. auris* is not only helping to track down different trajectories of adaptation but also revealing new determinants of antifungal resistance.

P A KURUP ENDOWMENT LECTURE AWARD



Prof. Dipshikha Chakravorty
Dept. of MCB, IISc.

Prof. Dipshikha Chakravorty, is a Professor in the department of Microbiology and Cell Biology, Indian Institute of Science. Prof. Chakravorty's expertise lies in host-pathogen interaction, vaccine development and Immunology. She along with her group discovered a unique phenomenon of division of bacteria in a vacuole. Working with *Salmonella* which is strictly vacuole pathogen, showed that *Salmonella* containing vacuole (SCV) contains one *Salmonella* per vacuole and during intracellular division the *Salmonella* divides along with its vacuole thereby giving rise to single *Salmonella* in a vacuole. The division of vacuole is the first novel report from her lab. She and her group is looking deeply into the mechanism of the division and how this phenomenon is important for the establishment of infection. Salmonellosis has become a major thrust now due to its ability to infect diverse fauna and flora. Her research opened up the most challenging question of how a pathogen when protected by a barrier can be made accessible to the anti-microbials. Further, the vacuole around the pathogen will also help the bacteria to overcome

the immune attack by the host. Hence, her group revealed a major question in strategies that the bacteria use to evade the antigen presentation. This may be one of the prime reasons for the persistent infections and further development of persisters and resister strain. Salmonella containing vacuole (SCV) or pathogen containing vacuole (PCV), is the hallmark of the unique niche that the bacteria establish. Her group also proved that because Salmonella is in a membrane bound compartment, various host proteins get recruited to this vacuole. SCV is made up of more than 40 proteins. Important immune system molecules like MHC-II not only gets recruited but also degraded by ubiquitination mediated degradation, thereby downregulating antigen presentation. BPI (Bactericidal -permeability increasing protein) which is a prime anti-bacterial molecule is used by Salmonella to end the cells and then they degrade this BPI to establish a safe niche. These and many other stealthy evasion strategies by the bacteria are unravelled by her research and made her think in a different way to tackle the intravacuolar bacterial pathogens. She tried to ask whether the antimicrobials when send through a lipid enclosed vesicles or other nanoparticles, will get fused with SCV and kill the bacteria. In fact, this approach worked very well and cleared the infection in in vitro and in vivo animal model with half the dose of antibiotic, which otherwise was not able to clear the infection. The mention of her article by faculty of 1000, her article being cited in Nature Structural Biology and many other reputed journals are the indications of her valuable contribution. Dipshikha, further went ahead with developing a successful vaccine candidates , one of which got the US patent can be very beneficial in poultry and Animal husbandry where there is multi-billion dollar loss upon Salmonella infection. Dipshikha's innovation thinking also lead to development of novel needle-less delivery system for vaccines. She is an avid collaborator, which spans across Institute and country. From Aerospace Engineering, to Material , Mechanical, Chemical Engineering , Chemistry, she has collaborated and gained deep insights into the infectious diseases. Currently, she is also trying to understand how the fluid dynamics play a role in bacterial pathogenesis. Finally, Dipshikha's group has put an end to the long debate which blamed the contaminated irrigation water for the tomato infection by Salmonella. Her group showed that Salmonella took a very special route to infect plant. Salmonella, entered through the natural wounds or openings created by the emerging of lateral roots. It was shown that if the soil contains Salmonella and a seed is sowed, then the plants, leaves, flowers and fruits harbour Salmonella, making it a systemic infection. This was an important finding as tomato is a salad fruit and is often eaten raw. She is further working on other salad vegetable and their susceptibility to Salmonella infection. In a decades time, the life of Salmonella and its strategies are decoded. Her work carries potential application and she is working towards reaching them to public. Time has also come to look beyond antibiotics for curtailing bacterial infections. Her understanding about the infectious disease biology will bring about newer and successful strategies to tackle infectious diseases.

