Dear All,

It brings us great pleasure to announce that the Targeted Proteomics Workshop and International Symposium (TPWIS) – 2015 has ended on a high note. This ambitious effort of organizing a dedicated 5-day workshop on Targeted Proteomics and Trans-Proteomic Pipeline culminated with participants in large numbers, who were greatly benefited from these emerging avenues. In addition to these, a 3-day mass spectrometry workshop and a 10-day GIAN initiative from MHRD on Proteomics were also among the main highlights of the event. A one-day overview in Proteomics was facilitated via the Education Day event, which attracted local undergraduate students and college teachers and helped in increasing the awareness about the applicability of Proteomics in biosciences research.

The evenings of 10th to 12th December were filled with intensive themed scientific talks called as the “Evening Innovative Sessions” which featured many renowned speakers from various areas of expertise like Metabolomics, Biosimilars and Translational Research. The two day long International Symposium witnessed many stalwarts who provided their perspective on the upcoming area of targeted proteomics.

These efforts could not have yielded in the valuable outputs and appreciation received from the participants without your active involvement in this endeavor. We therefore take this opportunity to thank all the speakers and invited guests for taking time off their busy schedule and providing their valuable perspectives to the participants. Their involvement has provided the global outreach that we intended to achieve, be it the Indian or the International proteomics community. We wish to extend our appreciation to all delegates for their active participation in this multi-faceted event. We also wish to thank the sponsors for being so forthcoming in terms of not only financial support but also bringing the instruments on-site along with application scientists, which have been instrumental in taking care of the logistics involved in this event and making it a grand success. Holistically, the workshop, symposium and its allied activities, with all certainty, have had a resonating effect on the Proteomics community. The success of this event is majorly attributed to all the distinguished speakers, delegates and participants. We hope that this event has been as memorable to you, as it has been for us and we sincerely thank you for your full support in this endeavor. We hope to continue our association in future within this global proteomics family. The “Reflections” booklet is a memoir of the TPWIS-2015 and we wish that these remembrances and experience would last you a lifetime.

Happy holidays!

Best regards,
Dr. Sanjeeva Srivastava
Convener, TPWIS-2015, IIT Bombay, Mumbai
The MHRD initiated ‘Global Initiative of Academic Networks’ (GIAN) was inaugurated on 10th December 2015 at IITB by Prof. Devang Khakhar, Director of IITB, in the presence of Prof. Ravindra Gudi, Head of CEP, IITB; Prof. Rohit Manchanda, Head of BSBE, IITB and eminent scientists in the field of proteomics, namely, Dr. Mark Baker - President of HUPO, Dr. Joshua LaBaer - President of US-HUPO, Dr. Surekha Zingde - President of PSI, course moderators for GIAN - Dr. Robert Moritz and Dr. Rapole Srikanth and course coordinator for GIAN - Dr. Sanjeeva Srivastava.

GIAN aims to augment the country’s existing academic resources and elevate India’s scientific and technological capacity to global excellence. Module I on ‘Trans-Proteome Pipeline’ was conducted by Dr. Robert Moritz and his team from Institute for Systems Biology. The students were first introduced to Module I of the course; the ‘Trans-Proteome Pipeline’ which comprised of utilities like Comet, PeptideProphet for statistical validation, InterProphet and PTMProphet, XPRESS, ASAPRatio and Libra for TPP, Kojak – Protein Cross-linking, SRM and SWATH targeted proteomics.

The Module II on ‘Quantitative & Targeted proteomics’ which was coordinated by Dr. Sanjeeva Srivastava, Dr. Rapole Srikanth and Dr. Mahesh Kulkarni focused on giving lectures and hands-on knowledge on various mass spectrometric platforms and quantitative proteomics. Both the modules aimed to equip students with advanced knowledge of the various new platforms available in the field of targeted proteomics and acquainted them with the technicalities of the same.
Dr. Sanjeeva Srivastava delivering a welcome message to all the distinguished course instructors and participants.

Dr. Sanjeeva Srivastava felicitating Mr. David Campbell.

Dr. Sanjeeva Srivastava felicitating Prof. Ravindra Gudi, Head CEP.

