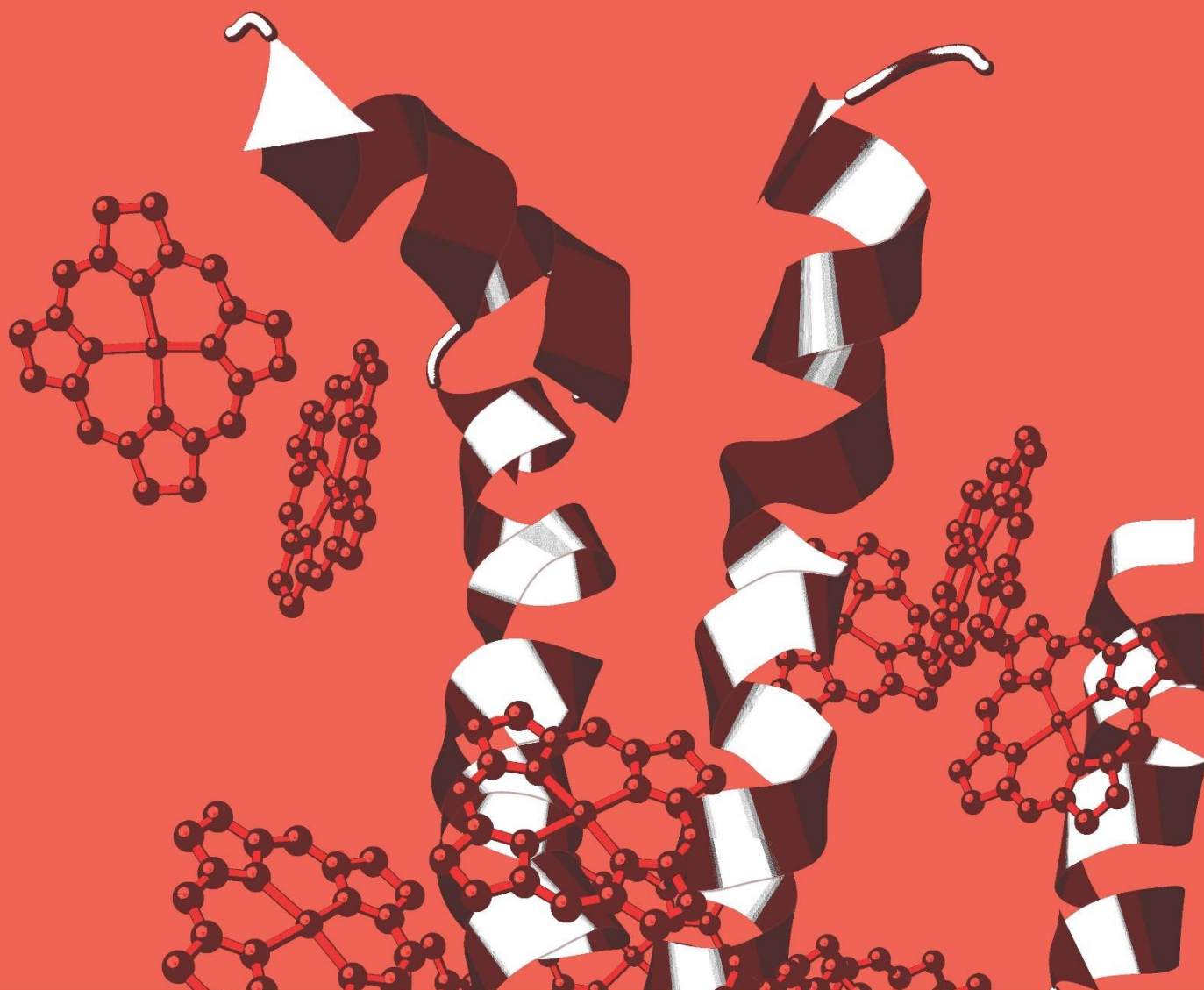


AMSI
BIOINFO
SUMMER **17**

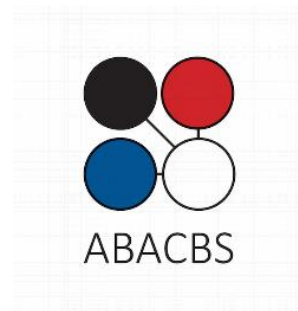
A SYMPOSIUM IN BIOINFORMATICS

4-8 DEC 2017 **MONASH UNIVERSITY, CAULFIELD CAMPUS**

EVENT REPORT



AMSI BioInfoSummer 2017 would like to thank the following sponsors for their support:



