



PSI News Letter VOL. 5 (No.1) February 2017

# Proteomics Society, India (PSI)



As we start the first newsletter of 2017, we reminisce our last year's achievements, particularly the PSI meeting held during December winters in Delhi. Symbolized here with foggy landscape. This newsletter thus is a compendium of multifarious proteomics activities transpired in 2016's winter session.

Editors :-

Dr. Sanjeeva Srivastava

Dr. Utpal Tatu



# Proteomics Society, India (PSI)

PSI News Letter Vol. 05 (No. 1) February 2017

## IN THIS ISSUE

EDITOR'S MESSAGE .....	2
PRESIDENT'S MESSAGE.....	3
PSI EXECUTIVE COMMITTEE.....	4
AN UPDATE ON PSI-AOPO MEETING.....	5-7
AN UPDATE ON EDUCATION DAY.....	8
HUPO 2016 CONGRESS UPDATES.....	9-10
WORKSHOP ON PROTEOMICS APPLICATIONS IN BIOTECHNOLOGY.....	11
RESEARCH HIGHLIGHT: GLYCATION INHIBITORS AND MITOCHONDRIAL RESPIRATION.....	12
JPP SURGES AHEAD.....	13
PROTEOMICS DOCUMENTARY .....	14
UPCOMING EVENTS.....	15
UPCOMING ONLINE COURSES.....	16
SPECIAL ISSUES AND BOOKS.....	17

## EDITORS' MESSAGE

Dear Members,

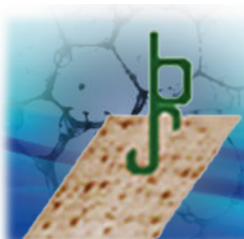
As we bid adieu to the year 2016 and reflect upon its achievements, it has been a gratifying journey that witnessed an exponential rise of proteomics research in India. This first issue of the Newsletter for the year 2017 highlights the milestone events of 2016 that brought out the latest research in the proteomics field, eventually making India as a powerful hub in the global proteomics arena. Another pinnacle was release of the critically acclaimed documentary on Proteomics (Proteomics – Translating the Code of Life), which was screened at PSI and HUPO. Additionally, it provides an update on JPP and other editorial activities, various upcoming events and courses in proteomics.

We would like to thank past president Dr. Surekha Zingde for her wonderful contributions during her presidency, which really made a great impact on PSI! We would also like to take this opportunity to welcome our new president, Dr. Utpal Tatu. His president message summarizes the new goals and priorities for PSI. Personally, I (Sanjeeva Srivastava) am looking forward to my term on the EC of PSI and HUPO, and continue working on proteomics educational and outreach efforts.

We hope that 2017 will be an even more interactive and productive year for the proteomics community! You are encouraged to contact us for any updates, research highlights or information for any upcoming events by sending an email to [sanjeeva@iitb.ac.in](mailto:sanjeeva@iitb.ac.in) or [tatu@biochem.iisc.ernet.in](mailto:tatu@biochem.iisc.ernet.in). We hope that the readers will appreciate this newsletter and it would pique their scientific curiosity for recent developments in proteomics.

Best wishes,

Editors



# Proteomics Society, India (PSI)

PSI News Letter Vol. 05 (No. 1) February 2017



## *Greetings from the President PSI*

Dear Members,

I welcome you to read the first issue of the PSI NL (Proteomics Society of India News Letter) for the year 2017. This is also the first NL with the new committee of PSI that officially took charge January 2017. Interestingly this transition also coincides with the new President and committee taking charge of HUPO (Human Proteome Organization). You will see that several important events and news are covered in this issue including participation of PSI EC members at the HUPO meeting in 2016, the 8th Annual meeting of the PSI together with the 3rd meeting of the AOAPO (Asia Oceania Agricultural Proteomics Organization) at NIPGR, New Delhi in December 2016. In addition an event held under the aegis of PSI at a college in Bangalore is also covered. Finally a summary of exciting progress made by the official journal of PSI, namely the Journal of Proteins and Proteomics is summarized in this issue as well.

On behalf of the incoming committee it is my pleasure to thank the outgoing committee for their hard work in bringing PSI to a platform where lots of exciting possibilities exist. I also want to thank the previous editorial committee of PSI NL for working on schedule to bring out the PSI NL in time. You will see that the wonderful work done by the former editorial committee is now taken forward by Prof. SanjeevSrivastava of IIT Bombay and me. I welcome any suggestion on the PSI NL or any other matter related to PSI.

I want to remind the community that March 18th is a very important day for the Proteomics community and especially for PSI. This was the day when PSI was formally registered after several months of planning and conceptualization by the team. We therefore celebrate this day, every year, as a "Proteomics day" and organize several educational events all through the country. This year too there are workshops, seminars and discussions planned at AMRF, Madurai, NCL, Pune etc. I call upon the student community to make the best use of these opportunities and make this a great success.

Finally I would like to request young investigators and students to come forward to contribute exciting articles sharing new information in the area of Genomics, Proteomics or Metabolomics through the NL. You will be happy to see that we are going to include a new section called "Clinician's perspective" in the upcoming NLs to bring to you the view of a practicing clinician about Proteomics and its impact on medical practice.

I hope you will enjoy reading this NL.