Dr. Sanjeeva Srivastava felicitating Dr. Michael Hoopmann.

Dr. Sanjeeva Srivastava felicitating Dr. Samuel Bader.

Dr. Sanjeeva Srivastava felicitating Dr. Ulrike Kusebauch.

Course instructors and participants attending the TPP workshop.

Participants in the demo sessions.

Dr. Robert Moritz delivering a welcome message to all the distinguished course instructors and participants.

Dr. Joshua LaBaer, President, US-HUPO addressing the audience.

Dr. Srikanth Rapole at the GIAN inaugural ceremony.

Participants following tutorials being delivered at the course.
Participants in the lectures

Left to right: Demo session by Thermofisher Scientific and Shimadzu Analytical Pvt Ltd.

Demo session for off-gel fractionation

Dr. Srikanth Rapole delivering a lecture on MALDI
Targeted proteomics workshop was aimed at understanding the need for transition from the discovery based shotgun proteomic approaches to validation based targeted proteomics. Mr. Brendan MacLean in his opening remarks gave brief introduction about the targeted proteomics and application of Skyline software for the targeted proteomics data analysis. Mr. Ariel Bensimon gave a lecture on setting up a targeted proteomic experiments and Mr. Brendan introduced the participants about Skyline and its key features. Tutorials sessions helped the participants to develop their own SRM assays for targeted experiments.

On day two, Dr. Ben Collins and Mr. Ariel Bensimon gave lectures on scheduling targeted proteomic experiments and Mr. Brendan MacLean conducted a tutorial on effective data processing and manual data analysis. On Day three, Dr. Bruno Domon and Dr. Jacob Jaffe gave lectures on designing and analysis of PRM (parallel reaction monitoring) experiments and Mr. Brendan MacLean gave lecture on DDA and conducted a tutorial on DDA data analysis using Skyline. On day four, Dr. Tsung-Heng Tsai, gave lecture on statistics in targeted proteomics and Mr. Brendan MacLean conducted a tutorial on DIA/SWATH data analysis using Skyline.

The workshop was concluded with a lecture by Mr. Ariel Bensimon on quantitative post-translational modifications and Mr. Brendan MacLean conducting hands-on session on DIA data analysis with DDA data followed by a Jeopardy Quiz.
Dr. Sanjeeva Srivastava introducing Mr. Brendan MacLean to the TPW participants

Participants following the TPW tutorial

Participants following the lecture

Dr. Jacob Jaffe delivering a lecture on PRM experimental design and data analysis

Dr. Ben Collins delivering a lecture on Scheduling targeted acquisition

Mr. Ariel Bensimon interacting with the participants

Participants following the lecture

Mr. Brendan MacLean, Coordinator, TPW work-

Convener, TPW instructors team and participants at the venue
Trans Proteome Pipeline (TPP) is aimed at homogenizing a data analysis pipeline for optimal analysis of raw spectral data emerging from any tandem MS based experiment. The TPP is a robust open-source standardized data processing pipeline for large-scale reproducible quantitative MS proteomics.

The five day long workshop started with the opening remarks by Dr. Robert Moritz from the Institute for Systems Biology followed by talks from Mr. Luis Mendoza and Mr. David Campbell on Sequence Database Searching and Data Formats & Pep3D and further, Dr. Ulrike Kusebauch joined them for SpectraST and PepptideProphet.

The second day began with lecture on InterProphet and PTMPProphet followed by ProteinProphet and TPP on Amazon Cloud and XPRESS, ASAPRatio and Libra. The next day the participants were introduced to Cross-linking with Kojak, PeptideAtlas, SRMAtlas, SWATH Atlas and analysis. The last two days were dedicated to tutorials on the topics covered in the lecture series and hands-on sessions.
Dr. Sanjeeva Srivastava introducing Dr. Robert Moritz and his team to the participants

Dr. Robert Moritz’s team interacting with the participants

Participants attending the TPP workshop

Participants in the TPP workshop

Participants at the TPP workshop

Dr. Robert Moritz giving the introductory talk

Dr. Sanjeeva Srivastava interacting with the participants

Dr. Robert Moritz’s team and participants in the TPP workshop

Mr. Luis Mendoza giving a talk in the workshop
The mass spectrometry workshop was aimed at teaching the basics of three most commonly used proteomic applications using mass spectrometry: protein identification from gels (MALDI-TOF/TOF); protein quantification using gel-free quantitative techniques (iTRAQ); and validation of targets using Targeted Proteomics (QQQ). The workshop started with the opening remarks from the course coordinator Dr. Mayuri Gandhi from IIT Bombay.