AMSI BioInfoSummer 2017

Symposium in Bioinformatics

Monash University | 4-8 December 2017

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FOREWORD

AMSI BioInfoSummer is Australia's leading bioinformatics and mathematical and computational biology training event. Aimed at undergraduate and postgraduate students, researchers and professionals, it aims to foster Australia's bioinformatics and computational biology research capability. In 2017, AMSI BioInfoSummer was hosted by Monash University from 4-8 December. Over 170 students, researchers, academics and professionals gathered for the five-day program to increase their knowledge and skills in this truly interdisciplinary field.

“BioInfoSummer is an important part of Australia's ongoing training to build the mathematical workforce and position Australia as a STEM innovation leader”

Professor Geoff Prince
AMSI Director

Bioinformatics is an exciting discipline analysing and simulating both the structures and processes of biological systems. It is a constantly evolving field that offers researchers and students a wide breadth of opportunities. The 2017 program commenced with an introduction to bioinformatics on day one followed by four days of specialised content focused on visualisation, modelling and analysis, RNA-seq, proteomics and metabolomics and single-cell genomics.

The symposium was opened by BioInfoSummer founder, Professor Susan Wilson (The University of New South Wales) who was introduced by Professor Geoff Prince (AMSI). Following the opening, Associate Professor David Powell (Monash University and AMSI BioInfoSummer 2017 Event Director) introduced Professor Melanie Bahlo (Walter & Eliza Hall Institute of Medical Research) who gave the keynote presentation titled “Bioinformatics: just pipelines, isn't it?”

Over the course of the week, attendees got to hear from 24 national speakers and 3 international speakers including Professor Steve Rozen (Duke-NUS Medical School Singapore), Dr Michael Lawrence (Genentech, USA) and Dr Tallulah Andrews (The Wellcome Trust Sanger Institute, UK) as well as 5 workshop presenters. To compliment the scientific program, additional program extras and networking events were incorporated into the symposium for delegates to maximise their AMSI BioInfoSummer experience.

*AMSI BioInfoSummer 2017 was jointly funded by the Australian Mathematical Sciences Institute and the Australian Government's Department of Education and Training, with support from Monash University, the BHP Billiton Foundation through the CHOOSE**MATHS** program, ABACBS and MAXIMA. AMSI BioInfoSummer is part of the Institute's Securing Australia's Mathematical Workforce project.*



DIRECTOR'S REPORT

Associate Professor David Powell

Monash University

BioInfoSummer 2017 was held at Monash University and hosted by the Monash Bioinformatics Platform with over 170 attendees for the five-day event. The symposium included scientific presentations, hands-on workshops and networking opportunities. It was great to see the attendees engrossed in many productive discussions over the morning and afternoon tea breaks. Attendees included a mix of postgraduate students, early career researchers and established postdocs interested in the interdisciplinary area of bioinformatics.

The scientific program was diverse covering many areas of bioinformatics with major themes in visualisation, modelling and analysis; proteomics and metabolomics; single-cell genomics; clinical bioinformatics; and open science. The program was delivered by 25 national speakers and 3 international speakers including Professor Steve Rozen (Duke-NUS Medical School Singapore), Dr Michael Lawrence (Genentech) and Dr Tallulah Andrews (Sanger Institute).

The symposium was opened by Professor Sue Wilson who has been involved in BioInfoSummer since starting the event in 2003 presenting an interesting perspective on the changes over those 15 years. The opening lecture was delivered by Professor Melanie Bahlo giving the audience an introduction to bioinformatics and why it is more than “just pipelines”, and the push toward better reproducibility.

Several hands-on workshops were given through the week including introduction to Python programming; visualisation in Python; RNA-seq analysis; and metabolomics analysis. The workshops were at capacity before the event began, and feedback from the attendees displayed how well appreciated these hands-on trainings are.

