

ASBTE NEWS

SPRING 2010

WELCOME - Welcome to the Spring 2010 edition of the Australasian Society for Biomaterials & Tissue Engineering (ASBTE) Newsletter. In this edition you will find information from the 2010 ASBTE conference including a wrap-up by the student reps, AGM highlights and Sally's napkin-scribed notes from John Ramshaw's talk on the history of the society. You'll also find ASBTE travel reports, profiles and details of the upcoming 2011 ASBTE Conference to be held in Queenstown (back page). Enjoy!

Eds Tim Dargaville and Sally McArthur

**20th Annual General Meeting
of the Australasian Society for
Biomaterials and Tissue
Engineering**

Held Thursday 11th February
2010, Brisbane

The AGM this year was held on the last day of the ASBTE conference and attended by over 40 members. Outgoing President Keith McLean thanked Laura Poole-Warren for the very successful BITE-RM and ASBTE Conference held at UNSW in 2009 and also the 2010 local organizing committee of Justin Cooper-White, Dietmar Hutmacher, Lisbeth Grondahl and Yin Xiao for their efforts in putting together the meeting. Congratulations went to all the recipients of the 2010 ASBTE travel grants (yet another great reason to be an ASBTE member!), they were: Go, Tirtaatmadja (Univ Melb),

Godara, Farrugia, Young, Beak, Nafea, Alves, Green (UNSW), Nivison-Smith, Zavgorodniy (USyd), Nguyen, Walker, Shadanbaz, Kirkland (Univ Canterbury), Setiyorini, Grenik (Curtin) Wang (CSIRO), Clements (Flinders/CSIRO), Chan (Univ SA).

Both Keith and Treasurer Tim Woodfield thanked all the committee members for their time and efforts donated to the society, especially: Dave Nisbet and Yin Xiao for the newsletter, Lisbeth Grondahl for looking after the travel awards and Dave Nisbet for website administration.

The newly elected officers were:

President: Thilak Gunatillake

Vice-President: Keith McLean

Secretary: Tim Woodfield

Treasurer: Penny Martens

Ordinary Members:

Michael Mucalo
Sally McArthur
Nico Voelcker
Tim Dargaville

State/OS Representative:

Bruce Gardner (WA)

Student Representative:

Dewi Go (Uni Melbourne)
Cara Young (UNSW)
Thanh Nguyen (Uni Canterbury, NZ)
Lauren Clements (Uni Flinders)

Public Officer:

Veronica Glattauer (Victoria)

IUSBSE/ILC Delegates:

Laura Poole-Warren
Keith McLean

FASTS Liason Officer:

Jorge Garcia

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Be sure to check out the website and back page for info on the 21st ASBTE Meeting—Queenstown, NZ.

www.conferencequeenstown.co.nz/asbte2011

ASBTE Website (www.biomaterials.org.au)

Any member wishing to supply news items, links, PhD scholarships, job listings, or other relevant information to the **website** should submit these to Michael Mucalo (m.mucalo@waikato.ac.nz)

New Membership and Renewals: Membership Rates: Full Member (Calendar Year) \$60; Student Member (Calendar Year) \$30. Membership forms are available at www.biomaterials.org.au

ASBTE NEWS is a biannual newsletter that covers news from The Australasian Society for Biomaterials & Tissue Engineering. If you have a news item that you wish to be included please contact the editors:

Tim Dargaville (t.dargaville@qut.edu.au)

Sally McArthur (SMcArthur@groupwise.swin.edu.au)

A BRIEF HISTORY OF THE SOCIETY FROM JOHN RAMSHAW

The ASB (aka ASBTE) over 20 years

Scribed from John Ramshaw's Presentation at ASBTE 2010 (with apologies Sally McArthur)

"In the beginning...well in 1989 at least, Dr Alan Jones from the Department of Industry, Technology and Commerce convened a meeting in Leura on Materials in Medical Devices. This brought together people from around Australia including Graham Ellender, Rolfe Howlett, Bruce Milthorpe, Jerome Werkmeister and John Ramshaw and it was felt that a regular meeting to discuss and stimulate research in this discipline would be a great thing in Australia. So on June 13th 1990, the Australian Society for Biomaterials Inc was formally born and the first meeting held in very chilly conditions just outside Kyneton in Victoria. From that time, the meeting has wended its way around Australia, returning to regularly to Victoria, NSW and Canberra with more recent sojourns in South Australia and New Zealand. Many of the 39 attendees at that first meeting have gone on to be the backbone of the ASBTE we know today.