The first day of the workshop comprised of lectures focusing on basics of mass spectrometry and applications of MALDI-TOF/TOF in proteomics by Dr. Srikanth Rapole and Mr. Rajesh Vashisth respectively, along with several hands-on sessions for in-gel digestion, sample preparation and data acquisition and analysis. The second day of the workshop witnessed lectures from several dignitaries in the field of mass spectrometry like Dr. Harsha Gowda, Dr. Ajit Datar, Dr. Mark McDowall and Dr. Andreas Huhmer who shed light on several aspects like label-free quantification using mass spectrometry and choosing the right LC-MS method depending on the experimental requirement. Our sponsors- Thermo Scientific and Shimadzu delivered a demo session for triple quad whereas the Q-TOF demo was delivered by Agilent Technologies.

On the concluding day, the participants were introduced to SRM/MRM analysis and Next Gen Proteomics Platform by Dr. Mahesh Kulkarni and Dr. Dipankar Malakar along with sample analysis on triple quad and Q-TOF and data analysis. All the participants joined for evening innovative sessions every evening.
Participants from all the workshops came together every evening for the innovative scientific sessions. The first day of evening session was themed ‘Quantitative and Targeted Metabolomics: An Update on Human Phenome Project’. The session was chaired by Dr. Mark Baker and Dr. Robert Plumb with a plenary talk by Dr. Robert Plumb focusing on the metabolic phenotyping on a global scale & the MRC-NIHR National Phenome Centre, a keynote lecture by Dr. Nicola Gray and several invited lectures by speakers like Dr. Paul Goulding, Dr. Srikanth Rapole and Dr. Mark McDowall.

The second day witnessed discussion on ‘Targeted approaches in Biosimilars and Biotherapeutics’. The session was chaired by Dr. Anurag Rathore and Dr. Utpal Tatu with Dr. Uma Raghuram moderating the session. Dr. Anurag Rathore delivered a plenary talk on the need for targeted proteomic approaches. An invited talk was delivered by Dr. Utpal Tatu which was followed by several invited tech talks by Dr. Shenglan Cao, Dr. Ravindra Gudhipal, Dr. Ravi K Krovidi and Ms. Rashi Kochhar.

The last day of the evening innovative sessions highlighted the ‘Targeted Proteomic Strategies for Clinical Biomarker Discovery’ with Dr. Joshua LaBaer and Dr. Jennifer Van Eyk chairing the session while Dr. Jason Chen moderated the session. Drs. LaBaer and van Eyk also delivered plenary talks on ‘Targeted proteomics using Protein Microarrays’ and ‘Clinically relevant constrained MRM assays: Exploiting disease-induced proteotypes’ respectively, followed by invited talks from Dr. Sanjay Navani, Dr. Utpal Tatu and Dr. Stephen R. Pennington and an invited tech talk by Dr. Shannon Cornett.
The Education Day in TPWIS-2015 was primarily conceptualized to apprise students and teachers with the latest development in the field of biosciences under the umbrella of a specialized branch of study called Proteomics. Considering the paucity of resources in terms of easily accessible instrumentation, this event presented an opportunity for the students and college teachers to familiarize themselves with the recent advancement in quantitative and targeted proteomics research. Further, the technical training required for specialized streams as these, have not yet reached the masses.

This event provided a suitable platform for college teachers and students for the extended interactions with the world’s leading proteomics scientists to build their expertise in these areas. The event was inaugurated by Prof. Rohit Manchanda, Head BSBE, IIT Bombay. This was followed by opening remarks by Dr. Sanjeeva Srivastava. The first session themed on “Basics in Proteomics: An Overview” was chaired by Prof. K. K. Rao. This Module featured speakers like Dr. Mark Baker, Dr. Surekha Zingde, Dr. Ravi Sirdeshmukh, Dr. Jason Chen who introduced the students to the area of proteomics and its various applications.