With warm regards from all of us at PSI EC,

Prof. UtpalTatu  
Department of Biochemistry  
Indian Institute of Science  
Bangalore 560 012 India





## PSI EXECUTIVE COMMITTEE

### President

Dr. Utpal S Tatu

### Vice President

Dr. Subhra Chakraborty  
Dr. Arun Bandyopadhyay

### Gen. Secretary

Dr. Mahesh J Kulkarni

### Treasurer

Dr. M.V Jagannadham

### Jt. Secretary

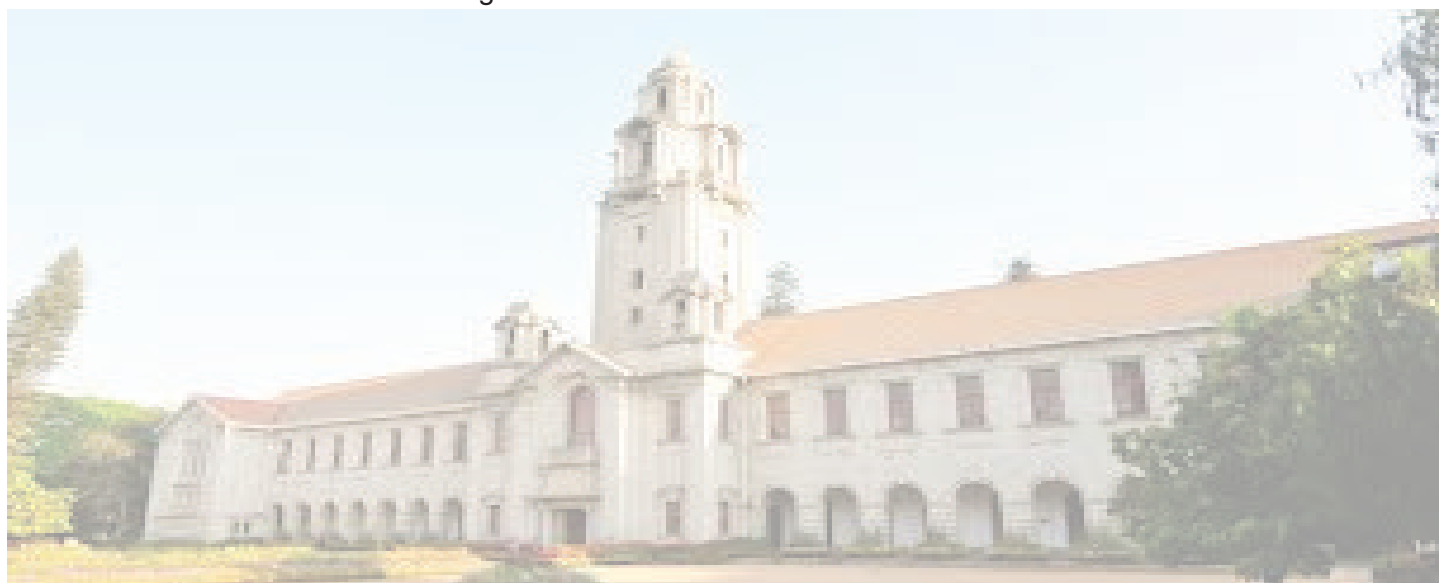
Dr. Sanjeeva Srivastava

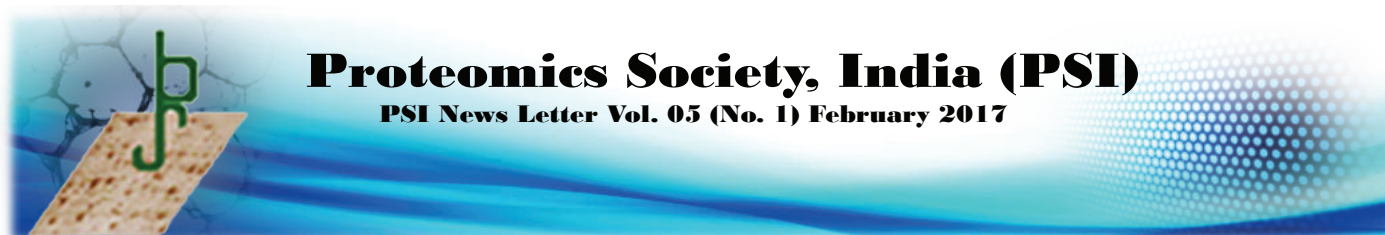
### Past President of PSI

Dr. Ravi Sirdeshmukh  
Dr. Surekha Zingde

### Member

Dr. Rakesh K Mishra  
Dr. Abhijit Chakrabarti  
Dr. Shantanu Sengupta  
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Dr. Kalpana Bhargava  
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Dr. Ashok Kumar Mohanty  
Dr. Sharmila Chattopadhyay  
Dr. Debasis Dash





# Proteomics Society, India (PSI)

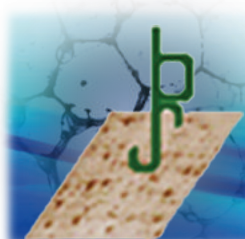
PSI News Letter Vol. 05 (No. 1) February 2017

## UPDATE ON COMBINED 8TH ANNUAL MEETING OF PROTEOMICS SOCIETY, INDIA AND 3RD MEETING OF ASIA OCEANIA AGRICULTURAL PROTEOMICS ORGANIZATION

Ever since the term “Proteomics” was first coined in late 1990s, few leading national and international proteomic organizations have been formed to represent and promote proteomics research through collaboration by fostering the development of newer technologies, training, and discussion on the progress in the respective fields during the annual meetings/congresses. Indeed, Proteomics Society of India (PSI) and Asia Oceania Agricultural Proteomics Organization (AOAPO) are such great initiative to bring together the proteomic community and encourage communication, cooperation, collaboration, discussion on the international trends in proteomics research and education among the fraternity. In 2016 in the month of December from 14th to 17th, the 8th annual meeting of PSI and 3rd AOAPO meeting was jointly held in New Delhi, India along International Conference on “Functional and Interaction Proteomics: Application in Food and Health”. The conference was hosted by National Institute of Plant Genome Research (NIPGR) in the Hotel Grand adjacent to the Institute campus. Around 350 participants from various scientific disciplines, including Plant, Agriculture, Animal and Human field attended the conference. It was inaugurated by the Guest of Honour, Pro-Vice Chancellor, Jawaharlal Nehru University, New Delhi, India and Chief Guest, Director-General, Indian Council of Agricultural Research, New Delhi, India with their opening remarks followed by Presidential Addresses by President, PSI and President, AOAPO. Welcome address was delivered by Convener, PSI-AOAPO Conference 2016 and Introductory Remarks was given by Director, NIPGR. All of whom emphasized the opportunities in agricultural, plant, animal and human proteomics, progress in the field in India, and also highlighted the contribution of PSI, AOAPO and HUPO for strengthening proteomics research and greater need for future world-wide co-operation in the field to understand and find solutions towards Food, Health and Nutrition security. Two opening plenary talks were delivered by the President Elect, HUPO, Mike Snyder and Kanury Rao during the inaugural session in the area of multiomics and health research. The inaugural session concluded with a photography session.