The public lecture was delivered by Professor John Mattick (Garvan Institute) on “Genomics Big Data and the future of medical research and healthcare”. This evening lecture attracted many BioInfoSummer attendees and several people from the wider community. Interest in the topic provided much interesting discussion, with questions going on late into the evening.

A careers panel was organised in conjunction by the COMBINE student group with a mixed panel representing academia and industry. There were many great questions from the attendees about navigating a career in bioinformatics and very useful suggestions from the panel on how students and early careers researchers need to develop their skills to prepare for the future.

This year, BioInfoSummer included a lunch event themed on “Celebrating Diversity in STEM” to promote discussion on the importance of diversity, and how to encourage it in practice. The gender balance of attendees at BioInfoSummer was essentially even, and the organising committee also ensured the program was balanced.

PROGRAM

MONDAY 4 DECEMBER

Introduction to bioinformatics

Bioinformatics introduction

Concurrent biology introduction and statistics introduction

TUESDAY 5 DECEMBER

Visualisation, modelling & analysis

Workshop on data visualisation

Posters and lightning talks

WEDNESDAY 6 DECEMBER

RNA-seq theory and practice

RNA-seq theory and practice

Workshop on RNA-seq analysis

THURSDAY 7 DECEMBER

Proteomics and metabolomics data

Introduction to proteomics & metabolomics data

Clinical bioinformatics & variant calling for disease

FRIDAY 8 DECEMBER

Single-cell genomics

Introduction to single-cell genomics

Open Science, bioinformatics on clouds

SPEAKERS

SPEAKER	TITLE	ORGANISATION
Dr Mirana Ramialison Associate Professor Jose Polo	I've got my list of differentially expressed genes, now what? Exploring the boundaries of transcription factor-mediated reprogramming	Australian Regenerative Medicine Institute, Monash University
Professor Christine Wells Professor Steve Rozen	The molecular atlas – transcriptomes from tissues to single cells. Computational analysis of mutations in tumors reveals unexpected carcinogenic exposures	Centre for Stem Cell Systems, The University of Melbourne Duke-NUS Medical School Singapore
Beth Signal Dr Mark Cowley	Machine Learning in Genetics Translating genomics to the clinic for rare and advanced cancers	Garvan Institute of Medical Research
Dr Michael Lawrence Dr Joseph Powell	An Introduction to Bioconductor Using ultra high-throughput single cell sequencing to understanding cellular heterogeneity	Genentech, USA Institute for Molecular Bioscience, The University of Queensland
Dr Saravanan Dayalan Dr Mark Flegg	Metabolomics Bioinformatics - Current State and Future Challenges The people that paved the way for biological insight through mathematics	Metabolomics Australia, The University of Melbourne Monash University
Professor Dianne Cook Professor John Bowman	“How do you see if you don't see”: using randomisation with plots to explore 'omics data Lessons from the Marchantia genome	
Dr Lan Nguyen	Identification of effective combinatorial therapies for cancer using integrated pathway modelling	

“The lectures were fantastic, varied and accessible for students of all backgrounds.”

