



Fostering international proteomic initiatives to better understand human disease

www.HUPO.org

In this issue

President's Message.....	1
KHUPO.....	2
C-HPP Workshop in Berlin.....	3
Pan American HUPO.....	4
HUPO Congress 2013.....	5
HUPO Congress Initiatives.....	6
Industrial Advisory Board	7

Thank you
Yokohama Congress
PLATINUM
Sponsors



President's Message



2013 is now well on its way, and our annual congress in Yokohama city is approaching quickly. This HUPOST will give you some news on the preparation of the HUPO 2013 congress and also on the development of the Human Proteome Project, as well as on some general HUPO activities.

We had a very active C-HPP workshop in Berlin last March headed by Young Ki Paik and Bill Hancock, in conjunction with the Proteomics Forum 2013 organised by our German colleagues. It followed the publication of a special issue on the HPP in JPR earlier this year. The B/D HPP placed under the responsibility of Ruedi Aebersold is now running several research projects, some of them being in continuation of former HUPO initiatives (revisited under the responsibility of Tadashi Yamamoto). The HPP executive committee headed by Gil Omenn holds regular conference calls, fostering the activities developed in the three pillars of the HPP (Mass spectrometry, Antibodies and Knowledge base), thanks to the active participation of Amos Bairoch, Christoph Borchers, Eric Deutsch, Bruno Domon, Fuchu He, Emma Lundberg, Lydie Lane, and others... The scientific advisory board headed by Mike Snyder also gives input for connecting the HPP with other worldwide major scientific networks on various topics, such as genomics or epigenetics. See *full report on page 3*.

In relation to these HUPO scientific activities, agreements between HUPO and scientific publications are currently being revisited under the responsibility of Yu-Ju Chen and the publication committee.

Regarding HUPO organization, we are working on new synergies between HUPO international and national proteomics societies to create new opportunities for HUPO members to facilitate and promote associate HUPO memberships, thanks to Bruno Domon and the HUPO membership committee. These initiatives should be formalized before the HUPO2013 congress in order to implement them before the end of 2013.

I hope this year brings you a lot of scientific achievements and I am looking forward meeting all of you in Yokohama September 14 - 18.

Pierre Legrain
HUPO President



Yokohama 2013
12th Annual HUPO Congress
September 14 - 18
Yokohama, Japan

Don't forget
Pay 2013 HUPO
dues and save on
registration
www.hupo.org

Congress 2013
Register now & save
Early Registration
ends May 31
www.hupo.org/2013/

HUPO Executive Committee

Pierre Legrain, President (France)
Catherine Costello, Past President (U.S.A.)
Maxey C.M. Chung, Secretary General (Singapore)
Roman Zubarev, Treasurer (Sweden)
William Hancock, Vice President, (U.S.A.)
Gilbert S. Omenn, Member at Large (U.S.A.)
Mark Baker, Member at Large (Australia)

HUPO.org Is Getting a Face Lift

Members - please contribute:

- Images that represent proteomics, basic but varied dynamic
- Regional meetings to add to the calendar
- Reports, including photos, from regional meetings

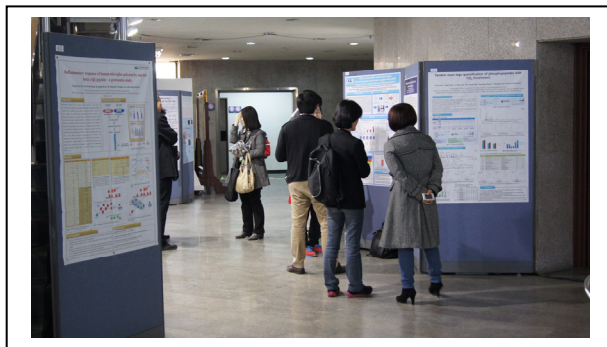
Look for launch in June

Calendar of Events of Related Events

(Go to www.HUPO.org for details):

July 6-11 Federation of European Biological Societies, St Petersburg, Russia

Aug 12-15 Proteomics Symposium, Cancun, Mexico



Congratulations

13th Anniversary of KHUPO

In conjunction with the 13th anniversary of KHUPO, the Korean Human Proteome Organization (KHUPO, President: Dr. Chan-Wha Kim) held the 13th Annual KHUPO International Meeting at the Cultural Center of Seoul National University, Seoul, Korea in March. The theme of this meeting was "Integrated Proteomics: Proteogenomics".