Coogee Beach, 1994 Conference dinner on the harbour Glenn Edwards Helen Fittor Meg Evans Jerome Werkmeister

Over the years ASB has seen many of its student members progress past their masters and PhD and join the wider Biomaterials community in Australia, industry, CSIRO and academia. We have witnessed the development and growth of exciting new products and ideas, via presentations and posters made at our meeting, with many of these developing companies becoming sponsors of our ASBTE meetings.

Of course, we do not limit ourselves to Australasian shores — attendance at the World Biomaterials meetings every four years has become an amazing



On the way to Windang, 1991

opportunity to bring together ASBTE members from all over the world and witness the progress being made by our members based in groups scattered across the globe from UK and Europe, through to China and the USA.



Finally, along the way there have been some great opportunities to catch up with friends, plot the next ARC/NHMRC grant, commiserate over missed grants, partake of the odd drink and have our photos taken!"



Help Wanted: If you have any interesting, useful ASB/ASBTE archival information John would love to hear from you: John.Ramshaw@csiro.au

ASBTE Student Column

Welcome once again to the student column of the ABTE newsletter. We have 4 student representatives this year: Lauren, Cara, Dewi and Thanh. Please see below for a brief introduction and a photo of our reps:

Lauren: My name is Lauren Clements and I am in the final stages of my PhD working at both at Flinders University, SA and CSIRO, Clayton, VIC. My research is centred on the preparation of 2-directional gradient surfaces that display variations in surface properties including topography, surface chemistry and wettability and the subsequent cellular response to such surfaces. This project is under the supervision of A/Prof Nicolas Voelcker and Dr Helmut Thissen.

Cara: My name is Cara Young, and I'm in my 2nd year of my PhD at the Graduate School of Biomedical Engineering at UNSW in Sydney. I did my undergrad in Biomedical Engineering (majored in Biomechanics) at the University of Melbourne then moved to Sydney in 2009. My PhD research is part of a project looking at biosynthetic hydrogels for the immunoisolation of pancreatic islets. My project involves the fabrication and characterisation of PVA hydrogel microspheres to encapsulate cells, and the incorporation of bioactive molecules with the aim of improving encapsulated cell viability and function.

Dewi: Hi, I am Dewi Go and I am now in the last year of my PhD at Department of Chemical and Biomolecular Engineering, University of Melbourne. My research focuses on the development of delivery vehicles to control the release of a range of biomolecules for various tissue engineering applications.

Thanh: Hi, my name is Thanh Nguyen and I am in the third year of PhD degree at the University of Canterbury in Christchurch, New Zealand. I completed BE degree at The University of Sydney, Australia in 2007. My current work involves an investigation of a novel method for the manufacture of porous ordered-structure scaffolds from magnesium metal. This work is a part of a project on magnesium, funded by the Foundation for Research, Science and Technology (FRST) in New Zealand.



2010 ASBTE Student Representatives:
Cara Young, Dewi Go, Lauren Clements, Thanh Nguyen

The Annual ASBTE conference was held in hot and sunny Brisbane this year from the 10th to the 12th of February. There were many quality talks from all over Australia and Internationally and it was fantastic to hear about the exciting biomaterials research that is being conducted around the world. The mini oral presentations were a great addition to this years conference, allowing many more students to stand up and talk about their exciting research. Congratulations also to Thanh Nguyen for winning the best student poster award, Nicole Yu for the best student oral presentation and Karina George for the best ECR oral presentation! Well Done!!! The Student drinks, held at the Pig 'N' Whistle after the conference dinner was a fantastic way for fellow students to get to know each other a little better and really let our hair down and enjoy ourselves.

TERMIS is almost upon us now, we hope to see many ASBTE students at this conference for some really great presentations! Also, don't forget about ASBTE 2011, to be held in Queenstown, New Zealand from April 27th-29th 2011. Abstract submission opens next month so make sure you keep checking out the ASBTE website for updates and more information:

<http://www.conferencequeenstown.co.nz/asbte2011/index.asp> and we hope to see many fellow students at the 2011 conference!