P S SARMA MEMORIAL AWARD



Dr. Arun K. Shukla
IIT, Kanpur

Dr. Shukla's research is focused on understanding the largest class of cell surface receptors in our body, which are referred to as G protein-coupled receptors (GPCRs) or seven transmembrane receptors (7TMRs). These receptors are intricately involved in almost every physiological process in our body including vision, olfaction, cardiovascular regulation and immune response. Approximately half of the currently prescribed medicines exert their therapeutic effects through these receptors including those prescribed for heart failure, hypertension and neurological disorders. The overarching theme of Dr. Shukla's research is to understand the structure, function and regulation of GPCRs, and to leverage this information for designing and discovering novel therapeutics with minimized side-effects. Dr. Shukla's outstanding research work on structure and function of GPCRs carried out at IIT Kanpur over the past several years has made fundamental contributions in the domain of GPCR biology and established several paradigms in the field. A number of GPCR targeting drugs exhibit severe side-effects limiting their clinical utility, and this

often arises from one of the two major signaling pathways downstream of these receptors. Dr. Shukla's work has demonstrated that by selectively engaging one of these pathways using specific ligands may help minimize the side-effects of commonly prescribed medicines, and this paradigm is now an integral part of the ongoing efforts on GPCR targeted drug discovery. Dr. Shukla has also established a synthetic antibody technology platform and successfully harnessed it to generate a number of designer sensors to probe GPCR activation, and modulators to allosterically control GPCR trafficking and signaling in cellular context. These tools have far-reaching implications for illuminating novel aspects of GPCR biology, and Dr. Shukla's has shared them with a number of laboratories across the world to advance the knowledge in this area. Dr. Shukla's laboratory has also discovered a set of membrane receptors, which are identical to GPCRs in their architecture, however, they signal through very distinct mechanisms. These receptors represent the first

Report on International Conference of the Korean Society of Molecular and Cellular Biology (KSMCB) 2022.

It was an honour and a privilege to represent the Society of Biological Chemists India, SBC-(I) at the 2022 International Conference of the Korean Society for Molecular and Cellular Biology (KSMCB). The conference was held from Sep 28th to 30th, 2022, at Korea's most prestigious location – Jeju island. Jeju Island is an extinct volcano with sparkling seas, rocks, and sandy beaches. The scientific program had a great lineup of speakers who delivered talks on various aspects of scientific breakthroughs and advances. There were a series of plenary lectures by Noble laureates and by the world's leading scientists, including David Baker, Edvard Moser, And V. Narry Kim. The conference also nourished the next generation of scientists by providing opportunities for poster presentation sessions, short talks by young investigators, and award presentations. My talk was scheduled in a Global Network session on Sep 29th. The session was chaired by Dr. Kyung Kim (Pohang University of science and technology, Korea). In addition to my lecture, talks were given on the EGFR pathway in colorectal cancer by Reynaldo L. Garcia (University of Philippines), exploiting genetic incompatibility in bacteria and viruses by Julius Fredens (University of Singapore), and the contribution of oil palm age on response to multiple stresses by Azreena Mohamad (University Putra Malaysia). I spoke on the mechanisms of phenotypic antimicrobial resistance (AMR) in *M. tuberculosis* and the targeting of phenotypic AMR by N-acetyl cysteine. The conference was a great learning experience for me, and I benefitted from this visit by fostering collaboration with Dr. Fredens. I am grateful to SBC-I for providing me with an exciting and memorable scientific forum to present our scientific discoveries.



Dr. Amit Singh
Dept. of MCB, IISc

CAMA MEMORIAL TRAVEL GRANT

Scientists attending and presenting a paper in an International Congress or FAOBMB meeting held once in 2 years or at infrequent intervals may apply for the award.

The candidate should be a member of SBC(I) for at least two consecutive years.

The candidate should have obtained partial support from other agencies and there should be a proof to that effect.

Applicants are invited to respond appropriately to the details informed in the advertisement. The application should reach the following address before 1st April of the year of the award.

Hon Secretary
Society of Biological Chemists,
Indian Institute of Science, Bangalore 560 012

FELLOWSHIPS FOR YOUNG SCIENTISTS

The Society of Biological Chemists (India) has instituted a "financial support for research" scheme to support young research workers to carry out short term training/research activities in well-established laboratories/ institutions in India. The value of the fellowship is fixed at Rs. 5,000/- per term per selected fellow, and the total number of fellowships awarded every year will be up to 10.