The 13th KHUPO hosted 344 international scientists from USA, Japan, Australia, China, Taiwan, and Korea. The conference provided proteomic viewpoints of proteome biology and technology, its application to human diseases, and drug development. Four outstanding plenary lecturers presented

- Knowledge-based draft map of the human proteome, the integration of multi-omics datasets for the human genome annotation (Dr. Akhilesh Pandey);
- The study of chromosome 17 as part of the chromosome-centric human proteome project (Dr. William S. Hancock);
- Shifting proteomics from a hypothesis generating workflow to a hypothesis testing workflow (Dr. Michael MacCoss); and
- New concepts in understating metastasis (Dr. Michael Freeman).

Eight symposia and 81 posters covered the areas of disease biomarkers, proteogenomics, biochips, antibody proteomics, PTM (post-translational modification), systems biology, redoxomics, and the human proteome project. Twenty poster presenters were given outstanding Young Scientist Awards. Detailed information and programs of the 13th KHUPO international meeting are available at: www.khupo.org/meeting.



Committee members, invited speakers and conference volunteers at 13th KHUPO

Report on the C-HPP Workshop in Berlin

Young-Ki Paik, William Hancock and Gyorgy Marko-Varga, co-chairs of C-HPP

The HUPO C-HPP consortium recently hosted its 7th Scientific Workshop in Berlin, March 17, 2013 in conjunction with the 2013 Proteomic Forum Berlin 2013. This workshop was supported by Proteomic Forum (Chair: Marius Ueffeng), Thermo Fisher (Paul Humphrey), and HUPO.

The **Principal Investigator Council (PIC) meeting** addressed these key issues:

- Set official baseline for the project period to be from Sept 10, 2012 to Sept 9, 2022.
- Set term, composition and regional balance of EC members.
- Supported a general policy on the chromosome-wide collaboration and data sharing within the consortium, which states that each team may study any protein of interest encoded in any chromosome as long as they honor a spirit of mutual collaborations between teams (e.g., study group and the originally assigned team of corresponding chromosome). There shall be no exclusive right possessed by any chromosome team on any protein or gene in their assigned chromosomes.
- Accepted the policy and execution of the "annual report and evaluation" system which states that each chromosome team submits its related publication of the assigned chromosome or annual activity report to C-HPP EC at the end of each project period (e.g., 1st year: August 31, 2013). The EC will seek comments and advice from the Senior Scientific Advisory Board (SSAB) on the reports.
- Agreed on the designation of Global Resources Centers which allows the consortium to extend its collaboration networks to world-wide renowned scientific teams (e.g., metabolomics, phenomics, epigenomics and sample bio-banks etc).

The PIC discussed a collaboration with ENCODE, a survey of RNAseq services through the major providers (e.g., Siqi Liu at BGI etc.), a strategy for the Yokohama Congress workshops (e.g., plenary speakers for the HPP session) and clear definition of missing proteins.

Main workshop sessions included many perspectives on integrated 'omics:

- Mike Snyder (Stanford University) on "Transcriptome and Proteome: RNA-seq and proteomic evidence for ENCODE project (non-coding RNA and ASVs-amino acid polymorphisms)"
- Ian Wilson (Imperial College of London) on "Large Scale Metabolic Phenotyping in a Systems Medicine World"
- Emma Lundberg (KTH Royal Institute of Technology) on "Update on the Human Protein Atlas"
- Ruedi Aebersold (Institute of Molecular Systems Biology, ETH Zurich) on "Networking Proteomics" with emphasis on bridge between the B/D HPP and C-HPP.
- Juan Antonio Vizcaino (EBI) provided a guideline on 'ProteomeXchange'
- Siqi Liu (Beijing) on "BGI and support of C-HPP transcriptomic works"
- William Hancock (Boston) suggested an approach to define the missing parts list for a chromosome and PTM characterization in an alternative spliced variant (sEGFR)

The **Web browsers session** featured Peter Horvatovich (C-HPP Wiki), Ping Xu (Caper), Ed Nice and Andrey Lisitsa (Chromosome-Centric KB) who discussed updates on the web browsers for the C-HPP.



In the **Bioinformatics session**, topics relevant to the C-HPP data management were discussed resulting in these actions.

