



ASBTE NEWS

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Parliament House, Canberra Australia

From the President

As 2016 draws to a close, it is time to reflect and I have to say that I am very happy with the level of support that our society has provided to the next generation of Biomaterials and Tissue Engineering enthusiasts (e.g. through conference travel and lab travel awards), with the exposure that our society had internationally (generated e.g. by multiple bids for international conferences) and with the preparation for future support and events (see this newsletter for the next round of awards and news related to the 2017 ASBTE annual conference).

However, we can always do better – particularly in regard to involving our student and early career researcher members. Therefore, perhaps you can reflect as well and let us (the ASBTE committee) know what your wish list would be for 2017. If you have a list, please send it to the secretary (bryan.coad@unisa.edu.au) or myself (helmut.thissen@csiro.au).

With best wishes for a relaxing holiday and a spectacular new year!

Helmut

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.

Veronica Glattauer (veronica.glattauer@csiro.au) and David Nisbet (david.nisbet@anu.edu.au)

ASBTE 2017 Conference



Conference preparations are well underway with over 160 submitted abstracts covering a large range of Biomaterial and Tissue Engineering topics.

The committee will be busy in the coming months putting together what promises to be an exciting programme.

Upcoming schedule;

13 January 2017 Abstract Acceptance Notification

16 January 2017 Conference Travel Awards applications due, see <http://www.asbte.org/>

27 January 2017 Author Registration Deadline

24 February 2017 Early Bird Registration Deadline

www.asbte2017.smalltalkevents.com.au

Join the ASBTE or renew your membership for 2017!

Full Member \$80

Student Member \$40

Awards and Achievements



VESKI Award

Dr. Peng-Yuan (George) Wang (DECRA Fellow, Swinburne University), a long-time ASBTE member who already has received multiple awards, has been awarded a prestigious 2016 Victoria Fellowship. The award will enable him to undertake a study tour to the US and Canada, where he will continue to focus on the interactions between stem cells and biomaterial scaffolds. In particular he will use this opportunity to expand his research on binary colloidal crystal nanostructures and how these can be used to regulate stem cell function and to achieve reprogramming. The study mission will take him to UCLA and the University of Nebraska in the US as well as the University of Toronto in Canada, where he will work with international leaders in the fields of biomaterials and regenerative medicine. He is also planning to attend the (US) Society for Biomaterials Annual Meeting and the Canadian Medical and Biological Engineering Conference.

George (Left) with the Minister for Small Business, Innovation and Trade, Hon Philip Dalidakis.

NHMRC Peter Doherty Biomedical Fellowship Funding

Anitha Gopal, Post Doctoral Research Fellow was awarded NHMRC Early **Career Fellowships Grant**; Peter Doherty- Australian Biomedical Fellowship for funding commencing in 2017 (2017-2020). The title of the proposed project is "Rationally Designed Targeted Core-Shell Nano-Construct for Improved Anticancer Effects and Enhanced Bone Fracture Healing in Breast Cancers Metastasised to Bone." It is under the mentorship of Asso Prof Lisbeth Grondahl (School of Chemistry and Molecular Biosciences; SCMB, The University of Queensland, St Lucia.

PhD Award



Kelly Tsang received his PhD from Monash University on the 26th of October 2016. Kelly decided to take up the PhD challenge after working as a CSIRO staff member. During his PhD, which also took him to MIT in Boston, USA on a Fulbright Scholarship, he was co-supervised by John Forsythe (Monash University, Dept. of Materials Engineering) as well as Richard Evans and Helmut Thissen (both CSIRO Manufacturing). He will now join the TGA in Canberra.

ASBTE Website www.asbte.org

Any member wishing to supply news items, links, PhD scholarships, job listings, or other relevant information to the **website** should contact the Executive Officer (Bryan.Coad@unisa.edu.au)

ASBTE Lab Travel Award



In September 2016, I was fortunate enough to receive an ASBTE Lab Travel Award to visit Professor Chengtie Wu's lab at Shanghai Institute of Ceramics, Chinese Academy of Sciences (SICCAS). SICCAS is a comprehensive and unique organization engaged in advanced inorganic non-metallic materials research. Its main research areas include high performance ceramics and superfine microstructures, structural ceramics and composites, inorganic functional materials and devices, energy materials, inorganic coatings, artificial crystals, biomaterials and tissue

engineering, environmentally friendly materials, the analysis and characterization of inorganic materials, and the technological study of industrial ceramics and ancient Chinese ceramics.