The second module themed Gel based proteomics was chaired by Dr. Tanuja Teni and it featured speakers like Dr. Niranjan and Shubhra Chakraborty who explained the basics of gel based proteomics, its far-wise applications for global proteomic profiling and advances in the field in the form of 2-D DIGE. Dr. Shubhendu Seal and Dr. Jaipal Panga Reddy demonstrated certain steps of two dimensional gel electrophoresis and data analysis to students.

Module three on mass spectrometry was chaired by Dr. Pramod Wangikar, and it featured speakers like Dr. Harsha Gowda and Dr. Mahesh Kulkarni who spoke about quantitative proteomics using MS platform. This was followed by Module IV on Targeted proteomics chaired by Dr. Harsha Gowda and featuring lectures by Dr. Robert Moritz, Mr. Brendan MacLean, Dr. Jacob Jaffe and Dr. Bruno Domon. Further, hands-on mass spectrometry session was conducted in a remote triggered manner.

Following this, there was an intense panel discussion on mass spectrometry standard operation procedures and precautions which was chaired by Prof. Rahul Purwar. The mass spectrometry interactive session with participants by Drs. Harsha Gowda, Mahesh Kulkarni, Rapole Srikanth and Ajit Datar was very stimulating and it was highly appreciated by the participants.
Dr. Tanuja Teni chairing a session.

Dr. Pramod Wangikar addressing the participants.

Dr. Bruno Domon giving an inaugural talk.

Volunteers preparing the set up for Dr. Shubendu’s talk.

Experimental demonstration.

Experimental demonstration.

Dr. Jason Chen addressing the participants.

Dr. Sanjeva Srivastava addressing the participants.

Dr. Ravi Sirdeshmukh felicitating Dr. Sanjay Nvani.

Dr. Bruno Domon giving a lecture.

Dr. Sanjeva Srivastava giving a lecture.

Experimental demonstration.

Dr. Jason Chen giving a lecture.

Dr. Harsha Gowda. 

Dr. Tanuja Teni giving a session.

Experimental demonstration.
TARGETED PROTEOMICS INTERNATIONAL SYMPOSIUM

Let’s be targeted...inspiration from Arjuna
INTERNATIONAL SYMPOSIUM
DAY WISE SESSIONS
DECEMBER 13, 2015 : DAY 1

Session-I: Clinical Biomarker Validation Using Targeted Proteomics

Dr. Surekha Zingde addressing the symposium participants

Dr. Mark S. Baker delivering a lecture

Dr. Joshua LaBaeer delivering a lecture

Dr. Jennifer Van Eyk delivering a lecture
DECEMBER 13, 2015 : DAY 1

Session-II: Targeted Proteomics for PTM Analysis

Dr. Sudhir Srivastava delivering a lecture

Dr. Stephen R. Pennington delivering a lecture

Dr. Sanjeeva Srivastava addressing the symposium participants

Dr. Aliasgar V. Moiyadi felicitating Dr. Sudhir Srivastava

Dr. Sanjeeva Srivastava addressing the symposium participants

Volunteers inviting Dr. Ravi Srideshmukh with a tikka adding a traditional touch to the symposium

Dr. Sanjeeva Srivastava felicitating Dr. Surekha Zingde

Dr. Aliasgar V. Moiyadi felicitating Dr. Subhra Chakraborty

Dr. Subhra Chakraborty felicitating Dr. Surekha Zingde

Dr. Jacob Jaffe giving a lecture

Dr. Hui Zhang giving a lecture

Dr. Subhra Chakraborty chairing the session
DECEMBER 13, 2015 : DAY 1

Session-III: Targeted Proteomics: Rising Tides

Dr. Srikanth Rapole felicitating Dr. Robert Moritz
Dr. Srikanth Rapole felicitating Dr. Harsha Gowda

Dr. Urmila Thatte felicitating Dr. Michael Hoopmann
Dr. Urmila Thatte felicitating Dr. Ulrike Kusebauch