The conference was attended by leading scientists in the field from across the globe. Their presentations showed how the fast advancing proteomics research and technologies are applied to solve important issues related to food, nutrition and health. Every morning the conference started with a plenary lecture.



# Proteomics Society, India (PSI)

PSI News Letter Vol. 05 (No. 1) February 2017

Scientists invited from across the globe with diverse research interests in proteomics deliberated during the conference. The lectures delivered during the conference covered various areas, including Plant, Animal, Human and Food proteomics and could be broadly categorized under the thematic areas like Integrative Omics & System Biology, Model/Unique Organism Proteomics, Interaction proteomics & Cellular Network, Immunity, Disease proteomics in Animal & Plant Healthcare, Global & Targeted proteomics in Precision Medicine, Proteogenomics & Big data Analysis, Structural Proteomics, Organ & Organeller Proteomics, Metabolomics & Metabolic Disorders, Food, Nutrition and Stress Omics, PTM Proteomics & Regulation Biology, Human Proteome Project Initiatives, etc. Every morning the conference started with a plenary lecture and everyday evening it ended with another plenary lecture. There were twelve sessions that included seven plenary talks, more than seventy invited talks by leading national and international scientists in their respective field of research and Industry talks on new technology developments in mass spectrometry, metabolomics, omics data analyses and protein interaction studies. Of which 43 speakers were from Asia and Oceania region, 23 from USA, 7 UK and EU. Besides the plenary lectures and invited talks, there were informal poster sessions and exhibitions by sponsors, which played a central role in vibrant discussions and exchange of scientific ideas amongst the students, researchers, and fellow colleagues. In addition, two day Education day program provided the basics in proteomics science through lectures from eminent scientists to college/university teachers, students and researchers from December 12-13, 2016 at NIPGR. Five day long Pre-conference workshop on "Targeted Proteomics and Big Data Analysis" at Sciex facility, Gurgaon from December 9-13, 2016 provided both hands-on instrument use and in-depth tutorials for understanding mass spectrometry workflows and data interpretation. Three day long post-conference workshops on "Gel-based and gel-free proteomics" at NIPGR, "Metabolomics" at SCMM, JNU and "Structural and Interaction Proteomics" at RCB, from December 18-20, 2016 further provided hands-on training and in-depth tutorials on 1-DE, 2-DE and LC-MS/MS based quantitative and qualitative analysis, targeted and untargeted metabolomics experiments and X-ray crystallography and mass spectrometry based protein structure and function analysis.







In total 100 students and researchers attended these workshops. PSI and AOAPO council meetings were also held during the conference. Organizers provided ample opportunity for everyone especially for students and young investigators to participate in this congress. There were ten five minute lightening talks by young students and researchers selected from the submitted abstracts. The attraction for the budding proteomics leaders was the “Best Poster” and “Best Early Career” Awards. The conference was a great success and it was brought to a close by vote of thanks to the organizers and participants, and the announcement of the 2017 PSI meeting at Bhubaneswar, AOAPO meeting in Malaysia and HUPO meeting in Ireland. Overall, it was impressing to observe the enthusiasm of young proteomics researchers and the positive attitude of the World proteomics community. This is encouraging as it serves the purpose and goal of PSI and AOAPO. It is a great pleasure to express my sincere thanks to all student volunteers, participants, colleagues, NIPGR, JNU, RCB and PSI and AOAPO council and members who made the event a great success.

**Subhra Chakraborty**

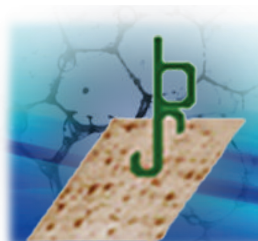
Convener, PSI-AOAPO Conference 2016

Professor & Staff Scientist

National Institute of Plant Genome Research

Jawaharlal Nehru University Campus

New Delhi, India



# **Proteomics Society, India (PSI)**

**PSI News Letter Vol. 05 (No. 1) February 2017**

## **AN UPDATE ON PSI-EDUCATION DAY**

Education day, an integral part of the annual meeting of Proteomics Society of India is organized every year with the intent of enlightening the students about the latest research and developments in the field of Proteomics. Not only the event witnesses a large number of enrolments from the students' community, but even for college teachers it is a befitting opportunity to interact with several distinguished scientists. This year's education day was conducted in New Delhi along with 8th Annual Meeting of the Proteomics Society, India (PSI).

The event started off with the introductory remarks from Dr. Subhra Chakraborty who was the convener of the International Conference on Functional & Interaction Proteomics and apprised the participants with education day's program, followed by opening address by Dr. Surekha Zingde, the former President of PSI. Further, Dr. Ravi Sirdeshmukh, the co-convener of the Education day, gave the participants perspective about the education day workshop and the motivation behind its conceptualization. The first module of the workshop- Gel-based and gel-free proteomics using mass spectrometry, chaired by Dr. Ravi Sirdeshmukh had very stimulating talks by Drs. K. Dharmalingam, Renu Deswal, Debasis Dash and Dipankar Malakar. This enlightening session dealt with some of the very fundamental and crucial concepts of gel and mass spectrometry based proteomics and was received well by all the participants, especially the young students who are yet to build their expertise in the field of proteomics. Keeping in mind the latest developments in the field of metabolomics, the next module on Metabolomics aimed at showcasing some quantitative metabolomics work by Drs. Harsha Gowda and Sixue Chan. In order to make this workshop more interactive, this module also hosted demo sessions on 2-Dimensional gel electrophoresis (2-DE) and Mass Spectrometry (MS) Data Analysis and Quantitation by Drs. Amol Suryavanshi and Dipankar Malakar, respectively.