Terms and Conditions;

1. Funding Rs. 5,000/- per fellow for periods up to 6-8 weeks.
2. The grant of Rs. 5,000/- will be awarded in the form of Rs.1,000/- for the fellow as personal maintenance/allowance for a minimum period of 6 weeks and Rs. 4,000/- as contingencies for the purchase of laboratory items, including stationery, preparation of reports, photographs, and other expenses related to the research work.
3. The Research/Training may be conducted in any of the leading research institutions/ laboratories/universities, with approval from SBC(I).
4. The candidate should be below the age of 32 years at the time of application.
5. The SBC(I) Membership is compulsory for eligibility for the fellowship award.
6. The fellowship amount will be released by the SBC(I) to the research supervisor by the 2nd or 3rd week of the training program.
7. The application should be forwarded through the investigator-in-charge of the laboratory in which the candidate proposes to undergo training.

BRANCH ACTIVITIES 2022

BIHAR CHAPTER

Convener: Dr.Vahab Ali

The local chapter of SBCI in Bihar state has been formulated in mid June 2021 and since that all the active members of the state are being coordinated for the smooth functioning/branch activities. Periodically, the convenor has contacted and oriented other active life members of the society in Bihar to add efforts, even on virtual mode to empower the state branch. One physical meeting among some life members of SBCI was held in Indira Gandhi Institute of Medical Sciences (IGIMS), Patna in 21st Oct 2022. At ICMR-RMRIMS, induction training of many young students (B.Sc./M.Sc.) for research in Biological/Health sciences coming from various colleges/universities like Kendriya Vidyalaya, Patna Women's College/Patna University (16th October 2022), Magadh University (November 2022), Pataliputra University etc. They have been motivated towards Biological sciences for doing quality research in their career ahead. To popularise research on Biological Sciences, the convenor has imparted training on "Importance of western blot analysis in protein expression, purification, cellular localisation, protein-protein interaction, and diagnosis of diseases" at Central University of South Bihar, Gaya (19th Sept 2022) and delivered an invited talk on the National Science Day (28th February 2023) at Patna University, Patna. In the last year, membership drive was initiated and interested research scholars/researchers were encouraged to attend the 92nd SCBI annual meeting in Kolkata (8th to 11th Dec 2022). So far, SBCI Bihar branch has 34 life members including 3 new life members (application/DD processed) from RMRIMS, Patna. However, the convenor and his team are trying best to increase the active life members of this prestigious society from Bihar region. In coming months, more activities will be carried out in Bihar under the aegis of SBCI.

DAVANGERE CHAPTER

Convener: Dr.Vadlapudi Kumar

Date	Name & Address	Title of the talk
10-06-2022	Dr. Settara Chandrasekharappa Associate Investigator National Human Genome Research Institute (NHGRI) National Institute of Health (NIH) Bethesda, MD 20841	Genetics and Genomics related to an inherited disorder, Fanconi anaemia
27-01-2023	Prof. Rajeshwara N Achur D.O.S. in Biochemistry Kuvempu University Shankaraghatta – 577451, Karnataka	New Perspectives of Drug Development for Pregnancy Malaria
27-01-2023	Dr. Santosh Kumar H.S. D.O.S. in Biotechnology and Bioinformatics Kuvempu University Shankaraghatta – 577451, Karnataka	Bioinformatics – How may I help you?

KOLKATA CHAPTER

Two Day Symposium on “When Science Meets Life’

A two-day symposium was held during April 9-10, 2022 in the newly established Sister Nivedita University in New Town, Kolkata. As many as twenty four Universities and Colleges participated in the meet which primarily provided a platform to young research scholars and Ph.D. students to present their work orally as well through posters. Among around 300 participants, more than 54 scholars presented their work through oral presentations in sessions covering Cancer Biology, Infection, Immune Response, Stress & DNA Damage Response, Transcription & Translation, Computational Biology, Neurobiology and Plant Biology. The meeting was inaugurated by Prof. Dhrubajyoti Chattopadhyay, Vice Chancellor, Sister Nivedita University. Prof. Arun Bandopadhyay, Director, CSIR-IICB and Dr. Hemanta K. Majumder, J.C. Bose Fellow, CSIR-IICB delivered the Keynote address marking the beginning of the symposium. Best Speaker and Best Poster awards were also conferred to the participants.