Panel discussion on Biomarker validation in clinics using targeted proteomics

DECEMBER 14, 2015 : DAY 2

Session-IV: Targeted Proteomics - New Tools and Software

Dr. Suman Thakur felicitating Mr. Brendan MacLean
Dr. Suman Thakur felicitating Dr. Ben Collins

Dr. Subhra Priyadarshini delivering a lecture
Dr. Tsung Heng Tsai delivering a lecture

An online talk was delivered by Dr. Leigh Anderson
Dr. Jacob Jaffe during a discussion following a talk

Mr. Kishore Nitin delivering a short talk

Mr. Saicharan Ghantasala delivering a short talk

Ms. Sonali Vishwa Mohan delivering a short talk

Panel discussion on Quantitative targeted assays using mass spectrometry: Prospects and standards

Session-V: Targeted Assays for Clinical Applications

Dr. Bruno Domon felicitating Dr. Suman Thakur

Dr. Mark McDowall delivering a lecture

Dr. Niranjan Chakraborty felicitating Dr. Andrei Kozlov

Dr. Suman Thakur delivering a lecture

Dr. Sivaramaiah Nallapeta delivering a short talk

Dr. T.B. Bennike being felicitated by Dr. Swati Patankar
The cultural evening program held in the evening witnessed the enchanting performances of many artists. The event began with an Indian classical ‘Bharatnatyam’ dance performance by the students of Mrs. Shyama Sharma. She is well-trained in folk dances and Rabindrik Nritya. Presently, she is conducting Bharatnatyam classes at the Hiranandani Estate branch of Sanskriti. The classical dance performance was followed by another spectacular dance performance by ‘Prince Dance Group’, led by the choreographer Krishna Mohan Reddy. The members of this group hail from a small town of Behrampur, in the state of Odisha. This team of twenty-six daily wageworkers and the winners of the reality show, ‘India’s Got Talent’ captivated the entire country with their breathtaking performances. Their Lord Krishna and Indian Flag Act are still etched in our memories. They performed in the opening ceremony of Indian Premier League and many other prestigious events. The audience was also enthralled by two musical performances by the Falcon Blues Live Band, one of the largest musical bands and the soulful singer Bhaven Dhanak.
Dance performance by Prince dance group

Musical performances by Falcon Blues and Bhaven Dhanak
ROCK & ROLL @ TPWIS-2015
CONGRATS ALL!!

STUDENT AWARDS

The student awards for best performance in the Targeted Proteomics Workshop

Jagadeesha Prasad MG
Gouri Patil
Sneha Pinto
Yashwanth Subbannayya

The student awards for best performance in the Trans-Proteomic Pipeline Workshop

Reema Banarjee
Manubhai KP
Nitin Kishore
Kamal Mandal

The student awards for Best Artwork

Khaja Shaik
Krutika Patil
Jennifer Anklesaria
Mikashmi

The student awards for Best Essay

Jennifer Anklesaria
Vishwanathan Upadhyay
Mikashmi

The student awards for Best Poster Presentation

Vimala Ashok Mani
The second award was shared by Divakar Sharma and Chanukuppa Venkatesh
Monalisha Nayak

The student awards for Best Oral Presentation

Kristina Poljak
Saicharan Ghantasala
Sumit Kumar Singh

The awards for distinguished service and pioneering initiatives for the Proteomic Society, India

Dr. Surekha Zingde
Dr. Ravi Sirdeshmukh
Dr. Surekha Zingde being felicitated “distinguished services award” for her contributions to Indian Proteomics Community over the years

Dr. Ravi Sirdeshmukh awarded “distinguished services award” for his contributions to Global Proteomics Community over the years
STIMULATING DISCUSSIONS

VIEW OF THE VENUE
STIMULATING DISCUSSIONS
TPWIS-2015 organizing team with the convener Dr. Sanjeeva Srivastava

TARGETED PROTEOMICS WORKSHOP & INTERNATIONAL SYMPOSIUM
IIT BOMBAY, MUMBAI - DECEMBER 10 to 14, 2015

THANK YOU ALL