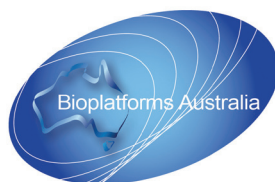


2012/13

# BioInfoSummer

University of Adelaide  
3-7 December 2012





# INTRODUCTION

Championing Bioinformatics to a wider audience

BioinfoSummer is a major annual educational and outreach program aimed to increase understanding and skill levels of bioinformatics among students and early career researchers. The event runs through the generous support of the Australian Mathematical Sciences Institute (AMSI), European Molecular Biology Laboratory (EMBL) Australia and BioPlatforms Australia.

BioinfoSummer 2012 was hosted by the School of Mathematical Sciences and the School of Molecular and Biomedical Science at the University of Adelaide. The program for 2012 featured:

- Introductory lectures on statistics, biology and bioinformatics
- Keynote talks by leading national and international researchers
- A sequence of hands-on practicals aligned to the daily themes
- Panel discussions with the keynote speaker

## Program Committee

- Terry Speed, The Walter and Eliza Hall Institute (Chair)
- David Adelson, The University of Adelaide
- Conrad Burden, Australian National University
- Sylvain Foret, Australian National University
- Bruno Gaeta, The University of New South Wales
- Gary Glonek, The University of Adelaide
- Andrew Lonie, The University of Melbourne
- David Lovell, CSIRO
- Jonathan Keith, Monash University
- Jane McCausland, Monash University
- Geoff McLachlan, The University of Queensland

## Organising Committee

- David Adelson, The University of Adelaide
- (Co-chair)
- Gary Glonek, The University of Adelaide
- (Co-chair)
- Cathy Abbott, The Flinders University of South Australia
- Ute Baumann, The University of Adelaide
- Stephen Bent, The University of Adelaide
- Wade Hines, The Australian Wine Research Institute
- Inge Koch, The University of Adelaide
- Dan Kortschak, The University of Adelaide
- Stan Miklavcic, The University of South Australia
- Andreas Schreiber, The University of Adelaide
- Simon Tuke, The University of Adelaide

**“One of the most useful conferences I’ve been to in a long time. Perfect for what I need.”**

*- Patrick Laffy*



## EVENT FEEDBACK

“The symposium gave me the chance to network in similar fields of study to my own future career choices (and completely different). As a 3rd year undergrad I was able to gain a lot of insight into their careers and receive relevant and useful advice that I can apply to the rest of my academic career and professional future. It was the perfect way to end the 2012 academic year!”

*- Tamara Burt*

“BioInfoSummer was a brilliant introduction to the field of bioinformatics, providing an engaging cross-section of current directions and a flavour of things to come. I have left stimulated and excited about my future in the field.”

*- Jake Parker*

“It was really nice to be immersed in an environment where everyone was hungry to learn, biologists wanting to learn + understand bioinformatics and bioinformaticians wanting to learn more biology. It was a very supportive environment to be in.”

“I have learned a lot over this week. I hope this continues over the years and gets more success and recognition worldwide. Different topics on different days provided a little something for everyone, which was great!”

“Bioinfosummer continues to be one the shining stars in Australia’s bioinformatics calendar. The 2012 meeting was a great opportunity for bioinformaticians, would-be bioinformaticians and bioscientists of all persuasions to meet, learn and enjoy.”

*- David Lovell*

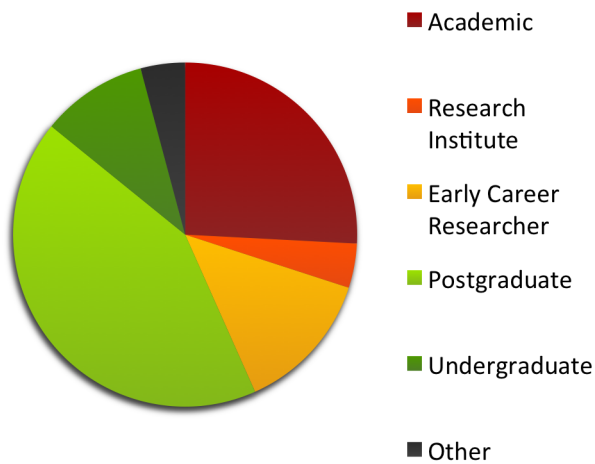
“Generally the week was fascinating and informative. A great opportunity.

“I learnt a lot and had a really good time.”