The next day of the workshop began with the module on Targeted Proteomics, a relatively new and advanced domain of proteomics. Dr. Robert Moritz presented his group's work in developing the Trans-Proteomic Pipeline and SRM Atlas. Further, this module became more riveting as it progressed to lectures on targeted proteomics applications in clinical studies by Drs. Srikant Rapole, Mahesh Kulkarni and Suman Thakur. The last module on Structural proteomics & interactomics saw exciting talks from Drs. MA Vijayalakshmi, Henning Hermjakob, Tushar K. Maiti, Jason Chen and Sanjeeva Srivastava. After all the modules, an interactive session was conducted by Dr. Ravi Sirdeshmukh, wherein, the participants got an opportunity to address their queries and have a stimulating discussion with several virtuosos in the field. The concluding session was a vote of thanks by the co-convener Dr. Sanjeeva Srivastava who also highlighted upon the various e-learning and outreach activities to help participants remain conversant with the discipline of proteomics.

Therefore, this dedicated education day workshop was a great platform for college students and teachers to develop their dexterity in the proteomics field and to have extended interactions with several venerable proteomics researchers.

**KANIKA MEHTA**

Member of Organizing Team, Education Day;  
JRF, Proteomics Laboratory, IIT Bombay.



## HUPO 2016 | TAIPEI CONGRESS UPDATES

The parallel tracks of deep proteome sequencing and target quantification, mass spectrometry based data-dependent and independent acquisition, complementary top-down and bottom-up analysis, alongside non-MS-based systems approaches portray the evolution of proteomics over the last two decades. The Human Proteome Organization (HUPO) is the scientific body representative of the international proteomics community. HUPO has been instrumental in following its progress and deliberating standards in proteome research. The 15th Annual World Congress of HUPO hosted in Taipei, Taiwan from September 18th to September 22nd, 2016 was focused on “Precision Proteomics for Precision Biology and Medicine” and provided prominent luminaries in the area of proteomics with a platform to present and communicate their research. This event featured 7 Plenary Lectures, 30 Keynote Sessions, 5 Pre-congress Courses including Clinical Day, Education Day, Mentoring Day, Technology Day, HPP Investigator’s Meeting and 11 Luncheon Symposia. The Proteomics Informatics Course, AOHUPO 2016 meeting and Post-congress workshop on HPP workshop day formed the post-conference activities from 22nd to 23rd September 2016.

The plenary sessions included lectures on subjects at the leading edge of proteome research from all parts of the globe. Lectures by scientists like Drs. Ruedi Aebersold, Henrik Clausen, Jennifer Van Eyk, Albert J.R. Heck, Henry Rodriguez, Michael Snyder, Pan-Chyr Yang covered a vast range of subjects providing the audience a broad perspective on the evolving strategies in basic proteome research alongside its applicability in precision medicine. The HUPO 2016 also saw a significant participation from the Indian proteomics community. Indian researchers like Drs. Ravi Sirdeshmukh, Sanjeeva Srivastava and, Subhra Chakraborty participated as invited speakers. Some poster abstracts were also selected for short talks in thematic sessions. Lectures by Dr. Srivastava highlighted the challenges in biomarker discovery in the developing world and the steps that are being taken to cope with these hurdles. He also emphasized upon the current research being done by his group in diagnostic and prognostic biomarker discovery for infectious diseases like malaria and dengue. His students presented short talks on mass spectrometry and protein array based biomarker discovery for gliomas and meningiomas. Additionally, their group also presented posters on the ongoing mass spectrometry based proteomics and targeted validation of biomarker candidates for infectious diseases. Dr. Chakraborty’s research team too presented posters on their plant proteomics work like nuclear phosphoproteomics and proteometabolomics alterations in plants during fungal infection. Dr. Sirdeshmukh provided an update on C-HPP initiatives and progress made by India team.





# Proteomics Society, India (PSI)

PSI News Letter Vol. 05 (No. 1) February 2017

Another remarkable accomplishment for the Indian proteomics society was the appointment of Dr. Sanjeeva Srivastava as the HUPO Council member from the Eastern region for the term January 2017 - December 2019. Thus, the 15th HUPO World Congress was an enriching experience for all the participants and provided a global platform for Indian researchers and students to showcase their work at an international platform, further facilitating interactions with veteran scientists. These interactions are sure to benefit the participants in several ways and allow future collaborative efforts for better research.

## Dr. Sanjeeva Srivastava

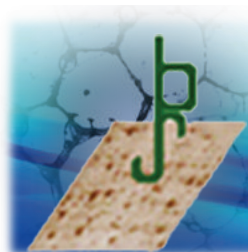
Associate Professor

Department of Biosciences and Bioengineering

Indian Institute of Technology Bombay







# **Proteomics Society, India (PSI)**

**PSI News Letter Vol. 05 (No. 1) February 2017**

## **TECHNICAL WORKSHOP ON “PROTEIN APPLICATIONS IN BIOTECHNOLOGY” Under TEQIP Phase-II & Proteomics Society-India**

*Jointly Organized by*

Department of Biotechnology, Ramaiah Institute of Technology, Bengaluru  
& Aristogene Biosciences Pvt. Ltd., Bengaluru

**16-21 January 2017**

**Convener:** Dr. Bindu S., Prof. & Head, Department of Biotechnology, RIT

**Coordinators:** Dr. Dhamodhar, Dr. Ahalya N., Dr. Sravanti V., Faculty, Department of Biotechnology, RIT

**Venue:** Ramaiah Institute of Technology, Bengaluru.

A technical workshop entitled "Protein Applications in Biotechnology" was conducted from the 16- 21 January 2017. It was held under Proteomics Society-India, and the funding was provided by Technical Education Quality Improvement Program (TEQIP) Phase-II. The workshop included a series of technical lectures by eminent researchers and laboratory sessions by scientists from Aristogene Biosciences Pvt. Ltd.