- 1) Implementation of standard metrics: C-HPP will define versions of Ensembl and neXtProt to be in the 2014 special issue
- 2) C-HPP Wiki: Each chromosome team will upload information on their own chromosome and bioinformatics for discussion at a conference call to be held every two months.
- 3) Data submission to ProteomeXchange: Each chromosome team will submit a practice file (one LC/MS run) to become familiar with the submission process.
- 4) RNA-Seq data sets: BGI will investigate and inform C-HPP of the process for sample submission and analysis at the different geographical sites. It is possible to have analyses at a reasonable cost or as a research collaboration
- 5) ENCODE: Mike Snyder will supply access to the latest Encode data sets and, in the future, transcript analysis.

In the working group session, there were brief updates from newly organized those teams: Chr 5 (Rainer Bischoff, The Netherlands), Chr 6-(Leonard Foster on behalf of Paul Keown, Canada), Chr 9 (Je-Yoel Cho, Korea), Chr14 (Jerome Garin, France), Chr15 (Gilberto B Domont, Brazil), Chr18 (Alexander Archakov, Russia), Chr 19-Transcriptomic study (Carol Nilsson, USA), and Mitochondria (Andrea Urbani, Italy).

In the **final session on Resources & Bio-banks**, three presentations were followed by discussion: Bio-banks and its utilization, Cell Lines by Gyorgy Marko-Varga; Rare tissues (nasal epithelia) by William S. Hancock, Antibody by Ed Nice, Emma Lundberg and Tadashi Yamamoto (Antibody Ranker).

Summary. The workshop contributed very productive results: the defined baseline for the C-HPP project operation, consensus on the chromosome-wide collaboration on particular proteins, a better way to integrate ENCODE into the C-HPP, dissemination of the project information through Wiki and other web portals, improvement of standard metrics for the status of missing proteins in each chromosome, and timely practice for data submission through ProteomeXchange. Importantly, these actions should be executed through cooperation with B/D-HPP group under the umbrella of HUPO HPP.

HUPO Congress Dates and Locations

September 14 - 18, 2013
12th Annual World Congress
Yokohama - www.hupo2013.com

October 5 - 8, 2014
13th Annual World Congress
Madrid

September 13 - 18, 2015
14th Annual World Congress
Vancouver

Pan-American HUPO Holds Its First Scientific Meeting

In conjunction with the Canadian National Proteomics Network annual meeting in Vancouver, a half-day symposium of the Pan-American HUPO was convened on 24 April 2013. Christoph Borchers (Canada) served as host and moderator. The PanAm HUPO officers are Bill Hancock (chair, member of HUPO EC), Christoph Borchers (Canada), Victoria Pando-Robles (Mexico), Gilberto Domont (Brazil), and Gil Omenn (USA). Luis Teran (Mexico) and Mario Genero (Argentina) were involved in earlier discussions.

Bill Hancock presented the rationale for regional HUPO organizations, recently reinforced by the decision to have regional nominations of members of the HUPO Council. Typically 3 individuals are elected at large and 2 individuals are nominated by the regional HUPO with certain diversity criteria in mind (country, field of proteomics, industry, gender, age) as part of the five three-year positions usually open each year in each of the three regions. AO-HUPO is highly developed, with large regular scientific meetings and rotating officers. Gil Omenn discussed the opportunities for Pan-Am HUPO investigators to become involved in the Human Proteome Project, joining existing teams in the C-HPP or B/D-HPP or resource pillars or even launching a new national or regional team. Gilberto Domont presented the plan of action for the C-HPP Chromosome 15 team in Brazil, which he chairs; they will pursue a multi-pronged multi-omics experimental program.

Domont (Rio de Janeiro, president, Brazilian Proteomics Society) then gave a detailed presentation about several classes of snake venom proteins and their neurotoxic peptides; this is a big subject, closely tied to the neurobiology of the victims. Some mammalian species, such as opossum, have inhibitors against certain venom neurotoxins. Victoria Pando-Robles (Cuernavaca, Mexico, president of the Mexican Proteomics Society) gave a comprehensive presentation about Dengue fever. A million people per year are infected and about 50,000 die; it was an infection restricted to Venezuela and SE Asia 50 years ago; now it is ubiquitous except for Canada and most of the US Europe. This RNA virus infects the *Aedes aegypti* mosquito and then the mosquito carries the infection among people. The infection became far more prevalent and much more lethal when people were infected with more than one strain. Dr. Pando-Robles studies the human host monocyte proteome in characterizing dengue virus infections. Luis Teran (Mexico City, former president, Mexican Proteomics Society) spoke about viral respiratory diseases. He is associating proteomics findings of proteins in patients with specific viruses, including respiratory syncytial virus, influenza, and parainfluenza. He is also active researching asthma, using bronchial lavage and biopsy specimens from clinical studies.