NORTH EAST CHAPTER

Convener: Dr. B. G Unni

Speaker	Place	Title
*Prof. (Dr.) Samir Kumar Pal	Kolkata	Optical Spectrometry in Nanohybrids: A ray of hope for emerging cross-disciplinary research in health
*Dr. Rakesh Maurya	Lucknow	Application of traditional knowledge in search of potential leads for drug discovery
*Dr. Puroshotham Hanumanth	Andhra Pradesh	IP protection is key for academic excellence
		IP Key for achieving Atmanirbhar Bharat #
Dr. BG Unni	Kerala	Community health awareness
*Dr. U.S.S.Murthy	Assam	Interpret, integrate and mitigation of tribal health in North east tribal population
*Dr. Binoy Kr.Saikia	Assam	Indigenously developed carbon quantum dots in India: A technological outcome under Atmanirbhar Bharat
Dr. Shashi Bala Singh #	Hyderabad	Scientific insights in Yoga
Prof. Dr. Asha Banu Soletti #	Mumbai	Ensuring mental health and wellbeing for all a global priority
Prof. Dr.VK.Khanna #	Lucknow	Quercetin-A flavonoid with preclinical promises as a neuroprotectant

*Chancellor's lecture series, Assam Downtown University

#Chairman's lecture series, GEMS Arts & Science College (University of Calicut)

PANTNAGAR CHAPTER

Convener: Dr. Ashutosh Dubey

- I. For the year 2022 the membership at Pantnagar chapter of SBC(I) was as followed:
 - a. 2 new life members
 - b. 11 student members
2. Scientific lectures and interactive sessions were organized with eminent scientists and entrepreneurs.
 - i. **Dr. H. S. Mishra**, Professor and Head, Division of Molecular Biology, BARC, Mumbai delivered a lecture on **‘Protein functions: Alone and in Groups?’ (27-4-2022)**.
 - ii. **Dr. Dharmendra Parikh**, Director, Debrisove Pvt. Ltd., Surat, Gujrat participated in an interactive session with students on **‘Establishment of resource recovery station for local energy material, employment, food and fodder’ (21-9-2022)**.
3. **RAMACHANDRAN DAY** was celebrated on **8th October 2022**, with deliberations on life and works of Prof. G. Ramachandran with present significance and advancements in protein structure were also discussed by Biochemistry students.



Students presentation on the occasion of RAMACHANDRAN DAY on 8th October 2022

TIRUCHIRAPPALLI CHAPTER

Convener: Dr. V Ravikumar

The session began with the welcome address by Dr V Ravikumar, Associate Professor and Head, Dept. of Biochemistry, Bharathidasan University. He welcomed the Invited Speaker Prof Ram Rajasekharan, Head, Dept of Microbiology; Dean, School of Life Sciences, Central University of Tamil Nadu, Thiruvavur to the meeting and introduced the Speaker's achievements and contributions in the field of Life Sciences. Further, he recalled the memories of previous symposium held at the Department in collaboration with the SBC(I) attended by several renowned Professors of Indian Institute of Science, Bengaluru. Prof Ram Rajasekharan talked about the role SBC(I) has played in facilitating quality scientific discussions among the scientists and research students across the country. He encouraged the research students and scientists present at the meeting to actively engage in the activities of SBC(I)- Tiruchirappalli Chapter. In addition, Prof Ram Rajasekharan delivered his talk titled 'Sucrase inhibitor for controlling the calorie intake'; followed by discussion session among the participants.

At the end of the meeting, Dr A Antony Joseph Velanganni, Assistant Professor, Department of Biochemistry, delivered vote of thanks. He invited all the members present to be part of the SBC(I) -Tiruchirappalli chapter.



Outreach Program: Malda Workshop - 2022

Topic: “Stress & Human life: Implications in Health & Diseases”

Venue: Sanaullah Mancha, Malda College Auditorium, Malda, West Bengal.

