



Dear Colleagues,

Welcome to our Nov 2013 (Issue 3) POLARIS update. Supported by A*STAR's Strategic Positioning Fund, POLARIS represents a national effort by Singapore to enter the precision medicine field. Our current partners include GIS, BTI, SGH, SNEC, NCCS, and NUHS.

The POLARIS team has been extremely busy in many areas. Aably led by Chris Wong, the POLARIS@GIS laboratory has completed multiple runs on the Illumina MiSeq and HiSeq machines - the equipment is performing well and according to expectations. We have tested our data delivery pipelines, and have successfully shared sequencing data with disease champions and collaborators at the Saw Swee Hock School of Public Health and Singapore General Hospital. POLARIS project managers and application specialists have passed the first phase of the Illumina CPro vendor certification, and we expect to be fully CPro-certified by the end of year. The Genologics lab information management system (LIMS) has been successfully installed, and is currently being optimised and tested. This effort is being led by Dr Pauline Ng, our Chief Information Officer.

To ensure transparency and integration with national programs, POLARIS has established a Steering Committee comprising members from A*STAR (Ben Seet, Ng Huck Hui, Lam Kong Peng), Singhealth (Soo Khee Chee, Tan Puay Hoon) and NMRC (Tan Say Beng). A previous Committee member was Prof Stephen Smith, Founding Dean of the NTU Lee Kong Chian School of Medicine. Prof Smith has since moved on to the University of Melbourne, and we wish him well. In his place, we are pleased to announce that A/Prof Yeoh Khay Guan, Dean of the Yong Loo Lin School of Medicine, has agreed to become a Steering Committee member. A respected clinician-scientist, academician, and educator (picture), A/Prof Yeoh's guidance will greatly facilitate the vision of POLARIS to be a truly national program.

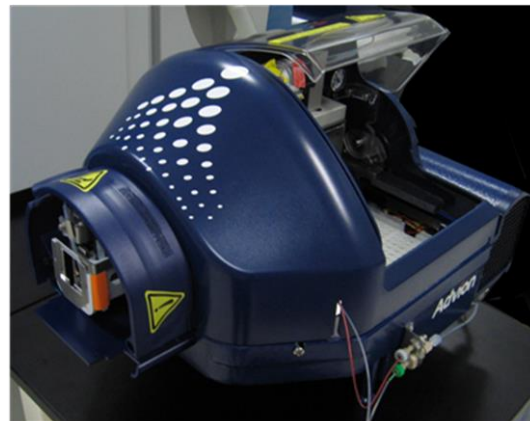


A/Prof Yeoh Khay Guan, New Member of POLARIS Steering Committee

IMPT DATE! : We would like to draw attention to an important event on 29th November - our first POLARIS-associated CME session, which will update the Singapore medical community on the state-of-the-art regarding DNA sequencing technologies and the role of genetic testing in healthcare. Organized by Dr Tony Lim (POLARIS Clinical Director), Dr Iain Tan (POLARIS Disease Champion) and John Coe (SingHealth Office of Research), the event will offer talks by A/Prof Steven Rozen of Duke-NUS, who will discuss "The promise of next generation sequencing", while Prof Wong Tien Yin from the Singapore National Eye Centre and National University Hospital will speak on "Genome wide association studies of human diseases: the view from the clinician". The poster for this event is attached, and interested parties are encouraged to contact Drs Lim (lim.kiat.hon@sgh.com.sg) and Tan (iain.tan.b.h@nccs.com.sg) for further details.

While the bulk of our activities are centred on genomics, POLARIS is also pursuing clinical deployment of other promising technologies. One fast-emerging area is clinical metabolomics. At BTI, POLARIS investigators have acquired a new liquid chromatography-mass spectrometry (LC-MS) system, incorporating a chip-based nano-electrospray source, for such studies (pictures). The system has been fully commissioned and method development is currently in progress. A preliminary metabolomics study of 16 biofluid samples from benign, pre-malignant and malignant pancreatic cystic lesions (collaboration with Dr Tony Lim and Dr Damien Tan) is presently on-going. Initial results

from the study have indicated that selected polar and lipid metabolites are significantly elevated for malignant cases in comparison to benign controls.



Events are also fast-moving in the clinical genomics space in other parts of the world. In September, the NIH in the USA awarded four US research groups a total of \$25 million over 5 years to study the impact of whole genome and exome sequencing on newborns. The pilot projects aim to understand the technical, clinical and ethical ramifications of genomic research in newborns. Of particular interest are the development of platforms to acquire, store and report genomic information in an ethically appropriate fashion; the potential of exome sequencing for disorders that are currently not tested for; the possibility of introducing routine genomic screening for newborns; and its overall impact on the healthcare system. These studies are a small step toward answering the ethical issue of how to acquire and handle genomic data, and also an indication of the increasingly important role genomic screening could play in the clinic. We at POLARIS will monitor the findings from these studies closely.

Finally, we would like to ask clinicians and scientists interested in POLARIS to mark January 21st 2014 on their calendars. This will be our 2nd POLARIS Community Meeting, where we will provide presentations and updates on our activities, and POLARIS tests that are nearing clinical launch. We hope that these meetings will provide good opportunities to engage the Singapore academic medicine community in this fast moving field. Interested parties should contact Ms Chua Hui Hoon (chuah2@gis.a-star.edu.sg) for information, and our web-site will be up in mid-November for on-line registration.

Best regards,
Patrick Tan
(On behalf of the POLARIS Team)



<http://polaris.a-star.edu.sg/>

Save The Dates Reminder:
November 29th 2013 – Continuing Medical Education Lecture
January 21st 2014 – Second POLARIS Community Meeting