Brazil plans to host the next meeting of the Pan-American HUPO in conjunction with its 2014 annual meeting, probably in August 2014, after the World Cup concludes on 19 July. The plan is to hold these annual meetings in conjunction with a national meeting in two of three years, with the third year being reserved for the HUPO World Congress in the Pan-American region (next will be September 2015 in Vancouver BC). Major company sponsors of HUPO are quite active throughout Latin America; they offered to assist in outreach to the principal investigators and their teams to enhance participation in the PanAm meetings. Meanwhile, the Mexican Proteomics Society announced its 2013 meeting will be in Cancun 13-16 August 2013, with a stellar group of invited speakers.

Also as part of the CNPN meeting, on April 24, there was a session about the HUPO Human Proteome Project (HPP), with specific attention to the activities of the Canadian Team, chaired by Paul Keown, responsible for Chromosome 6 and focusing on allo-immunity (transplantation), auto-immunity (rheumatoid arthritis, type 1 diabetes, multiple sclerosis) plus schizophrenias and Alzheimer disease. There is also renewed interest, led by Christoph Borchers, on Chromosome 21, linking MRM for proteins from each of the 240 genes with the antibody survey of chromosome 21 proteins published by Uhlen et al in MCP in 2012. Bill Hancock presented a detailed summary of the work of the Chromosome 17 team (U.S. and Canada), with a focus on the ERBB2-amplicon and ERBB2+ breast cancers, and Gil Omenn gave an overview of the entire HPP, highlighting work just published in the January 2013 special issue of *J Proteome Research*.

Gil Omenn, rapporteur



September 14 - 18, 2013

www.HUPO2013.com

Congress Co-Chairs



Hisashi
Hirano



Kazuyuki
Nakamura



Naoyuki
Taniguchi



Tadashi
Yamamoto

Preliminary Program

Saturday, September 14

- Pre-Congress Education Day
- Pre-Congress Clinical Day
- Opening Ceremony and Openings Lectures
- Welcome Reception

Sunday, September 15

Plenary Lecture

Parallel Sessions

- Quantitative Mass Spectrometry
- Antibody Proteomics and Protein Atlas
- Single Cell Proteomics
- New Tide of Biomarker Discovery

Lunch Seminars

Poster Session

Parallel Sessions

- Top-down Proteomics
- Imaging Mass Spectrometry
- Membrane Proteomics
- Cancer Proteomics
- Structural Proteomics of Post-Translational Modification

Plenary Session

New Technologies & Standardization Seminar

Monday, September 16

Initiative Sessions

Plenary Session

Parallel Sessions

- New Technology in Phosphoproteomics
- New Technology for Mass Spectrometry
- Proteomics of Protein Degradation
- Proteomics for Diseases other than Cancer
- Young Investigator Session

Lunch Seminars

Poster Session

Parallel Sessions

- Proteomic Application of Multiple (Selected) Reaction Monitoring
- Proteogenomics & Proteome Informatics
- Drug Target Proteomics
- Young Investigator Session

Congress Concert

Gala Dinner

Tuesday, September 17

Initiative Sessions

Plenary Session

Parallel Sessions

- Mass Spectrometry for Protein Complex
- Mass Spectrometry for Glycomics and Glycoproteomics
- Proteomics of Exosome and Other Organelles
- Disease Phosphoproteomics
- Omics Database

Lunch Seminars

Poster Session

Parallel sessions

- Sample Preparation for Mass Spectrometry
- New Technology in Integrated Omics
- Disease Glycoproteomics
- Drug Design Based on Proteomics
- High Quality Proteomics

Parallel Sessions

- Nobel Prize Memorial Lecture
- Systems Biology
- Biology-oriented Glycoproteomics
- Chemical Proteomics
- Proteomics of Plants, Animals & Agriculture 1