The workshop was formally inaugurated on 16th January 2017 by **Prof. Utpal. S. Tatu**, Professor, Department of Biochemistry, IISc, and President of Proteomics Society-India. This was followed by a technical lecture by Prof. Tatu, who gave a very insightful talk on “Proteomics: A New Gizmo for Human Health”. His talk focused on basic and advanced techniques of Proteomics and their applications in various fields of research.

**Dr. Sohil. A. Khan**, Professor at Griffith University, Australia, delivered a lecture on “Pharmacotherapeutics and Evidence Based Practice”. This was followed by a visit to Prof. Utpal Tatu’s lab at Indian Institute of Science Campus.

**Dr. Hanudatta. S. Atreya**, Associate Professor, NMR Research centre, IISc., delivered a talk titled "NMR Based Studies in Systems and Structural Biology" where he highlighted how NMR techniques can be used in Metabolomics.

**Mr. Lokesh K.N.** and **Mr. Krishnamurthy T. P.** Assistant Professors, Department of Biotechnology RIT presented their work on "In situ Qualitative and Quantitative Protein Profiling by Analytical Software (DgeIDAS)" and “Software Tools for Analysis of Proteins”.

**Dr. Sachin Kumar. B**, RIT alumnus, a research scholar at Biomaterials and tissue engineering department, IISc., recipient of Humboldt Fellowship, delivered a talk entitled "Protein Interaction with Biomaterials" where he focused on how bioengineering of bone is done with the use of various biomaterials.

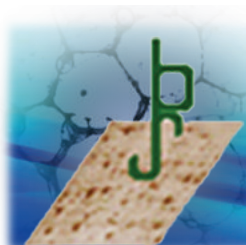
**Dr. Mahavir Singh**, Assistant Professor, Molecular Biophysics Unit, IISc delivered a lecture on “Understanding the Telomere and Telomerase Functions through Structural Biology Approaches”. The talk provided insights on the applications of NMR/ Crystallography to decipher the functions of telomeres.

**Dr. Subhashini**, director of Aristogene Biosciences, provided an insightful talk on “Chromatographic Techniques”. This was followed by practical sessions on Ion Exchange Chromatography, ELISA, SDS Page, and Western Blotting.

**Padma Shri Prof Dipankar Chatterji**, Honorary Professor, Molecular Biophysics Unit, IISc. His talk was entitled "Stress Response and Regulation of Transcription in Bacteria". His talk was very inspiring and motivated the audience towards protein research.

On the last day, the participants visited Aristogene Biosciences facility at Rajajinagar, which was followed by distribution of certificates and valedictory ceremony.



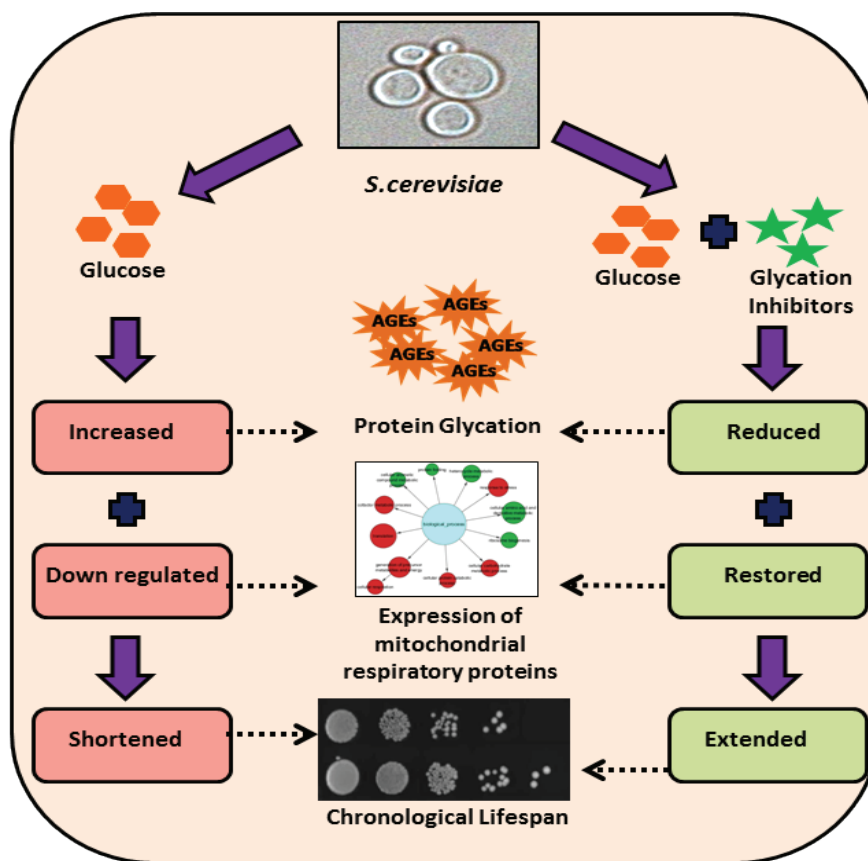


## RESEARCH HIGHLIGHT: GLYCATION INHIBITORS AND MITOCHONDRIAL RESPIRATION

**Glycation inhibitors extend yeast chronological lifespan by reducing advanced glycation end products and by back regulation of proteins involved in mitochondrial respiration**

Published in Journal of Proteomics by Dr. Mahesh Kulkarni's group, NCL Pune

Advanced glycation end-products or AGEs have been shown to be involved in aging. In this study, we have used *Saccharomyces cerevisiae* as a model to study glycation induced aging. High glucose reduced yeast chronological lifespan (CLS) by increasing levels of AGEs and deregulation of proteins involved in mitochondrial respiration. Conversely, calorie restriction or reduced glucose consumption extended yeast lifespan by reducing AGEs and restoring the expression of mitochondrial respiratory proteins. We have used different glycation inhibitors viz., aminoguanidine, hydralazine and metformin which vary in their structures as well as anti-glycation potency and shown using mass spectrometry based proteomics that these drugs extend yeast CLS in a manner similar to that shown by calorie restriction and their ability to extend CLS is dependent on the anti-glycation activity.