Date: 16.07.22 & 17.07.22

A REPORT

A Workshop on “Stress & Human life : Implications in Health & Diseases” was held at Sanaullah Mancha, Malda College Auditorium, Malda, West Bengal on 16th & 17th July, 2022. About 350 students from more than 50 schools & colleges of Malda, Uttar & Dakshin Dinajpure, Murshidabad Districts as well as good number of Teachers, Professors & Doctors participated in that workshop. Renowned Scientist Prof. Tapas K Kundu of JNCASR, Bangalore acted as Mentor, Dr. R. Selvi, IISER, Berhampur & Prof. Chandrima Das, SINP, Kolkata acted as Co-mentor of that workshop. Five scholars of JNCASR, IISER & SINP were present as Course Guide. The Workshop was organised by Paschim Banga Bigyan Mancha, Malda in collaboration with IQAC, Malda College, Malda. It was supported by Society of Biological Chemists (India), SBC(I); Prof. Ranga Uday Kumar, JNCASR, Bangalore; Dr. Parijat Senapati, Saha Institute of Nuclear Physics, Kolkata; Dr. Rahul Modak, KIIT, Bhubaneswar; Rotary Club of Mango City Malda; Dr. Amrutha Swaminathan, Jaharlal Nehru Centre for Advanced Scientific Research, Bengaluru; Chemical Biology Society India, CBS(I); Theomex International, Dr. V. Ravichandiran, Director, NIPER, Hajipur; Indian Institute of Science Education & Research, Berhampur.

After warm welcome of all the dignitaries we started our workshop by watering the Mother Nature. In his welcome address Sri Sunil Das, Secretary, PBVM, Malda told about the different aspects of organizing the 11th Malda Workshop at Malda. After two years we organized this workshop with a topic on “Stress”. He also expressed his thanks to SINP, Kolkata & IISER, Berhampur for participating in this workshop & gratitude to IQAC, Malda College to extend their hands as collaborator of this Workshop. In his welcome speech inaugurator of this workshop Dr. Partha Pratim Mukhopadhyay, Principal, Malda medical College started with the thanks to PBVM & told about the causes of different diseases due to stress now a days. Then Mr. Apurba Chakraborty, Register Gour Banga University gave his thanks to PBVM for their yearlong activities. Dr. Manas Kr. Baidya, Principal Malda College in his speech gave thanks to the members of PBVM for their continuous efforts towards this workshop. He told that it was a joint collaboration of IQAC, Malda College & PBVM, Malda & hoped that it would continue for years. He also gave his thanks for choosing stress as a topic because after Covid all are in stress. He also hoped that this workshop will increase the scientific awareness & willingness to do research work among students. Chairman IQAC, Malda College, Dr. Narayan Ch. Swao also told to extend their hands for the workshop & develop scientific awareness among the students. Other dignitaries also expressed their thanks to PBVM.

After brief introduction about Prof. Tapas k Kundu by Dr. Abhijit Acharyya, Convenor of the workshop, Prof. Kundu delivered his introductory speech on “Stress & Human Life”. At first he told about the Covid situation they faced & then why ‘Stress’ was selected as a topic of this workshop. He also told about good & bad stress, reasons of stress, how enriched environments takes away stress. He said when you are stressed you not only injure yourself but also delay your repair mechanism of your body. Stress out can be done by enriching the environment around you. He also said that ageing & stress are highly connected. May be sun bath & creation give relief from stress. Creation, good work, happy thinking can reverse the stress molecule. He also indicated that Leprosy can be developed at late stage of life due to stress in well maintained family. After that he introduced Co-mentor Prof. Chandrima das & Dr. R. Selvi. He also told that they are his students & now they came here with their students. So three generations were in the workshop. He also introduced new student of his Lab. Supriya Bhaghat with the audience, who is a resident of Malda. Then Prof. Chandrima & Dr. Selvi introduced their students. With the thanks giving by Mr. K. P. Singh, President of PBVM, this inaugural session was completed.

This year Scientific Session was divided into three sessions. Session - I “Stress: Age, Cancer & Brain”, Session – II “Stress & Infection”, Session – III “Stress & Kidney Function.