My visit to Professor Wu's lab builds on the long-term collaboration between SICCAS and the Queensland University of Technology (QUT) in the field of bone tissue engineering. Professor Chengtie Wu - previously a Vice-Chancellor's Research Fellow at QUT - now a Professor and Executive Director at the Biomaterials and Tissue Engineering Research Centre within SICCAS, leads a highly productive research group comprised of 15 PhD students. Professor Wu's most significant contributions to the field include establishing the technologies and methodologies for the chemical synthesis of bioglass and ceramic powders including mesoporous bioactive glasses (MBG), and pioneering the preparation and characterization of porous bioglass scaffolds and composites for bone regenerative medicine. Professor Wu's current research mainly focuses on bioactive ceramics with specific micro-nanostructure for tissue engineering, digital preparation of advanced biomaterials, interactive mechanism of stem cells and biomaterials as well as multifunctional biomaterials for tumour therapy.

During the lab visit, I had the opportunity to work alongside a number of the PhD students in Professor Wu's lab on the development of biomaterials that can accelerate blood vessel formation and regulate immune response. I was exposed to state-of-the-art additive manufacturing and spent time learning the preparation of hollow-struts-packed bioceramic scaffolds using a modified coaxial 3D printing strategy. I appreciated the opportunity to take part in the weekly lab meetings held with members from Professor Wu's research group. These informal meetings were a great opportunity for me to learn about the research projects that are currently undertaken by the group, and to present and discuss my own research.

I was also fortunate to attend the Opening Ceremony for the Joint Laboratory of Biomaterials and Tissue Engineering between SICCAS and QUT, which was held on 16th of November 2016 and followed by the inaugural Research Forum on Biomaterials and Tissue Engineering hosted by SICCAS. The Forum has given me the opportunity to attain advanced skills from leading scientists in the field of bone tissue engineering. The intellectual input from experts on the challenges of regenerative medicine and the new ideas gained in this Forum has been invaluable.

I would like to thank ASBTE for providing the funds which enabled me to visit SICCAS and attend the Australia-China Research Forum on Biomaterials and Tissue Engineering. The lab visit allowed me to learn new techniques to drive my future research. Importantly, it also provided an opportunity to strengthen my profile and broaden my international collaborations. I feel very privileged to have received this award.

***Dr Yinghong Zhou, Institute of Health and Biomedical
Innovation, Queensland University of Technology***

Student News

This November something very exciting happened: I submitted my PhD! It's been an exciting few years filled with conferences, synchrotrons, late nights, and some pretty cool science. I'm glad to have been involved with the ASBTE, and I'm sure you'll all have a great time in Canberra for the ASBTE 2017 conference. And speaking of Canberra, now that I'm no longer a student the ACT student rep position is open.

kiara.bruggeman@anu.edu.au.



ACT: Kiara Bruggeman



My name is Brooke Pereira and I am the Victorian Student Representative for the ASBTE. In the last month, Monash University, together with Prime Minister Malcolm Turnbull, launched their new biomedical health precinct, the Biomedicine Discovery Institute (BDI). The BDI encompasses over 120 research groups with 700 on site researchers as well as clinical and industry partners. It is a promising sign that the Australian government supports the development of multidisciplinary solutions, including biomaterial and tissue engineering research, to global health problems. In other news, I had the pleasure of attending the Science & Technology Australia's Science meets Business 2016 (Smb2016) event. This was a highly motivating and inspiring experience, with 200 of Australia's best scientific minds attending. Over the day there was several keynote addresses and panel discussions about collaboration between industry and academia, entrepreneurial start-ups, the latest in tech and finding the next "big idea". I thank the ASBTE for allowing me to attend this exciting event. Contact information: Monash University Biomedicine Discovery Institute E: brooke.pereira@monash.edu

ASBTE Student & Early Career Researcher Opportunities

Check out the opportunities available for students in the ASBTE:

Lab Travel Awards: The ASBTE will fund one or more Travel Grants of up to a total of \$4,000 for international or local travel during 2017 for postgraduate research students and early-career researchers.

Conference Travel Awards: The ASBTE will fund conference travel awards to assist selected postgraduate research students and early-career researchers.

Job Hunting: The ASBTE is a great networking opportunity, and also provides information about current research position opportunities.