### Reference

Kazi RS, Banarjee RM, Deshmukh AB, Patil GV, Jagadeeshaprasad MG, **Kulkarni MJ\***. Glycation inhibitors extend yeast chronological lifespan by reducing advanced glycation end products and by back regulation of proteins involved in mitochondrial respiration. Journal of Proteomics. <http://dx.doi.org/10.1016/j.jprot.2017.01.015>



# Proteomics Society, India (PSI)

PSI News Letter Vol. 05 (No. 1) February 2017

## JPP SURGES AHEAD

**Journal of Proteins and Proteomics (JPP) - A journal of the Proteomics Society, India (PSI) - is the flagship initiative of the society that is taking up promising shape and moving forward steadily in achieving its goals to attain global status.**

**The journal completed 7 years of sojourn in Dec 2016.** The year ended with the publication of a quality and memorable **Special Issue** of JPP on **“Advances in Structural, Functional and Interaction Proteomics in Food and Health”** (Volume 7, Issue 4, 2016). The issue was released during the international conference on “Functional & Interaction Proteomics: Application in Food and Health”, in New Delhi, December 14-17, 2016 to coincide with the 8th Annual Meeting of the Proteomics Society, India and 3rd Meeting of Asia Oceania Agricultural Proteomic Organization (AOAPO). **The entire content of the special issue is available free on the journal website.** A few hard copies of the special issue are also available and can be provided upon request on a first-come-first-serve basis.

**JPP articles are attracting decent citations.** Please visit the relevant google scholar page for complete details, which is also available upon request to the journal editorial team. Our calculations reveal a potential impact factor above 1.0 for the journal. .

The year 2017 also started on a very encouraging note for the journal. **JPP got indexed in 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 (<https://doaj.org/>). Following in the footsteps of DOAJ, **JPP was also selected for indexing in Index Copernicus International (ICI) – another prestigious database.** The journal has been enlisted in the ICI master list and received an ICV 2015 score of 62.49. Applications for indexing are pending in Scopus, EMBase, PubMed, Medline and CAS.

**The journal is also advancing in the Indian context. NAAS (National Academy of Agricultural Sciences) recently released its list of international journals which were scored as per their own evaluation criteria. JPP received a score of 4.55,** which is an improvement over its earlier score of 3.75.

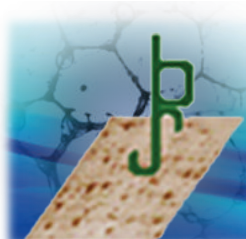
**UGC recently released a list of selected journals to be used by Universities for academic performance index (API) calculation for evaluation of faculties. JPP made it to the list as well.**

All PSI members and members of the protein science community are invited to submit articles for the journal. **All members are requested to subscribe the journal as well to create a wide circulation base for this PSI initiative.** The individual annual subscription rate for PSI members is only Rs. 750, while organizational subscription is Rs. 5000. The subscription form and relevant information are available on the journal website or by contacting [jppindia@gmail.com](mailto:jppindia@gmail.com).

This is now your journal !!! Go for it !!!

Warm greetings for the year ahead!!

**JPP team and PSI**



# Proteomics Society, India (PSI)

PSI News Letter Vol. 05 (No. 1) February 2017

## PROTEOMICS - TRANSLATING THE CODE OF LIFE

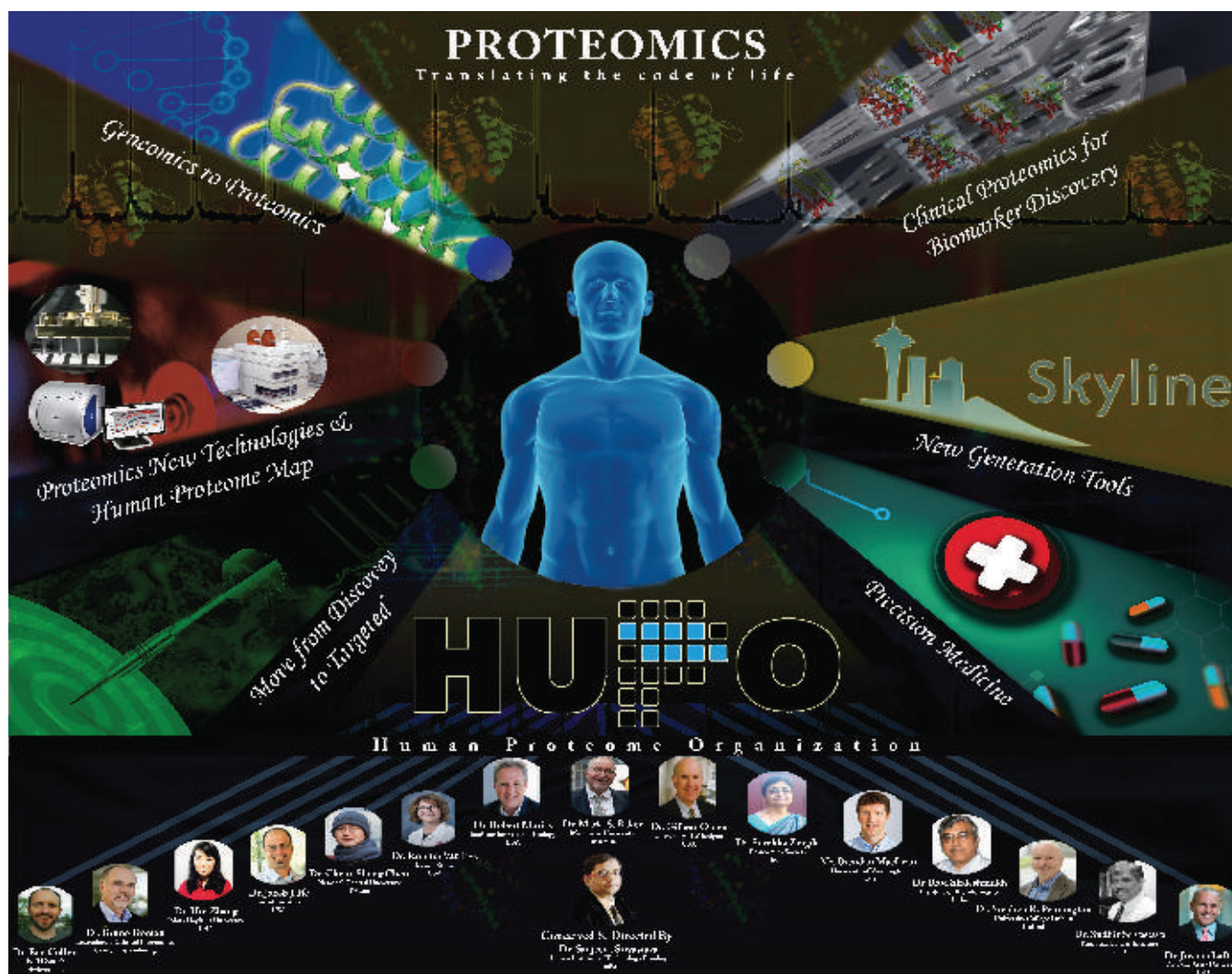
*First documentary on proteomics subject*