We would also like to congratulate the awardees of the 2010 Student travel grants: Sung Chul Baek and Rylie Green. We look forward to reading about your achievements in the next newsletter. In addition, congratulations to the 21 students awarded ASBTE annual meeting 2010 travel grants.

cont (page 4)



ASBTE Student Column (cont.)

As one last reminder don't forget to have a look at the student page on the ASBTE website...

<http://www.biomaterials.org.au/index.php?id=9>

We are always interested in hearing fellow students' research interests. Please let us know if there is anything in particular that you would like to see featured on the student page or this column.

We hope to see you in Sydney for TERMIS next month and then in New Zealand in April 2011!

Cara, Dewi, Thanh and Lauren



Photos from the 2010 ASBTE meeting taken by Jan Gohlike and others

ASBTE Travel Grant 2009 Report

Nick Kirkland (University of Canterbury, New Zealand)

My PhD project focuses on the development of magnesium (Mg) alloys as a biomaterial, specifically for orthopaedic applications. It is part of a larger project between the University of Canterbury and the University of Otago in New Zealand that encourages cooperation and a close working relationship between mechanical engineers and biological scientists. My work is specifically focussed on the production and corrosion properties of a range of Mg alloys containing elements such as calcium, zinc and manganese, to name a few.

Through funds supplied by the ASBTE travel grant, I was fortunate enough to have spent four weeks from November to December 2009 working at Monash University in Melbourne. The purpose of my visit was to carry out a large scale *in vitro* study on the degradation behaviour and mechanical properties of a range of Mg alloys in simulated body fluids (SBF). The work specifically entailed the preparation of a number of samples from each of 28 Mg alloys I had cast. Two-thirds of these samples were then put into individual sterile containers, filled with an amount of SBF with albumin, and placed in an incubator. The solution was refreshed at regular intervals and the samples were taken out at one and three weeks. All samples were then imaged and weighed before and after corrosion product removal. Finally they were mechanically compressed to determine how the

corrosion over the weeks had affected their strength.

Although corrosion rates were initially high, the proteins provided

significant protection as the overall rates were lower than previously found in other solutions. Several of the alloys showed corrosion rates closer to that which we have found in concurrent *vivo* tests. Mechanical integrity was sustained for the slower corroding samples, but was greatly reduced in the faster,

higher alloyed ones. The data obtained from the experiments will both help narrow the search for a suitable alloy and provides a large amount of information that will be the groundwork for future experiments.



in

I would like to thank Dr. Nick Birbilis and Dr. Dave Nisbet, without whose input and generous hours my work would have been impossible. I would also like to thank the ASBTE for provide help in funding my trip and allowing this multi-disciplinary research to happen.

For details on applying for ASBTE travel awards visit www.biomaterials.org.au

One Minute With...

Dr Travis Klein

ASBTE member since:
2008

What are you working on now?

I'm leading the Cartilage Regeneration Laboratory at the Institute of Health and Innovation, Queensland University of Technology. We have recently spun-off from Prof. Dietmar Hutmacher's



Regenerative Medicine Group. We aim to develop structurally and functionally appropriate engineered cartilage as a treatment for cartilage defects, which cause pain and disability in millions of people around the world. We are currently developing model systems using clinically relevant cells and functionalised hydrogels, as well as methods for assessing their behaviour.

What motivates and inspires you?

People suffering from joint problems such as osteoarthritis, and the surgeons who treat them.

Where did you study previously?

I did my PhD studies in Bioengineering at the University of California - San Diego, under the guidance of Prof. Robert Sah.

What made you choose science?

I was attracted by the quantitative nature of science and the ability to answer interesting and important questions.

Favourite holiday destination?

Anywhere with interesting wildlife is great for a holiday. Some of my favourites include Ningaloo, Borneo, and South Africa.

"One minute with..." profiles an ASBTE member. If you have someone in your group you would like to see profiled please email Tim Dargaville (t.dargaville@qut.edu.au) or Sally McArthur (SMcArthur@groupwise.swin.edu.au).



**27th - 29th April 2011
Queenstown, New Zealand**

21st Annual Australasian Society for Biomaterials & Tissue Engineering Conference

Key Dates

Call for Papers Opens
September 2010

Conference
Registration Opens
October 2010

Call for Papers Closes
15th November 2010

Speaker Notifications
15th December 2010

Program Available
31st January 2011

Early Bird Registration Closes
25th February 2011

www.conferencequeenstown.co.nz/asbte2011