Check out the website for more information <http://www.asbte.org/>

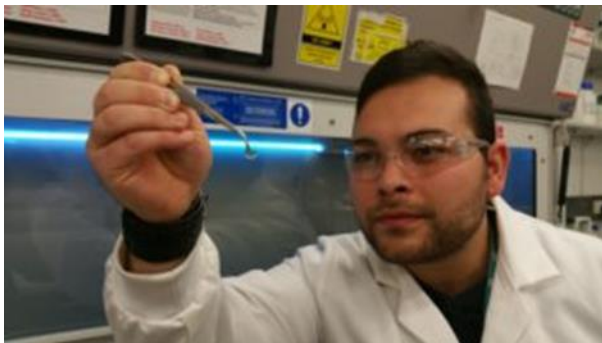
Fresh Science

Curing blindness by repairing corneas with invisible films

15 August 2016 <http://freshscience.org.au/uncategorized/curing-blindness-by-repairing-corneas-with-invisible-films>

A patented treatment could restore eyesight for millions of sufferers of corneal disease.

The University of Melbourne–led team of researchers have grown corneal cells on a layer of film that can be implanted in the eye to help the cornea heal itself. They have successfully restored vision in animal trials and are aiming to move to human trials next year.



Victor Fortmann's vision in one eye failed following a condition called bullous keratopathy. Two donated cornea transplants restored his sight for a period, but he now needs a third to restore his vision in that eye.

Over 2000 corneal transplants are conducted in Australia each year. But globally there's a shortage of donated corneas, and the resulting loss in vision affects about 10 million people worldwide.

"We believe that our new treatment performs better than a donated cornea, and we hope to eventually use the patient's own cells, reducing the risk of rejection," says

Berkay Ozelik who developed the film working at the University of Melbourne.

"Further trials are required but we hope to see the treatment trialled in patients next year," he says.

The cornea is the transparent layer at the front of the eye. To remain healthy and transparent, the cornea must remain thin. A layer of specialised cells (corneal endothelial cells) on its inner surface maintain the cornea's moistness by 'pumping' water out of it.

However, trauma, disease and aging can reduce the numbers of these cells, eventually causing the cornea to become swollen and cloudy, leading to vision deterioration and blindness.

The cells cannot regenerate or repair themselves. The only treatment available requires donor corneas to be transplanted into the patient's eyes. But there's a worldwide shortage of donor corneas. The transplant process damages some corneal endothelial cells, and the donor cornea may still be rejected by the patient's immune system.

Berkay and his colleagues grew corneal cells on a specially developed synthetic film that could then be implanted into a patient's eye.

"The hydrogel film we have developed allows us to grow a layer of corneal cells in the laboratory," says Berkay. "Then, we can implant that film on the inner surface of a patient's cornea, within the eye, via a very small incision." Once in place the new cells restore the cornea's vital water-pumping activity, so that the cornea once more becomes transparent.

Thinner than a human hair (50µm), the hydrogel film is perfectly transparent when implanted, and allows the flow of water between the cornea and the interior of the eye. The film completely biodegrades within two months and causes no adverse immune reactions.

Berkay developed the synthetic film used to culture new corneal cells at the Polymer Science Group (the University of Melbourne), working with the Centre for Eye Research Australia. Berkay is now working in a similar field at CSIRO and is still active with the corneal film project as an Honorary Post-doctoral Fellow at the University.

Berkay was the Victorian winner of Fresh Science, a national program helping early-career researchers find and share their discoveries, supported by Museum Victoria, CSIRO, Deakin University, Monash University, RMIT University, Swinburne University of Technology, the University of Melbourne and New Scientist.

Contacts:

Berkay Ozelik (researcher) ozcelik@unimelb.edu.au, **Greg Qiao** (Project Supervisor) gregghq@unimelb.edu.au, **Mark Daniell** (ophthalmic surgeon) daniellm@unimelb.edu.au, **Errol Hunt** (media) errol@scienceinpublic.com.au, **Michael Grigoletto** (Centre for Eye Research Australia) grigoletto@unimelb.edu.au, **Joy Francisco** (The University of Melbourne) francisco@unimelb.edu.au, **Jordan Green** (The University of Melbourne) green@unimelb.edu.au

Science Meets Business 2016 (SmB2016)

Brooke Pereira, ASBTE Student Representative (VIC)

On the 24th of October, I had the privilege of attending Science meets Business 2016 (SmB2016) at the Telstra Conference Centre in the Melbourne CBD. The day, which was held by Science & Technology Australia (STA), was an invite-only event, with about 200 of the best and brightest Australian STEM leaders in attendance.

