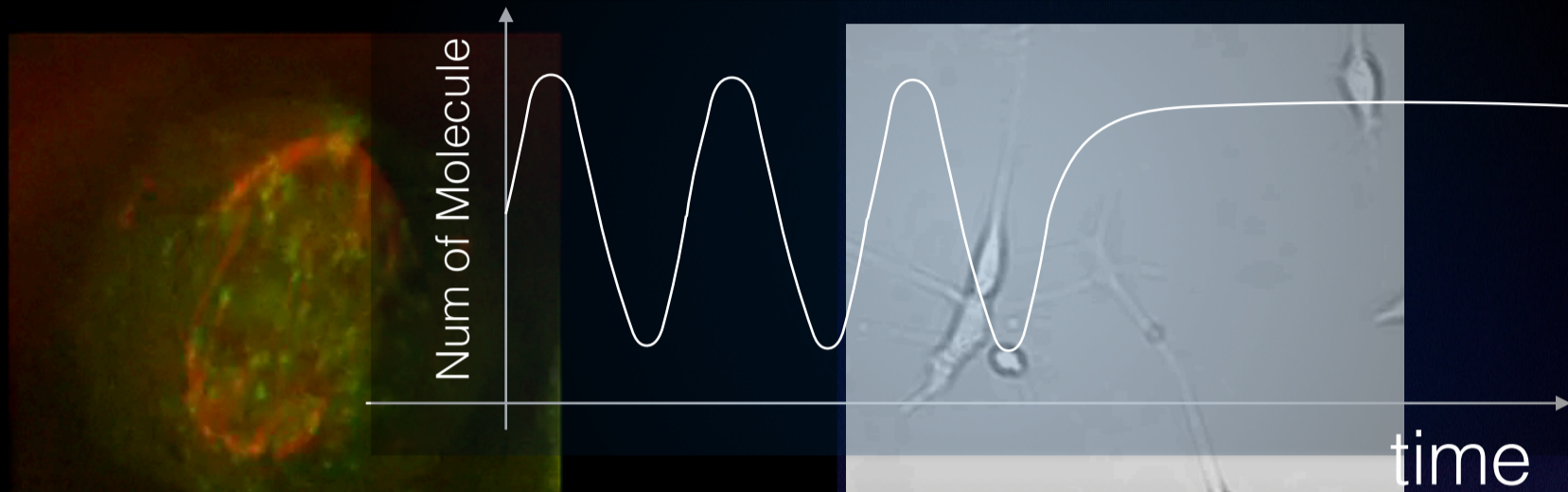


International Workshop on Quantitative Biology 2014

Theatrette 1, the Alan Gilbert Building, University of Melbourne
Australia

12.30pm-4.30pm on 13th Sept. Sat 2014

Admission
Free!



**- Quantitative Modelling connecting
with Bioimage Informatics -**

SPEAKERS

John Lock

(Karolinska Institute, Sweden)

Martina Froehlich

(The Babraham Institute, UK)

Koji Kyoda

(RIKEN QBiC, Japan)

Marcus Kranz

(Humboldt University, Germany)

Akira Funahashi

(Keio University, Japan)

Dr. Neil Killeen & Dr. Noel Faux

(University of Melbourne, Australia)

organised by **Noriko Hiroi**

(Keio University, Japan)

supported by



International Workshop on Quantitative Biology

2014

Saturday 13 September 2014, 1230-1630 hours
Theatrette 1, Alan Gilbert Building, University of Melbourne

The International workshop on Quantitative Biology 2014 focuses on cell imaging and image processing techniques to extract quantitative information from microscopy images.

It will be of particular interest to participants who want to utilise these quantitative information in biochemical/biophysical modelling as well as techniques and methodologies to store and access these information. After the organiser Dr. Noriko Hiroi (Keio University, Japan) giving an introduction to the idea of connecting quantitative modelling and bioimage informatics from the point of view of an experimental biologist, who is trying to develop new imaging tools and analysing methods for *in vivo* oriented modelling, “Quantitative modelling” session will be started by Dr. Marcus Krantz, who is recently promoted to the junior research group leader at Prof. Edda Klipp’s laboratory in Humboldt University, Germany. The topics will be rxncon framework for describing signalling networks.