Vendor Evening programs

New Technologies & Standardization Seminar

Wednesday, September 19

Parallel Sessions

- Human Proteome Project (HPP)
- Proteomics for Model Organisms
- Proteomics of Plants, Animals & Agriculture 2
- JHUPO General Assembly and JHUPO Award Lectures

Lunch Seminars

HUPO Award Lectures

HUPO General Assembly

Closing Session



2013 Congress Initiative Programs The Human Proteome Project (HPP)

HUPO 2013 will present major progress of the Human Proteome Project, comprising the Chromosome-centric C-HPP, the Biology and Disease-driven B/D-HPP, the MS, AB, and Knowledge base resource pillars, and the Senior Scientific Advisory Board. For extensive information, including the many investigator and leadership teams, see www.thehpp.org. HPP investigators will have a pre-Congress working session all day on Saturday Sept 14.

An HPP Plenary Session on Wednesday Sept 18 will inform all Congress participants about the strategy, progress, and prospects of the HPP and its components parts and invite extensive discussion. That session will also have several featured speakers illuminating the goal of connecting proteomics with the broader life sciences research community.

Chromosome-centric Human Proteome Project (C-HPP)

The C-HPP consists of national or regional teams focused on the proteins and protein isoforms arising from each of the protein-coding genes on specific chromosomes, hence 24 teams in all, plus a mitochondrial team. The C-HPP generated a splendid special issue of the Journal of Proteome Research in January 2013, drawing in large part on the work presented at HUPO 2012 in Boston. That issue has 22 articles from C-HPP/HPP investigators, including chromosome teams 1, 4, 7, 8, 11, 16, 17, 18, 19, 20, X, Y, and several database groups, plus 11 articles that are independently submitted as C-HPP-related. A similar special issue is planned for January 2014 in JPR.

The C-HPP (www.c-hpp.org) will have sessions early each morning, an open poster session in the Exhibit Hall on Monday, and a Bioinformatics session on Tuesday.

Biology and Disease-driven Human Proteome Project (B/D-HPP)

The B/D-HPP aims to develop knowledge, reagents, and resources that enable the entire life sciences research community to identify, quantify, and characterize proteins in health and disease. Integration across the multi-dimensional span from genome to phenotypes is a key goal. There are now 16 B/D-HPP teams, including the pre-existing HUPO initiatives by organ and biofluid.

The B/D-HPP is sponsoring early morning workshops/scientific sessions on Sunday, Monday, and Tuesday, with 4 simultaneous sessions each day.

Join Your Industry Partners to Support and Advise HUPO

Created in 2006 the HUPO Industrial Advisory Board (IAB) facilitates communication and input from industry partners to support the proteomics community and to recognize these partners as HUPO affiliates. HUPO supports industry allies active in the development of innovative technologies and appropriate standards that are responsive to the constant changes in the scientific proteomics environment.

Mission

To provide HUPO leadership (the Executive Committee) valuable input on technology and product innovation for the benefit of members and to identify industry trends that will position HUPO to meet the future challenges of its partners and organization.

Benefits of IAB Membership

- One free individual HUPO membership available for company employee (value \$100.)
- Discounted fee and early sign-up for Industry Presentation at pre-congress 'New Technologies & Standardization Symposium.'
- Involvement in Human Proteome Project (HPP) with regular updates from project leadership.
- Direct connection with HUPO Executive Committee via IAB monthly calls.
- IAB sponsored *Science and Technology Award*, established in 2011 (2011 recipient: Alexander Makarov, Thermo Scientific and 2012 co-recipients: John Cottrell and David Creasy, Matrix Science), awarded to industrial scientist. IAB representatives solicit and vet nominees. Award recipient presents a talk on the project at the annual world congress

Eligibility

- Proteomics product/service distributors/manufacturers; or
- Pharmaceutical or biotech companies with a proteomics disciplinary focus.
- Payment of annual dues (\$2,000 USD.)

IAB Leadership and Composition

- Co-chaired by an appointed HUPO Executive Committee member and an elected IAB representative. The term for co-chair service is two years.
- Two representatives per IAB member company (one from science and one from marketing.)
- The leadership meets monthly via conference call.

HOW TO JOIN?

For more details go to <http://www.hupo.org/overview/structure/iab.asp> or contact contact Jennifer Watson (jennifer@hupo.org) for details.

