



Canadian National Proteomics Network
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Summary: Canadian Human Proteome Project Meeting in Toronto, Feb. 22, 2011

The Human Proteome Project (HPP) was launched in September 2010 at the Human Proteome Organization (HUPO) 9th Annual World Congress in Sydney, Australia. The HPP builds on the Human Genome Project by leveraging existing genomics information to identify, quantify and characterize the human proteome, which is thought to contain significantly over 20,000 protein coding genes. The goals of the HPP are to map and characterize human proteins in a chromosome-centric approach, and develop innovative tools and reagents that the proteomics community can use to further their understanding of the field.

The Canadian National Proteomics Network (CNPN) is promoting a Canadian Human Proteome Project (CHPP) to support the HPP. The concept of a CHPP has been well received by Canadian funding agencies, including Genome Canada, Génome Québec, Ontario Genomics Institute, Genome British Columbia and Canadian Institutes of Health Research. During a teleconference on October 29, 2010, the agencies urged CNPN to engage the scientific communities to develop projects and a roadmap for funding. In response, the CHPP Working Group held its first meeting on January 16-17, 2011 in Hometown, Barbados, in conjunction with the 7th Annual Proteomics Conference in Cell Biology. During this two-day meeting, national and international support was demonstrated by academic and industry speakers from around the world. The first draft of a Position Paper was developed with feedback from the community; this document has since been widely circulated to members of CNPN, the proteomics community and funding agencies.

On February 22, 2011 a larger group consisting of clinicians, scientists, funding agencies and industry met in Toronto, Ontario to further discuss the CHPP. The main goals of this second CHPP meeting, sponsored by Ontario Genomics Institute, were to inform and engage the broader community, and stimulate feedback on the Position Paper so that a White Paper can be developed for presentation to Canadian funding agencies during May 8-11, 2011 at the CNPN Annual Symposium in Banff, Alberta. Dr. Peter Lewis, Associate Vice President Research at the University of Toronto, and Dr. Michael Siu, Chair, CNPN Board of Directors, and Associate Vice President Research, Science & Technology at York University, provided welcoming remarks to start the meeting. Next, a presentation was given on the

status, organization and goals of HPP by Dr. Cathy Costello, President of HUPO. HPP will focus on three technology pillars: mass spectrometry, antibodies, and knowledge databases; with a HPP web portal acting as the focal point for publicizing the project. Dr. Costello raised several key points to guide the CHPP Working Group, including guidelines for quality control, reference specimens and reporting, and the role of national and regional organizations, including HUPO and CNPN, in supporting HPP. During 2011, HUPO and other supporting organizations will aim to expand HPP visibility to larger scientific initiatives. Dr. Christoph Borchers, President of CNPN, then gave a summary of the history of CHPP and the salient points of the CHPP Position Paper.

A series of presentations from key personnel at leading mass spectrometry and life sciences companies demonstrated industry's interest in supporting and participating in CHPP. Representatives from Bruker, Waters and Agilent, three leading mass spectrometry companies, described their investments in clinical diagnostics, including regulatory approval for Europe, Canada and the US. It was clear that each company will provide valuable input reflecting their corporate visions and strategic plans, and that CHPP should impact clinical diagnostics in order to effectively engage industry. Key strategies for developing industry/CHPP partnerships focused on clinical diagnostics will include collaborative software and hardware development, clinical trials, diagnostic test kit development, service pipelines and sample preparation.

Presentations were also provided by leading researchers and clinicians, demonstrating excitement for CHPP from many diverse scientific and medical fields, including transplantation, autoimmunity, neurological disease, Down's syndrome research, structural genomics, technology, bioinformatics and many other aspects related to health research. Dr. Paul Keown, Professor of Medicine at UBC, and Dr. John Bergeron, Professor at McGill University, provided updates to their chromosome 6 and 21 initiatives for CHPP. These two chromosomes encode biological information linked to many important health challenges, including multiple sclerosis, rheumatoid arthritis, cardiovascular disease, leukemia and organ failure, that heavily impact Canadians. Researchers in Canada are well-recognized for their significant contributions in many of these fields, and CHPP initiatives on chromosomes 6 and 21 would leverage from an extensive list of existing collaborations and partnerships comprising not only academics, but also the pharmaceutical and biotechnology industries. Dr. Gary Levy, Director of the University of Toronto Transplantation Institute, was very enthusiastic that Canadian expertise on diseases linked to these chromosomes would provide CHPP with access to existing partnerships, which would include industry support, funding programs, and well characterized patient samples for clinical studies.

Two break-out sessions took place during the Meeting, which allowed attendees to provide comments and feedback to assist in the development of governance, partnership, operations and knowledge dissemination models to support a national CHPP. Key strategies included inter-disciplinary and multi-functional advisory boards that will ensure representation from a very broad scientific and medical community to benefit multiple research and health care programs. Advisory groups supporting scientific, ethical, commercial, end-user and international interests are critical for CHPP, and may be further

augmented by sub-committees that further support the overall goals of CHPP through direct linkages to CHPP researchers, clinical and genomics programs, as well as other groups. Outreach to the general public, patient groups, and health care providers will be important to further engage community support and achieving CHPP's goals of developing a leadership position for Canada. Canadian technological strengths that can be leveraged were discussed, and possible solutions addressing limitations in standardization, data collection, handling and storage were proposed. It was suggested that some of these points may be further addressed through consultations and additional meetings.

Feedback from the meeting and the breakout discussions is now being incorporated into the Position Paper. A third CHPP meeting will be held in Vancouver, BC, in early April, 2011. The revised Position Paper will be presented, and the meeting will be organized in a format based on the Toronto meeting and with breakout sessions. The Vancouver meeting will largely focus on technologies that will support CHPP, including mass spectrometry, antibodies, and bioinformatics. Representatives from the pharmaceutical, diagnostic and healthcare industries will be invited to participate and provide presentations describing opportunities for involvement, especially from a commercialization perspective. The local Vancouver biotechnology sector will also be invited to stimulate direct linkages to new and emerging markets. The CHPP Meetings' output will be reflected in the various revisions of the Position Paper, which will ultimately constitute the basis of a White Paper for presentation to Canadian funding agencies at the CNPN Annual Symposium in Banff, May 2011.

The agenda and complete list of meeting attendees of the Toronto CHPP Meeting are available in the Appendix.

CNPN is grateful to Ontario Genomics Institute for its support for this Toronto CHPP Meeting, especially in this critical juncture of the development of CHPP. It is no exaggeration that every attendee was positive about CHPP and realized its potential and impact on proteomic science not only in Canada, but also internationally. CHPP was and is continued to be seen as a large-scale pan-Canadian project that is scientifically exciting, will reap benefits to Canadians, and will impact upon Canadian health. The Toronto CHPP Meeting has stimulated interest and excitement among the Canadian proteomics community, and CHPP is regarded as a community project to which everyone can and should contribute. There is indication that this excitement resides not only with academics and industrial scientists, but is also shared by funding agencies, which were well-represented in the CHPP Meeting. CNPN looks forward to continue building on the momentum created, especially in the Vancouver Meeting in April, and climaxing in the Banff Annual Symposium in May with presentation of the White Paper.