Dr. John Lock, Karolinska Institute, Sweden, will talk about strategies for characterising plasticity in functional regulatory relationships, including mapping causal influence networks using synchronous multi-scale image quantification of cell migration.

Dr. Martina Fröhlich will give a talk on data repositories, graphical maps and the importance of public open databases of curated models. She will also discuss practical techniques on how to maintain them. Dr. Fröhlich comes from the laboratory of Nicolas Le Novère (Babraham Institute, UK), who is the principal founder of BioModels Database.



(right)
Dr. Funahashi
(Keio University)



Dr. Kyoda
(RIKEN QBiC)



Dr. Killeen
(University of Melbourne)

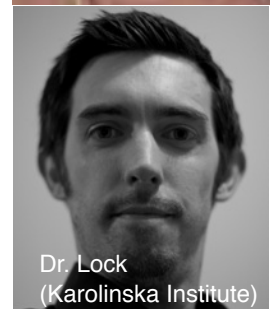
Dr. Akira Funahashi from Keio University, Japan, will open “Bioimage Informatics” session by providing the efficient techniques of image processing that is critical to extract quantitative information from bioimages, also is the unmissable piece to connect experimental results with models, which need to be described in mathematics.

Dr. Koji Kyoda, RIKEN QBiC, Japan will introduce a new open database for representing a variety of quantitative data of biological dynamics and a unified format to representing these data from molecules to organisms. The database also provides microscopy images that were used to generate the quantitative data.

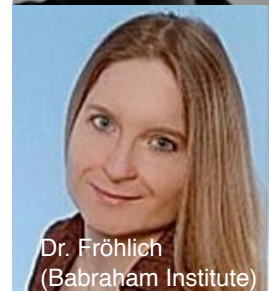
The last talk will consist of two parts, provided by Dr. Neil Killeen, and his colleague, Dr. Noel Faux, University of Melbourne. Dr. Killeen will talk about development and provisioning of imaging informatics capability, and Dr. Faux will connect Dr. Killeen’s point of view to multi-mode bioinformatics which is combining clinical research variables with imaging.



Dr. Krantz
(Humboldt University)



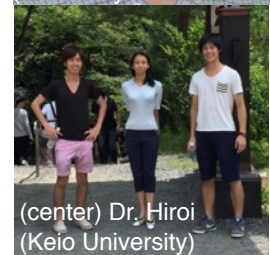
Dr. Lock
(Karolinska Institute)



Dr. Fröhlich
(Babraham Institute)



Dr. Faux
(University of Melbourne)



(center) Dr. Hiroi
(Keio University)

These fascinating talks will be round up with discussion among the attendees at the workshop and online via the Internet. Dr. Viji Draviam (Univ. Cambridge, UK), and Dr. Akatsuki Kimura (NIG, Japan) are invited for the discussion.

This special workshop will be held on the 13th of September 2014, together with the 15th International Conference on Systems Biology in Melbourne, Australia (14th - 18th September 2014). We would like to acknowledge the support provided by VLSCI, Australia and DSP, Japan for organising and holding this workshop.

International Workshop on Quantitative Biology 2014 Program

12:30 ~ 12:45 Opening Remarks & Idea Seminar (Noriko Hiroi)

“Bioimage Informatics; the edge to open the Quantitative view of Biology”

- Quantitative Modelling Session -

12:45 ~ 13:15 Marcus Krantz

“Mapping and modelling complex biological networks from experimental data”

13:15 ~ 13:45 John Lock *keywords:* causal influence, imaging-based quantification

13:45 ~ 14:15 Martina Fröhlich *keywords:* data repository and graphical maps

14:15 ~ 14:30 coffee break

- Bioimage Informatics Session -

14:30 ~ 15:00 Akira Funahashi *keywords:* image processing, quantification of biological parameters

15:00 ~ 15:30 Koji Kyoda *keywords:* bioimage and quantitative data repository,
experimental measurements and simulation results

15:30 ~ 16:00 Neil Killeen and Noel Faux *keywords:* imaging informatics, multi-mode bioinformatics