Speakers of the first session were Prof. Kundu & Akash K Sing. Prof. Kundu talked on “Stress, Ageing & Cancer”. He started with – “stress is an automatic physiological response” - & the causes of stress, the symptoms of stage i.e. anxiety, skin irritation, anger, stomach problem etc. He then talked about good & bad stress, how stress & high Cortisol impair our health, what stress does to the body, short term & long term effect, chronic stress & diseases – Asthma, Cancer, Heart Disease, Depression etc. Then he said how we can overcome the stress i.e. stress management. We can go by meditation, exercise, connect socially, eat well etc. Then he said about Cancer & ageing – stress is highly connected to ageing phenomenon; stress, ageing & cancer they are almost in a linear line. After that he said about signs that indicate we are ageing too soon. As we undergo stress, we induce the ageing process; we produce lot of free radicals that causes DNA damage & finally create the Cancer. As we go older

Cancer probability increases in our body. He concluded as we are able to decrease our stress by meditation, yoga, exercise & connecting with nature etc. we can late our ageing & chance of Cancer.

After Prof. Kundu, Akash K Sing from JNCASR gave his talk on “Stress & Brain Function”. He started with structure & function of Brain; then he stated how our brain works, the memory process, types of encoding, memory storage & memory recall. Then he said factors that affect the brain function, stress & brain i.e. acute stress & chronic stress, effect of stress on brain functions. Then he ended with the six ways to a better memory.

After that question –answer session started. More than 70 questions of the students were answered by Prof. Kundu & Akash.

Post Lunch session i.e. Session –II was started by Prof. Chandrima Das, SINP. Kolkata with her topic “Infection & its impact on Human Life”. She started with – are you stressed? How stress affects different parts of our body & may cause diseases. She said about serious kinds of stress stimuli, selective gene expression pattern, environmental epigenomics , DNA Methylation of Agouti gene. She also talked about epigenetics related switch on / off programme of genome, the diverse roles of epigenetic regulators in stress adaption. She told about stress, infection & diseases, interaction & type of symbiosis with different examples. HBV infection, viral infection & sweet chromatin. She lastly said about SARS COV2, its protein spike & how Covid virus affects our body. She ended with summarizing her talk.

After Prof. Chandrima Das, Atanu Mandal her student presented his talk on “Infection: a metabolic perspective & Immunity”. He talked on metabolism & infection, how metabolism is connected to epigenetics, the metabolic chain, how infection alters our metabolic status, metabolism in immune system, altered metabolism upon infection, self-defense machinery, post infection complication & co-morbidities.

After Atanu, talk was given by Payel Mandal on “Infection: a concept of stress & evolution”. She started with how stress leads to different diseases, the molecular events of stress, metabolic reprogramming & immunologic responses to different stress. Then she told about infection-stress compromise & how cells try to present stress, control & presentation infectious diseases. She also told about target therapy & its uniqueness, about epithery, evolution & microbes. After that she told about Antibiotic resistance & its danger, molecular events behind it, the trajectory of antiviral resistance, alternative non antibiotic strategies, use of probiotics, use of nano particles, lastly how the immune system of human body evolves. Session was followed by question-answer part. More than 50 interesting questions were answered by Dr. Chandrima & her associates along with Prof. Kundu.

Second day’s workshop started with Poster competition. Prof. Kundu, Dr. Chandrima & Dr. Selvi with their associates judged the posters. They selected 10 posters for Prize of the competition.

Scientific session was started with Dr. Selvi with her “Infection to Renal Biology”. She started with what Kidney does – then the response of the body to internal & external stress. The Kidney & homeostasis, example of homeostasis & how homeostasis is maintained. Then she stated about excretory system, Nephron, urine formation in Nephron, evolution of the Kidney system & ended with Physiology of the Kidney system.

Next talk was given by Sourav Dey on “Stress & Kidney diseases: Implication of signaling Pathway”. He started with – definition of stress, feelings of stress, stress impact on health, biology of stress. He told about – stress & Kidney function, various kinds of Kidney disorders, CKD & its cause, signaling pathways of CKD & their regulations.

After Sourav, talk was given by Dr. Swati Shree Padhi on “Mechanistic alterations associated with Kidney diseases & diagnosis”. She started with epidemiology of chronic Kidney disease, its diagnosis which is commonly based on estimation of the Glomerular Filtration Rate (eGFR). Then she said about Plasma biomarkers of renal function, Urinary biomarkers of Kidney diseases, immunohistochemistry in diagnosis. After that she talked about Telomeric loss due to age & ended with Stress induced senescence.