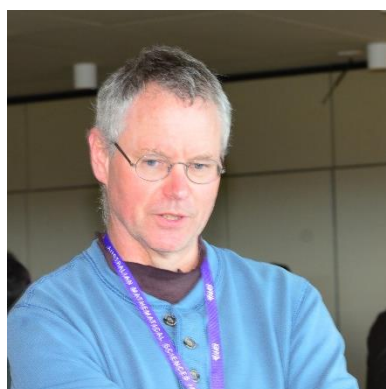
Steve Monger
The University of Adelaide



SPEAKER	TITLE	ORGANISATION
Associate Professor Alicia Oshlack	Designing and analysing single-cell RNA sequencing experiments	Murdoch Children’s Research Institute
Dr Nicola Armstrong	Statistics in biology	Murdoch University
Dr Ralf Schittenhelm	Mass spectrometry, proteomics and more	Proteomics Platform, Monash University
Dr Ann-Marie Patch	Detecting somatic variants in cancers using whole genome sequencing	QIMR Berghofer Medical Research Institute
Dr Jeff Christiansen	Data driven science in biology: a brief view into the many resources available to help you	Queensland Cyber Infrastructure Foundation & The University of Queensland
Dr Sriganesh Srihari	An introduction of molecular network analysis	South Australian Health and Medical Research Institute
Associate Professor Andrew Lonie	Developing national bioinformatics infrastructure	The University of Melbourne, Melbourne Bioinformatics and EMBL-Australia Bioinformatics Resource
Dr Tallulah Andrews	From cell-type to function using single-cell RNA sequencing	The Wellcome Trust Sanger Institute, UK
Dr Tamara Heck	Open Science – one goal, many perspectives	University of Southern Queensland
Dr Sebastian Lunke	Translating research: How is it done, why is it important, and what are the impacts?	Victorian Clinical Genetics Services
Dr Melissa Davis	Introduction to pathway and network analysis	Walter & Eliza Hall Institute of Medical Research
Dr Saskia Freytag	Bioinformatics, the honest trailer	
Professor Gordon Smyth	Statistical analysis of RNA-seq data: from reads to genes to pathways	
Professor Melanie Bahlo	Bioinformatics: just pipelines, isn’t it?	

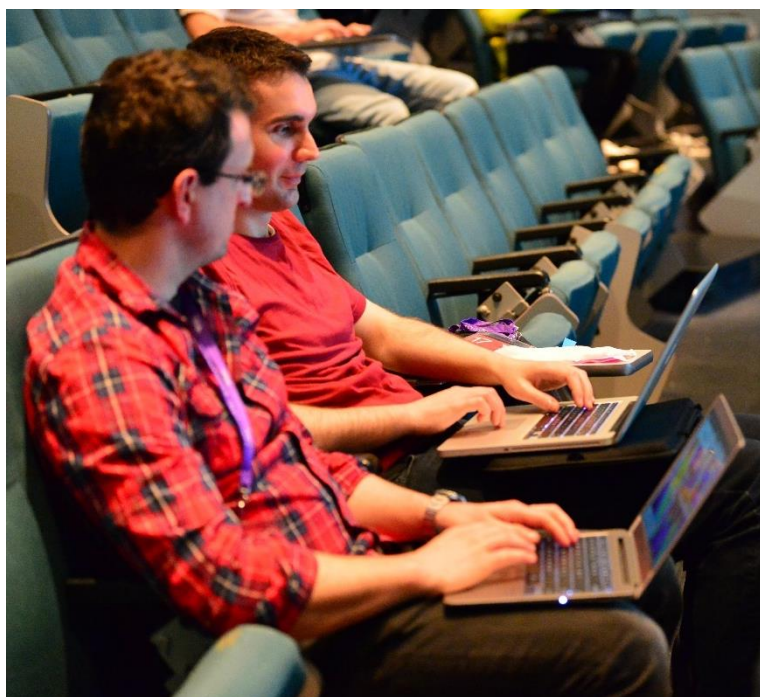
“The speaker line up was sensational”

Nick Wong
Monash University



WORKSHOPS

TITLE	WORKSHOP LEADER/S
Data visualisation with Python and the Jupyter Notebook RNAseq via GVL+ degust demo	Dr Claire Sloggett Melbourne Bioinformatics
Introduction to Python programming	Dr Andrew Perry Monash University
Introduction to statistical analysis of metabolomics data	Dr Alysha De Livera The University of Melbourne Dr Kaushala Jayawardana Baker Heart & Diabetes Institute



I enjoyed the “hands-on workshops and introductions to modern techniques, like the single-cell talks... The workshop content will be immediately useful at my work and in my studies.”