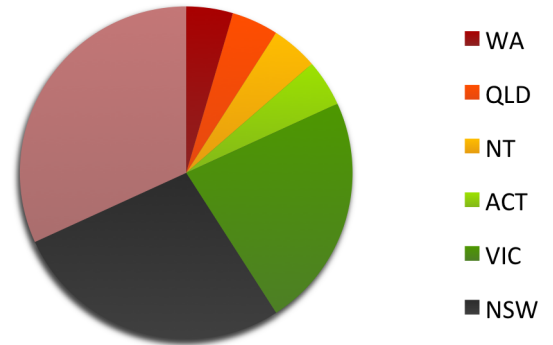
*- Lyron Winderbaum*

# PARTICIPANTS

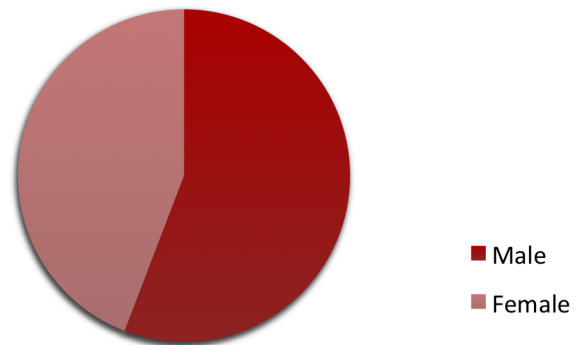
**BREAKDOWN BY ENROLMENT STATUS**



**BREAKDOWN BY STATE**



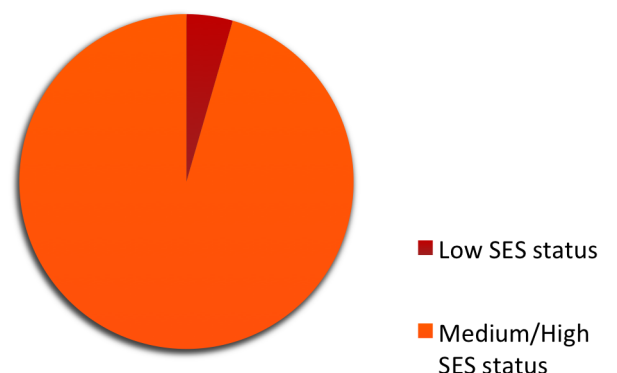
**BREAKDOWN BY GENDER**



**BREAKDOWN BY UNIVERSITY/ORGANISATION**

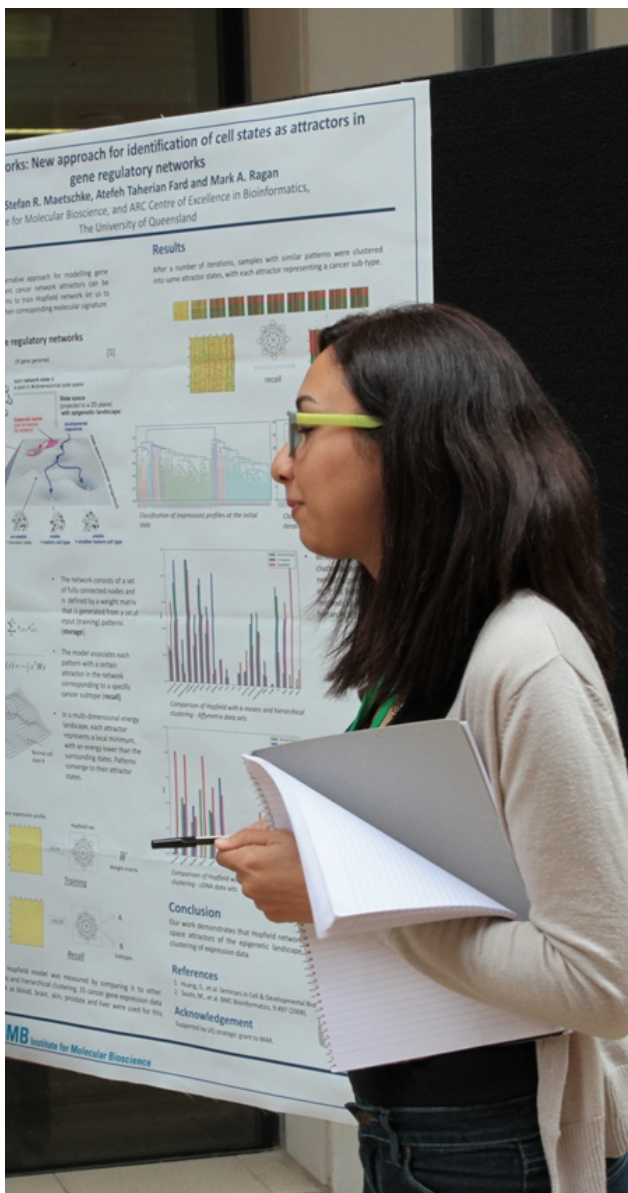
ACRF Cancer Genome Facility	2
Australian National University	4
AWRI	1
Charles Darwin University	1
CSIRO	3
Deakin University	3
Garvan Institute	1
IMVS	1
Monash University	1
Swinburne University	1
The Flinders University of South Australia	15
The University of Adelaide	65
The University of New South Wales	5
The University of Queensland	4
The University of South Australia	3
The University of Sydney	3
The University of Western Sydney	2
University of Technology Sydney	1
Vaxine Pty Ltd	1
WA Institute of Medical Research	1
WEHI	1
Westmead Children's Hospital	1
<b>Total</b>	<b>120</b>

**BREAKDOWN BY SES STATUS**



## ABORIGINAL AND TORRES STRAIGHT ISLANDER PARTICIPATION

Number of Aboriginal and Torres Strait Islander participants: 1



## EVENT HIGHLIGHTS

### OPENING

BioInfoSummer2012 was officially opened by the South Australian Chief Scientist, Professor Don Bursill AM.