Last talk of the day was given by Dr. Selvi on “Therapeutic Strategies including Organoids”. She started with two questions i) can we treat Kidney diseases ii) can we cure Kidney Diseases. She then stated about the therapeutic strategies – i.e. medications, Organoid cultures & Lifestyle changes. She also said that most Kidney diseases cannot be cured; only treated & need for new therapeutic intervention strategies. Then she said about Organoid Culture – which made in the Laboratory from embryonic Stem cells. These Organoids can be used in – Developmental, Disease, Drug screening models & in regenerative medicine. Lastly she said about Non-modifiable & Modifiable (Life Style changes) factors of Kidney & other Diseases.

Session was followed by Question – answer interaction part. More than 50 questions were answered by Prof. Kundu, Dr. Selvi, Prof. Chandrima & their associates.

Valedictory session was started with the experience sharing by the Participants. They expressed their gratitude to Prof. Kundu, his associates & gave their thanks to PBVM, Malda for organizing this workshop. Rtn. Dr. Himachal Das, President, RC Mango City Malda, Rtn Shayan Maitra & all other dignitaries were present on the stage. Sri Monoranjan Das, Working President, PBVM, Malda gave his thanks to Prof. Kundu, Prof. Chandrima Das, Dr. Selvi & their associates, IQAC, Malda College, Co-partners of

the Workshop & all others with whom workshop was successful. Dignitaries handed over the Mementoes to the Co-mentors & Scholars. Rtn Dr. Himachal Das honoured Prof. Kundu with the Memento. Lastly Prof. Kundu handed over the Mementoes to 10 winner Schools for Poster Competition. Thus Malda Workshop – 2022, which is an Out-reach Programme of SBC(I) ended with a great expectation for the next year Workshop. All went for Lunch with a happy mood.

Malda Workshop on “Stress & Human Life : Implications in Health & Diseases” at Malda WB, 16th & 17th July, 2022



Registration



Dignitaries on Stage



Inauguration by Watering Mother Nature



Welcome Address by Mr. Sunil Das
Secretary, PBVM, Malda



Inaugural Speech by Principal,
Malda Medical College



Inaugural Speech by Principal,
Malda College



Inaugural Speech by
Prof. Tapas K Kundu



Mood of the Workshop



1st talk by Prof.
Tapas K Kundu



2nd talk by Akash K Sing
JNCASR



3rd talk by Prof. Chandrima Das
SINP, Kolkata



4th talk by Atanu Mandal
SINP, Kolkata



5th talk by Payal Mandal
SINP, Kolkata



Poster Session



6th talk by Dr. R. Selvi,
IISER, Berhampur



7th talk by Sourav Dey,
IISER, Berhampur



8th talk by Dr. Swati Shree Padhi,
IISER, Berhampur



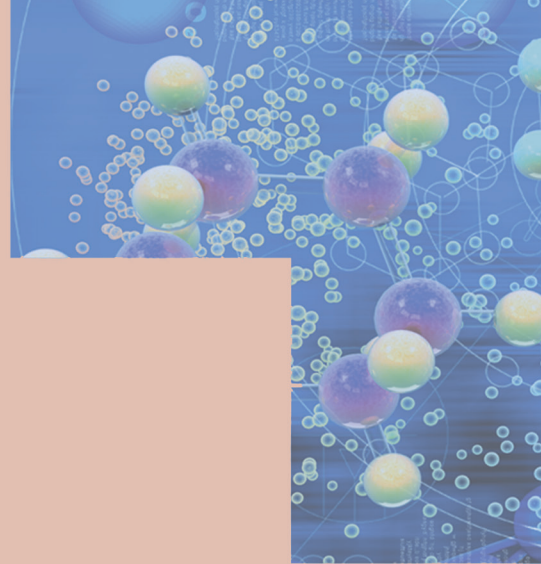
Question - Answer Session



Sharing of Experience by the
Participant



Happy Ending of the
Malda Workshop - 2022



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