Samuel Gardiner
Macquarie University

PARTICIPANT BREAKDOWN

UNIVERSITY/INSTITUTION		GENDER		
Australian Regenerative Medicine Institute	1	Female	90	51%
Australian National University	5	Male	88	49%
Baker IDI Heart and Diabetes Institute	1	ATSI STATUS		
Deakin University	6	Yes	0	0%
Defence Science and Technology Group	1	No	145	82%
Duke NUS Medical School (Singapore)	1	Undisclosed	33	18%
Federation University Australia	1	STATE/TERRITORY		
Flinders University	4	ACT	4	2%
Garvan Institute of Medical Research	2	NSW	17	10%
Genentech (USA)	1	QLD	14	8%
James Cook University	4	SA	10	6%
La Trobe University	1	TAS	1	1%
Macquarie University	1	VIC	122	68%
Medtimes Laboratory Ltd (Hong Kong)	1	WA	2	1%
Melbourne Bioinformatics	1	International	8	4%
Monash University	65	ACADEMIC STATUS		
Murdoch Childrens Research Institute	1	Academic	41	23%
Murdoch University	2	Early Career Researcher	12	7%
QIMR Berghofer Medical Research Institute	1	Honours	14	8%
Queensland University of Technology	1	Industry	2	1%
RMIT University	6	Masters	20	11%
South Australian Health & Medical Research Institute	1	PhD	63	36%
The University of Adelaide	5	Research Institute	15	8%
The University of Auckland	1	Undergraduate	11	6%
The University of Melbourne	37	RESIDENCY STATUS		
The University of New South Wales	5	Australian Citizen	106	60%
The University of Queensland	6	Not an Australian Resident	9	5%
The University of Sydney	7	Permanent Resident	12	7%
The Wellcome Trust Sanger Institute (UK)	1	Student Visa	38	21%
University of Southern Queensland	2	Other	13	7%
University of Technology Sydney	2	TOTAL		
Walter & Eliza Hall Institute of Medical Research	3		178	
Western Sydney University	1			

“It was also great to have such a diversity of backgrounds amongst the speakers and attendees.”

Jennie Louise
The University of Adelaide

GRANTS

AMSI TRAVEL GRANTS

AMSI Travel Grants support undergraduate and postgraduate students to build and extend their skills and professional networks at AMSI BioInfoSummer by providing travel support to participate in the AMSI Higher Education Flagship programs.

In 2017, nine students and early career researchers from six AMSI Member Institutions were awarded travel grants:

- James Galbraith
The University of Adelaide
- Samuel Gardiner
Macquarie University
- Steve Monger
The University of Adelaide
- Savit Prabhu
Australian National University
- Mitchell O'Brien
The University of Sydney
- Robert Qiao
Flinders University
- Jonathan Roco
Australian National University
- Andy Tran
The University of Sydney
- Hon Lun Wong
The University of New South Wales

“AMSI travel grants are particularly important for students from a less central location like myself, as they provide essential financial support and encouragement for us to participate in national events.”

Robert Qiao
Flinders University

CHOOSEMATHS GRANTS

CHOOSEMATHS Grants are designed to provide full or partial support for Australian female mathematical sciences students and early career researchers to participate in the AMSI Higher Education Flagship programs. The grants support women to build and extend their skills and professional networks by providing financial support to attend and/or assist with caring responsibilities. The Awards are funded by BHP Billiton Foundation and are an initiative of the CHOOSEMATHS Project.



**CHOOSE
MATHS**

In 2017, 12 female students and early career researchers from 10 AMSI Member Institutions were awarded a **CHOOSEMATHS** grant:

- Jasmine Bermas
The University of New South Wales
- Bobbie Cansdale
The University of Sydney
- Chi Cao
Murdoch University
- Catisha Coburn
The University of Adelaide
- Charmaine Enculescu
The University of Queensland
- Daniela Gaio
University of Technology Sydney
- Carmel Maher
Flinders University
- Loan Nguyen
The University of Queensland
- Tahlia Perry
The University of Adelaide
- Emily Plant
University of Southern Queensland
- Georgie Samaha
The University of Sydney
- Brooke Whitelaw
James Cook University

The recipients had the chance to find out more about the **CHOOSEMATHS** program and meet other grant winners and female attendees at a **CHOOSEMATHS** networking lunch held on Monday 4 December.



“Receiving a **CHOOSEMATHS** Grant meant more than just financial support, it has proven to me that AMSI has made a conscious effort to create balance to bring awareness that we, as women, are equally valued as men in this field.”

Jasmine Bermas
The University of New South Wales

PROGRAM EXTRAS

WELCOME LUNCH AND RECEPTION

Two welcome events were held on the first day of the conference – an informal lunch following Professor Melanie Bahlo’s opening keynote presentation and an evening cocktail reception at the conclusion of day one. These events provided attendees with the opportunity to meet new people and network with professionals and students in fields relevant to their areas of research or interest in a casual social setting.

“I enjoyed being able to meet a variety of people from different backgrounds but with similar interests.”

