Precision Medicine in Metabolic Disease: A new data driven approach to prevent the onset of metabolic disease

13 October 2016
Level 6 Seminar room
Charles Perkins Centre
9am– 4pm

PROGRAM

Start	
9.00am	**Opening and introduction**
9.10am	**Concept map for Development of a Precision Medicine Program in Metabolic Disease** Professor David James and Dr Samantha Hocking
9.30am	**Plenary Lecture 1** Professor Jun Wang, *iCarbonX, Guandong, China*
10.15am	**Plenary Lecture 2** Professor Hiroaki Kitano, *Okinawa Institute of Science and Technology, Japan*
11am	**Morning tea**
11.30am	***Workshops*** Group divides into 4. Each workshop will have a number of invited facilitators
	Workshop 1: The Clinical Research Landscape – use of existing versus new studies Innumerable intervention studies exploring the best diet, exercise regimen or pharmacotherapy to prevent metabolic disease have been performed yet debate about optimal health lifestyles persists. For complex metabolic disease, it is likely that integration of multi-omics data together with human genomics data, phenotypic data and lifestyle interventions will provide significant progress. Can these analysis techniques be applied retrospectively to existing studies or are new prospective studies needed?
	Workshop 2: Phenotyping subjects through new technology We live in the age of social media and wearable technology. Every day thousands of people collect data on physical activity, diet and sleep. At this stage, this vast data resource remains untapped. Do advances in technology mean we can measure more things in more people than ever before? Can we use new technology to improve metabolic disease?
	Workshop 3: Big data 1– Utilising –omics platforms Technological advances have expanded the breadth of –omics data we can obtain at a relatively low cost. This will lead to identification of novel integrated signatures that can predict complex metabolic diseases. What should we be measuring and how should it be measured? Can we identify signatures that predict health? Will these signatures lead to effective strategies to prevent disease?
	Workshop 4: Big data 2 – data storage and analysis For precision medicine to succeed, myriads of data about an individual's genome, epigenome, proteome, metabolome, microbiome, sleep patterns, physical activity, diet and health history need to be incorporated, analysed, simplified and made available to individuals and their treating clinicians. Data security will be imperative. Tracking health

	outcomes over time will inform individuals about their optimal lifestyle for disease prevention. Is this possible? Will health apps be an integral part of the future of medicine?
1pm	**Lunch**
2pm	**Workshop outcomes** Presentations by spokesperson from each workshop to the larger group (15 min per workshop)
3pm	**Summary of findings and discussion of next steps** Professor David James and Dr Samantha Hocking