Proteins and proteomics are central to connect genomes with phenotypes and biological function. Proteomics provides a veritable foundation to address whole systems and uses a broad unbiased approach to decipher post-genomic biology. This documentary portrays the journey of "Proteomics", discusses its advancements, achievements and key issues that lay ahead. The first section of the documentary introduces the post-genomic era and establishes the necessity of proteomics studies. The second section focuses on the development of various proteomics technological platforms and how the persistent efforts of proteomics scientists have resulted in the first draft of the human proteome.

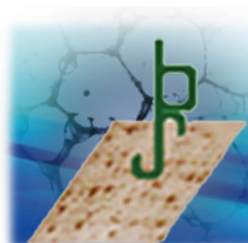
This documentary was screened at HUPO and PSI meetings and currently hosted on HUPO homepage (<https://www.hupo.org/>) and PSI website ([http://www.psindia.org/news\\_letter.html](http://www.psindia.org/news_letter.html)).

Dr. Sanjeeva Srivastava and IIT Bombay Team.

**WATCH THE DOCUMENTARY HERE:** <https://www.youtube.com/watch?v=m4U9bcnGtg4&feature=youtu.be>







## **Proteomics Society, India (PSI)**

**PSI News Letter Vol. 05 (No. 1) February 2017**

### **UPCOMING EVENTS:**

**National Symposium and Workshop on Quantitative Proteomics, 6th-10th March. 2017, Institute of Life Sciences (ILS), Bhubaneswar**

Web Like

<https://www.ils.res.in/news/nswqp-2017/>



जीव विज्ञान प्रतिष्ठान

**INSTITUTE OF LIFE SCIENCES**

An Autonomous Institute of Department of Biotechnology, Govt. of India



## **National Symposium and Workshop on Quantitative Proteomics**

Institute of Life Sciences, Bhubaneswar

06-10<sup>th</sup> March 2017

One day Symposium: 06<sup>th</sup> March 2017 &

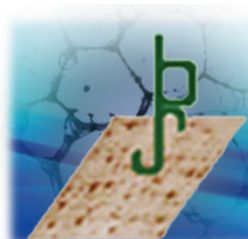
Four days Workshop: 07-10<sup>th</sup> March 2017

**HUPO 16th Annual World Congress, Dublin Ireland, 17-21 September 2017**

<http://hupo2017.ie/hupo2017/>



16th Human Proteome Organisation World Congress



# Proteomics Society, India (PSI)

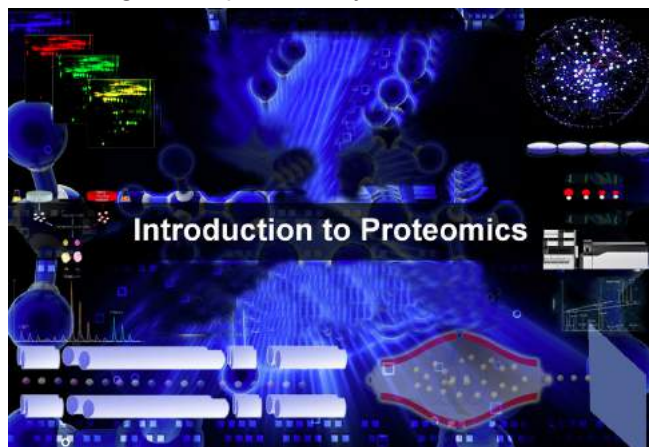
PSI News Letter Vol. 05 (No. 1) February 2017

## ONLINE PROTEOMICS COURSES

Resonating its motto of “Gnayanam Paramam Dheyam” (Knowledge is the Supreme Goal), IIT Bombay has always championed outreach educational activities and played an instrumental role in disseminating knowledge to young, aspiring talents. One such initiative was the recent launch of Proteomics MOOC (Massive Open Online Courses) by Dr. Sanjeeva Srivastava which is a web-based platform for distance learning using recorded video lectures, notes and assignments. MOOC courses like Introduction to Proteomics and Interactomics: Protein Arrays & Label-free Biosensors are a huge hit among the students' community as they provide the participants an interactive platform with extensive networking opportunities and therefore witness thousands of enrolments.