Bobbie Cansdale
The University of Sydney

DIVERSITY IN STEM NETWORKING LUNCH



A second networking lunch was held at Monash University on day two of the conference with the theme of Celebrating Diversity in STEM. Attendees were encouraged to think about and discuss the importance of diversity and how to encourage it in practice. The Event Director opened discussions with a few short remarks about gender balance at the conference and the wider mathematical sciences community.

POSTER COMPETITION

Thirteen delegates, keen to share their work in the bioinformatics space with the conference attendees, submitted abstracts for the Poster Competition which was held on Tuesday 5 December. Each poster presenter was given the opportunity to spruik their poster in under 2 minutes as part of the Lighting Poster Talks with the aim of getting people interested in speaking to them about their poster in detail during the afternoon tea and poster question and answer session which followed.

A panel of judges determined two winners for Best Poster;

- **Edward Kerr, The University of Queensland**
A proteomic approach to understand protein abundance and modifications in beer brewing
- **Tahlia Perry, The University of Adelaide**
First Differential Gene Expression Analysis between Juvenile and Adult Echidnas



“Presenting the poster allowed me to showcase my work and helped immensely with networking. Having this opportunity to share my research was incredibly powerful in terms of furthering my skills for a career in sciences.”

Tahlia Perry
The University of Adelaide

PUBLIC LECTURE

Professor John Mattick AO from the Garvan Institute of Medical Research delivered this year’s AMSI BioInfoSummer Public Lecture to over 130 attendees on Wednesday 6 December. BioInfoSummer registrants were joined by interested members of the general public to hear Professor Mattick present on “Genomics, Big Data and the Future of Medical Research and Healthcare.” This topic proved popular with lots of insightful discussions going on well into the evening.

COMBINE CAREERS SESSION



The last networking event for the week was the COMBINE careers session held at the Racecourse Hotel on Thursday 7 December. Organised in partnership with the Monash University COMBINE (the student-run Australian organisation for students in computational biology, bioinformatics, and related fields) representative, the evening showcased career opportunities in bioinformatics and provided a forum for discussion around the different careers pathways.

Audience members took the opportunity to ask plenty of questions of the diverse panel which included;

- **Dr Mark Cowley**, Garvan Institute of Medical Research, Sydney
- **Dr Tallulah Andrews**, The Wellcome Trust Sanger Institute, UK
- **Dr Michael Lawrence**, Genentech, USA
- **Dr Saravanan Dayalan**, Metabolomics Australia, The University of Melbourne
- **Dr Traude Beilharz**, Monash University, Melbourne

The audience also heard from Fiona Druitt, AMSI Business Development Officer (VIC) on the opportunities available through the AMSI Intern program.

“Not many conferences or workshops have a Careers Session where students and professors can openly talk about personal experiences and the new challenges in the field. In my opinion it was one of the best initiatives in this program.”

Jonathan Roco
Australian National University

FEEDBACK

52%

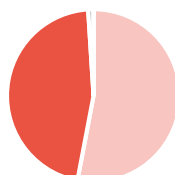
Fifty-two per cent of paid attendees at AMSI BioInfoSummer 2017 completed the online survey to provide their feedback and comments on the event.

8.3

In rating their overall experience at the event on a scale of 1 to 10, where 1 is poor and 10 is excellent, the respondents' average rating was 8.3.