### SYMPOSIUM BARBECUE

On Thursday 6 December attendees enjoyed talking about the events of the week over food and drinks at the symposium BBQ.



### PUBLIC LECTURE: PROFESSOR HAMISH SCOTT

Professor Hamish Scott from the Centre for Cancer Biology, SA Pathology gave a public lecture on Tuesday 4 December. He talked about the history of human genetics and genomics and the rise of bioinformatics with new genome technologies in genetics research and clinical practice. Over 200 people attended the lecture, and networking reception.

### STUDENT TRAVEL AWARDS

EMBL Australia and BioPlatforms annually offer travel support for students to attend the event. This year 14 students and early career researchers received Travel Awards.



# DIRECTOR REPORT

The BioinfoSummer 2012 program featured an outstanding array of Australian and international keynote speakers including Dr Karl Clauser from the Broad Institute, Dr Martin Frith from the Computational Biology Research Center, AIST, Japan, Dr Suhita Nadkarni from the Indian Institute of Science Education and Research, Professor Gordon Smyth from the Walter and Eliza Hall Institute and Professor Fuli Yu from Baylor College of Medicine.

The conference opened on the Monday with an address by the South Australian Chief Scientist, Professor Don Bursill AM, and featured keynote addresses by Karl Clauser and Gordon Smyth. Introductory sessions on Statistics for Biologists and Biology and Bioinformatics set the scene for the rest of the week.

The themes for the four major days of the symposium were DNA-based bioinformatics, proteomics, computational biology and programming for biologists. The program for each day comprised a blend of lectures from invited and local speakers as well as hands-on practical computing sessions. Participants also had the opportunity to discuss research questions with the invited speakers in a series of informal panel sessions. The daily prize for the best question led to very stimulating discussions in the question times. A bioinformatics programming competition run throughout the week generated great interest and many impressive entries.

On the Tuesday night, Professor Hamish Scott presented a public lecture on “The history of human genetics and genomics: The rise of bioinformatics with new genome technologies in genetics research and clinical practice”. The lecture was very well attended and generated much interesting discussion in the question time and the reception that followed.

The Thursday afternoon poster session gave delegates the chance to showcase their own research with prizes going to Stephen Pederson and Cheong Xin Chan. Following the poster session, participants adjourned to the rooftop plaza of the recently completed Ingkarni Wardli Building to enjoy a barbecue on a perfect November evening.

The organisers are very grateful to the many staff and students who contributed to the smooth running and success of this event and for especially the tireless efforts of Imelda Leavy and Simi Henderson.

*- Gary Glonek, The University of Adelaide*

“...a great opportunity for bioinformaticians, would-be bioinformaticians and bioscientists of all persuasions to meet, learn and enjoy”

*- David Lovell*

# FEATURED LECTURES



**DR KARL CLAUSER**  
**BROAD INSTITUTE, CAMBRIDGE, MASSACHUSETTS**

How to build a semi-dry proteomics bioinformatician from a biology background



**PROFESSOR HAMISH SCOTT**  
**THE UNIVERSITY OF ADELAIDE**

The history of human genetics and genomics: The rise of bioinformatics with new genome technologies in genetics research and clinical practice



**PROFESSOR FULI YU**  
**BAYLOR COLLEGE OF MEDICINE, HOUSTON, TEXAS**

Integrative Analysis of 1000 genomes data



**PROFESSOR GORDON SMYTH**  
**WALTER AND ELIZA HALL INSTITUTE OF MEDICAL RESEARCH, MELBOURNE**

Differential expression analysis of RNA seq read counts

# PROGRAM



## **MONDAY 3 DECEMBER** **INTRODUCTION TO BIOLOGY AND BIOINFORMATICS**

A general introduction of biology for attendees with mathematics, statistics and computer science backgrounds. Also covering introductory statistics for participants



## **TUESDAY 4 DECEMBER** **DNA BASED BIOINFORMATICS**

Computational tools for next-generation sequencing data analysis



## **WEDNESDAY 5 DECEMBER** **PROTEOMICS**

Bioinformatic and biostatistical methods used in the study of proteins and metabolites using mass spectrometry.



## **THURSDAY 6 DECEMBER** **COMPUTATIONAL BIOLOGY**

The development and application of data-analytical and theoretical methods, mathematical modeling and computational simulation techniques to the study of biological, behavioral, and social systems.



## **FRIDAY 7 DECEMBER** **PROGRAMMING FOR BIOLOGISTS**

Covering the practical side of programming necessary for conducting research in



## Australian Mathematical Sciences Institute

Simi Henderson  
Research and Higher Education Manager  
c/o University of Melbourne VIC 3010

[simi@amsi.org.au](mailto:simi@amsi.org.au)  
[www.amsi.org.au](http://www.amsi.org.au)