### Introduction to Proteomics

Proteins are the key effector molecules of any living entity and are largely responsible for the functioning of a cell. This course introduces the students to the basic biology of proteins and aims to look into the protein properties from a global perspective, i.e., not undertaking one protein at a time, but an entire set of proteins in the milieu. The course covers in detail the two major aspects of proteomics i.e., gel-based proteomics and mass spectrometry-based proteomics. The gel-based module, in turn, touches upon the different techniques like SDS-PAGE, 2-DE, 2D-DIGE etc. Mass spectrometry module, on the other hand, focuses on the basics of mass spectrometry, sample preparations, liquid chromatography, hybrid mass spectrometers and quantitative proteomics techniques such as iTRAQ, SILAC and TMT using mass spectrometry.



[https://onlinecourses.nptel.ac.in/noc17\\_bt12/preview](https://onlinecourses.nptel.ac.in/noc17_bt12/preview)

Course Duration:

20 February 2017 – 14 April 2017

Short term- 8 weeks

## NPTEL

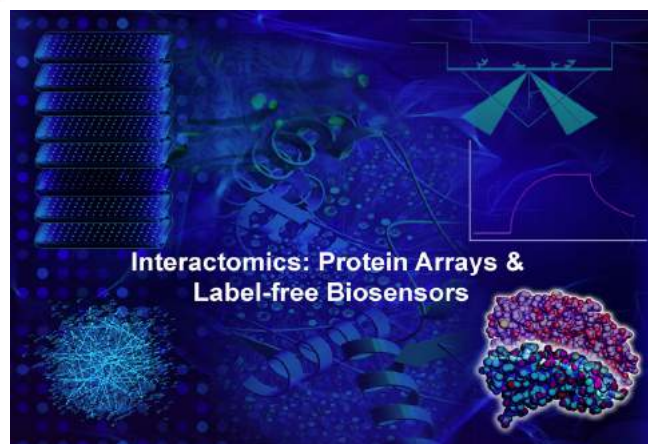
### Explore Courses



NPTEL (National Programme on Technology Enhanced Learning) is a joint initiative of the IITs and IISc. Through this initiative, we offer online courses and certification in various topics.

Online course: Free for all, Certification exam: For a nominal fee.

Learn anytime, anywhere! Only requirement: Interest and enthusiasm to learn :)



[https://onlinecourses.nptel.ac.in/noc17\\_bt11/preview](https://onlinecourses.nptel.ac.in/noc17_bt11/preview)

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### Interactomics: Protein Arrays & Label-free Biosensors

Cell signaling cascades and molecular triggers are dependent upon intricate interactions involving proteins at the cellular level. It is due to this very reason that, in an age where clinical biology is thriving to make an impact in global health-care and biomedical diagnostics, there has been a surge of interest in Interactomics, an area that essentially involves the study of interactions between biomolecules, particularly proteins and the consequences of those interactions in a biosystem. This course of interactomics focuses on two powerful platforms; Protein microarrays and Label-free biosensors involving Surface Plasmon Resonance and Biolayer Interferometry. While the former is a high-throughput tool for discovery-based interactomics, the latter is proving itself to be an instrumental resource for validation based studies.

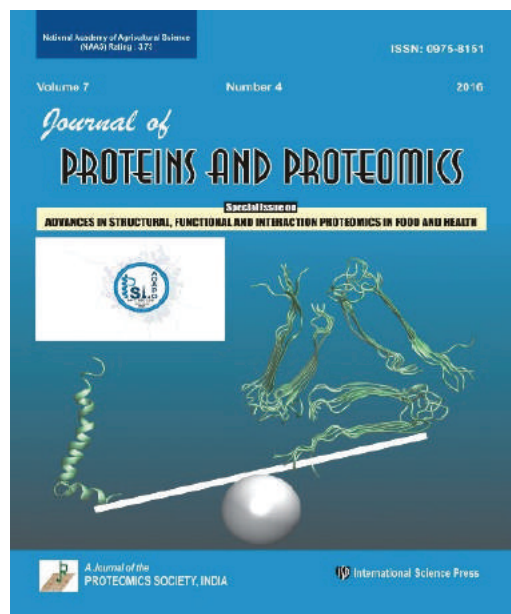




# Proteomics Society, India (PSI)

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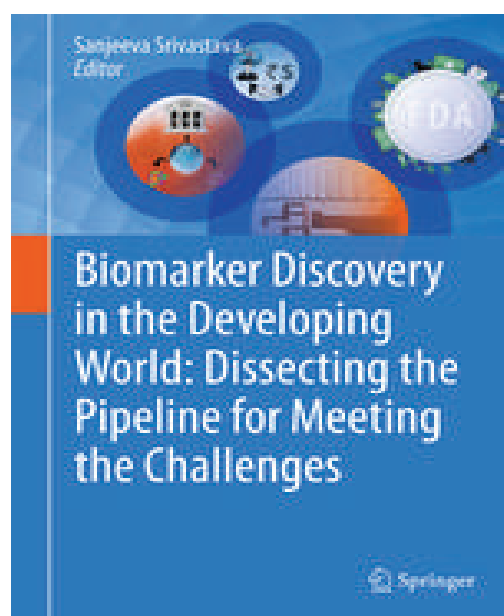
## Special Issues and Book



A special issue on "Functional & Interaction Proteomics: Application in Food and Health"

JPP 7(4) 2016

Guest Editors: Dr. Renu Deswal  
& Sanjeeva Srivastava



A book published on proteomics and its applications in clinical biomarker discovery pipeline.

2016. ISBN 978-81-322-2837-0



A special issue on "Protein Arrays"

PROTEOMICS. 2016, 16, 1191–1192

Guest Editor: Dr. Sanjeeva Srivastava