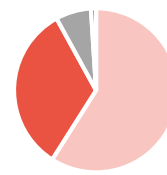
BIOINFOSUMMER WAS OF A HIGH STANDARD

Strongly Agree	53%
Agree	46%
Neutral	1%
Disagree	0%
Strongly Disagree	0%



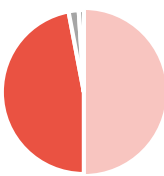
BIOINFOSUMMER WAS WELL ORGANISED

Strongly Agree	59%
Agree	33%
Neutral	7%
Disagree	1%
Strongly Disagree	0%



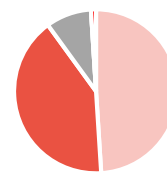
THE PRESENTATIONS WERE PROFESSIONAL AND ENGAGING

Strongly Agree	50%
Agree	47%
Neutral	2%
Disagree	1%
Strongly Disagree	0%



I FOUND THE SOCIAL EVENTS A GOOD OPPORTUNITY TO NETWORK

Strongly Agree	49%
Agree	41%
Neutral	9%
Disagree	0%
Strongly Disagree	1%



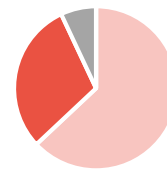
THE CONTENT PRESENTED WAS RELEVANT TO MY STUDY/PROFESSION

Strongly Agree	37%
Agree	51%
Neutral	11%
Disagree	0%
Strongly Disagree	1%



I WOULD RECOMMEND BIOINFOSUMMER TO OTHERS

Strongly Agree	63%
Agree	30%
Neutral	7%
Disagree	0%
Strongly Disagree	0%



STUDENT PROFILE



The Mathematics of Echidnas

Tahlia Perry, The University of Adelaide

University of Adelaide PhD student and Australian Mathematical Sciences Institute (AMSI) BioInfoSummer (BIS) 2017 attendee, Tahlia Perry is on a mission to help save Australia's beloved echidnas. Analysing and manipulating large datasets and using complex mathematical models, she hopes to identify and compare reproductive genes being turned off and on in both adult and juvenile echidnas.

"By identifying these genes, I can piece together the pathways that become active and control their reproduction and development," she says.

With some echidna populations now endangered, these insights into their reproductive biology are essential, and can lead to aiding the success of Australian breeding programs.

Eager to expand her knowledge and share her PhD research, Tahlia was excited when she found out about the opportunities at leading Australian Postgraduate bioinformatics training school, BIS. With this year's event at Monash University in Melbourne, travel and accommodation costs threatened to put the brakes on her attendance. Thanks to the assistance of a **CHOOSEMATHS** Grant, she was able to make her BIS dream a reality.

"Coming from interstate, this grant was incredibly important to assist with both travel and accommodation so I could fully attend BioInfoSummer 2017," Tahlia explains.

Providing a rare glimpse into the breadth of her field that reframed approaches to her own research, the event was a rare opportunity for Tahlia to network and build her research profile.

"BIS was immensely helpful in giving direction to my research and confirming I am on the right track with my analyses. It also gave me a new-found perspective of how varied the field is and an appreciation of how maths really is everywhere in various forms," she says.

Having come close to not being able to attend, Tahlia was determined to get the most from the event and her **CHOOSEMATHS** grant. This included sharing her work in a poster submission that took out top honours.

"Having this opportunity to share my research and winning Best Poster was a confidence boost and confirmation I am heading in the right direction with both my research and communication skills," says Tahlia.

As she applies her new knowledge and confidence to her research, all signs point to a big win for some seriously cute and precious Australians.

PUBLIC LECTURE PART OF **AMSI BIOINFOSUMMER 17**

GENOMICS BIG DATA

AND THE FUTURE OF MEDICAL RESEARCH AND HEALTHCARE

FREE ADMISSION 6PM WED 6 DEC 2017
THEATRE K309 MONASH UNIVERSITY CAULFIELD

PROF. JOHN MATTICK AO FAA FAHMS FRCPA
GARVAN INSTITUTE OF MEDICAL RESEARCH



THE FASTEST TECHNOLOGICAL ADVANCE IN HISTORY has reduced the cost of human genome sequencing dramatically ushering in a new era of personalised medicine and 'precision' healthcare.

Soon individual genome sequences will be a standard part of health records—revolutionising the health system management. Genome sequences integrated with clinical records and information from personal devices will create a multi-dimensional data ecology that will require advanced systems to secure the data and enable its analysis by machine learning and artificial intelligence.

Find out how Australia can lead this revolution.

REGISTER BIS.AMSI.ORG.AU/PUBLIC-LECTURE



AMSI RESEARCH

MEDIA RELEASE

Genes Reveal Recipe for Good Health

Melbourne, Victoria

Tuesday 28 November 2017

The incorporation of personal genomic information into patient records would see Australians live healthier lives for longer, according to 2017 Australian Mathematical Sciences Institute (AMSI) BioInfoSummer Public Lecturer and Executive Director of the Garvan Institute of Medical Research, Professor John Mattick AO.

Professor Mattick believes routine access to this information will one day provide a treasure trove of information that will lead the complete transformation of medicine.