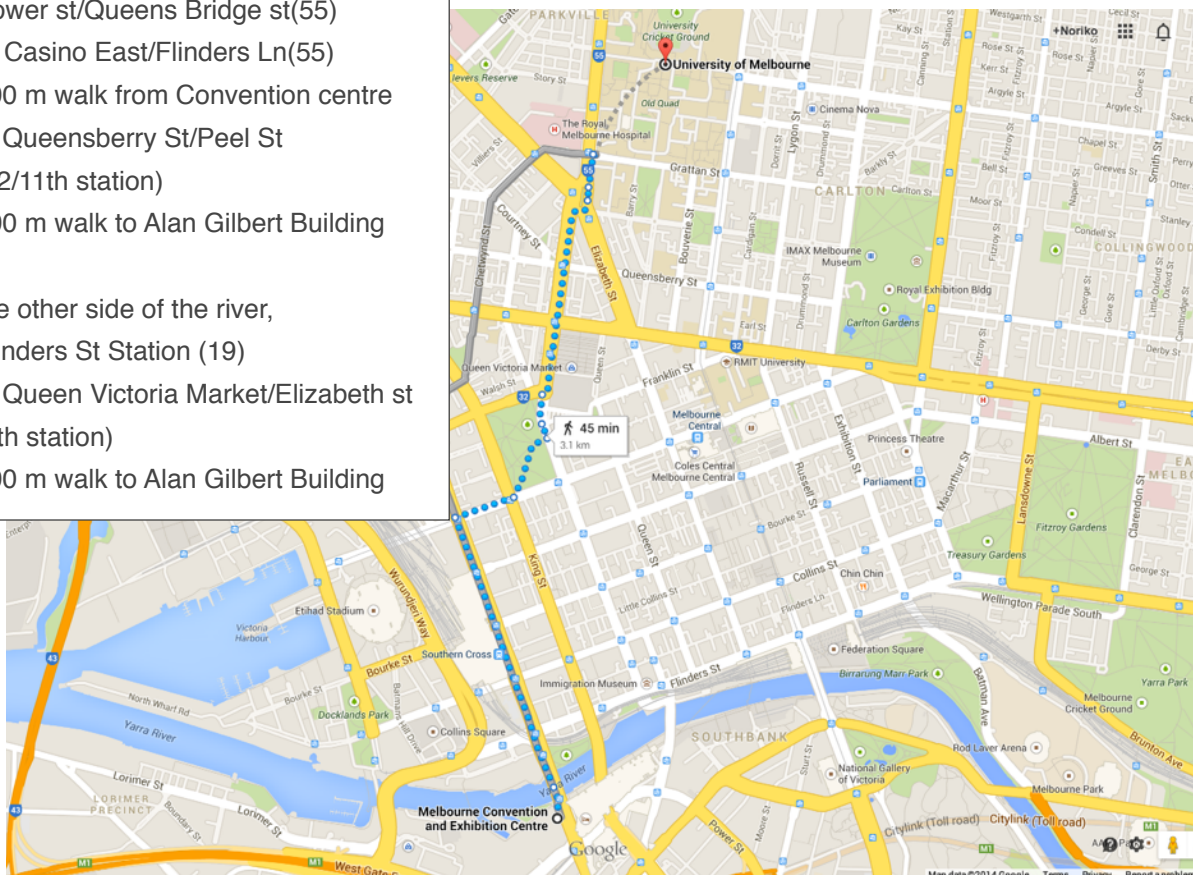
16:00 ~ 16:25 Webinar via Google+ Hangouts

invited attendees: Viji M Draviam, Akatsuki Kimura

16:25 ~ 16:30 Closing Remarks

Power st/Queens Bridge st(55)
or Casino East/Flinders Ln(55)
400 m walk from Convention centre
to Queensberry St/Peel St
(12/11th station)
600 m walk to Alan Gilbert Building

the other side of the river,
Flinders St Station (19)
to Queen Victoria Market/Elizabeth st
(4th station)
500 m walk to Alan Gilbert Building



Many Thanks to Dr. Sarah Boyd (SBI Australia), Ms.Helen Gardiner and Ms. Claudia Curcio(University of Melbourne), Dr. Ken Ho (RIKEN QBiC) for all their kind helps to organize this workshop.