“Many of the diseases and health challenges currently burdening our health system will be prevented or caught in the early stages, reducing costs and care needed,” says Professor Mattick.

Limited testing for specific diseases has already shown the benefits of genome sequencing to diagnose genetic conditions and advise on disease risk, and the capability to look at the whole genome is set to be a game changer.

“A full picture of a person’s biology and predisposition to disease would open up the opportunity to act early and prevent or cure diseases. Knowing a patient is at risk for cancer or genetic cardiac disease for example, provides opportunity for early interventions such as a pacemaker to prevent cardiac arrest or regular screening for cancer in high-risk individuals,” says Professor Mattick.

Insights into genetic risks and individual biology may also reduce hospitalisations from prescription drug reactions. Knowing a patient’s likely response to therapies may open the way for personalised regimes that ensure safety and effectiveness.

“A repertoire of enzymes determines how fast we clear foreign compounds. Too slow and they can reach toxic levels, too fast and the drug won’t work. Having this information means we can prescribe accordingly,” says Professor Mattick.

Away from the bedside, this integration of genomics with clinical and other data, for example from personal devices, will revolutionise medical research and the management of the healthcare system, Professor Mattick believes. It will create enormous opportunities for innovation and radically advance our understanding of what it is to be human.

“Mathematics such as biostatistics and bioinformatics, as well as machine learning and artificial intelligence, will be critical to making sense of this avalanche of data, ensuring we can fast-track discovery and clinical translation,” says Professor Mattick.

Join Professor Mattick for the 2017 AMSI BioInfoSummer Public Lecture from 6pm, Wednesday, 6 December in Lecture theatre K309, Monash University (Caulfield Campus). Members of the public can register online at bis.amsi.org.au/public-lecture/.

This lecture is part of AMSI BioInfoSummer 2017 hosted by Monash University (Caulfield Campus). Australia's leading bioinformatics and mathematical and computational biology training event, students, researchers and field professionals are exposed to cutting-edge discovery and technology in this fast-paced and exciting field.

“This year’s public lecture exemplifies the dynamic and ever-evolving impact of bioinformatics on biological understanding and healthcare. BioInfoSummer is an important part of AMSI’s ongoing training opportunities to help build the mathematical workforce needed to position Australia as a STEM innovation leader,” says AMSI Director Professor Geoff Prince.

COMMITTEES

AMSI wishes to acknowledge the generous donation of time and scientific advice of the following committees – without their contribution this event would not be a success:

STANDING COMMITTEE

- Matt Ritchie
**Walter and Eliza Hall Institute of Medical Research
Committee Chair**
- Nicola Armstrong
Murdoch University
- Mike Charleston
University of Tasmania
- Gary Glonek
The University of Adelaide
- Jonathan Keith
Monash University
- Ville-Petteri Makinen
The University of Adelaide
- Alicia Oshlack
Murdoch Children’s Research Institute
- Tony Papenfuss
Walter and Eliza Hall Institute of Medical Research
- Chloe Pearse
Australian Mathematical Sciences Institute
- David Powell
Monash University
- Geoff Prince
Australian Mathematical Sciences Institute
- Glen Sheldon
Australian Mathematical Sciences Institute
- Sonika Tyagi
Monash University
- Jean Yang
The University of Sydney

ORGANISING COMMITTEE



- Angela Coughlin
Australian Mathematical Sciences Institute
- Chloe Pearse
Australian Mathematical Sciences Institute
- David Powell
**Monash University
AMSI BioInfoSummer 2017
Event Director**
- Sonika Tyagi
Monash University

AMSI 17 BIOINFO SUMMER

A SYMPOSIUM IN
BIOINFORMATICS

4–8 DEC 2017
MONASH UNIVERSITY
CAULFIELD CAMPUS

AMSI BIOINFOSUMMER
introduces bioinformatics to students,
researchers & professionals working
in mathematics, statistics, IT, medical
sciences, biological & chemical engineering

THEMES:

INTRODUCTION TO BIOINFORMATICS
PROTEOMICS & METABOLOMICS DATA
RNA-SEQ THEORY & PRACTICE
SINGLE-CELL GENOMICS
VISUALISATION, MODELLING & ANALYSIS

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