The event ran as a series of individual speakers and panel sessions, where representatives from government, industry and academia spoke about the need for cooperation between the sectors. Among the keynote speakers was Dr. Joanna Batstone, the Vice-President and Lab Director of IBM Research as well as the Assistant Minister for Industry, Innovation and Science, Hon. Craig Laundy MP, and the Shadow Minister for Science, Senator the Hon. Kim Carr. Panel members of note were Professor Ian Chubb AC, the former Chief Scientist for Australia, Ms Leonie Walsh, inaugural Lead Scientist of Victoria and Professor Anne Kelso AO, CEO of the NHMRC.

Over the day, there was great emphasis on industry-based PhDs (iPhDs), with calls for stronger collaboration between industry and academia, which would subsequently lead to more employable PhD graduates. Other discussions centred on entrepreneurship, with many discussions about converting start-ups into viable and sustainable businesses. Throughout the day, attendees were using the hashtag #SmB2016, which was in the top 10 Australian trending topics on Twitter that day.

Overall, it was an enlightening and inspiring day and I learnt a lot from listening to various viewpoints on helping "Science meet Business". The knowledge I gained from SmB2016 will help me make decisions about my own career in the future. It was also pleasing to see that there was strong gender equality at the event, with all four panels comprised of at least 50% women. I thank the ASBTE for giving me the opportunity to attend this terrific event.

Stephanie Lamont-Friedrich

I was fortunate enough to attend the Science Meets Business 2016 conference in Melbourne as a nominated guest of the ASBTE. I found the conference very worthwhile and rewarding, and learnt that I actually knew very little regarding how business directly impacts current science and future science. We heard from a variety of people, including Professor

Anne Kelso (CEO, NHMRC), Professor Jane den Hollander (Vice-Chancellor, Deakin University), Senator Kim Carr (Shadow Minister for Innovation, Industry, Science and Research), Professor Ian Chubb (former Chief Scientist for Australia), Dr. Marcus Zipper (CSIRO Director) and Mr. Paul Bassat (Co-founder of Square Peg Capital and SEEK). Conference speakers and panel members were from a diverse background, including universities, government organisations and private business (including SMEs), and this made for some very interesting conversations. Some key messages from the conference included a need to better support SMEs (by assessing the challenges that SMEs face in a collaborative world), the pro's and con's associated with the Government's R&D Tax Incentives, and improving Australia's world standing for Innovation Efficiency (getting ideas to industry). I left the conference with a lot more knowledge regarding the importance of the relationship between Science and Business, and am very thankful for the opportunity from the ASBTE. Included are some pictures of two different panel discussion sessions. If anyone had any questions regarding the conference, I am more than happy to try to answer them, or provide contact details for someone who may be able to.

I can be contacted via my email lamsj005@mymail.unisa.edu.au.



This year's ASBTE committee

**Helmut Thissen** (President)**Tim Woodfield** (Vice-President)**Bryan Coad** (Executive Officer)**Penny Martens** (Treasurer)**Veronica Glattauer****Travis Klein****David Nisbet****Tony Weiss**

Ordinary members






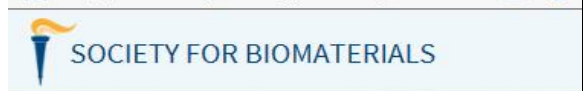


**ASBTE on LinkedIn**

The ASBTE group on LinkedIn provides the latest news and discussions for society members. If you are a LinkedIn member, search for "ASBTE - The Australasian Society for Biomaterials and Tissue Engineering" in groups and request to join the group. Or type in the following web address: www.linkedin.com/groups?home=&gid=6512061












If you are not a member of LinkedIn, start by registering today. It's free! au.linkedin.com

Spotlight on Conferences

Please check the Web to get further information and also details on due dates

CONFERENCE	DATES	LOCATION	WEBSITE
 ICBBAB 2017 : 19th International Conference on Bio-nanotechnology, Biomaterials etc	January 26 -27, 2017	Sydney, NSW	https://www.waset.org/conference/2017/01/sydney/ICBBAB/home
 Biomaterials and Tissue Engineering	February, 20 – 22, 2017	Innsbruck, Austria	https://www.iasted.org/conferences/home-851.html
 Asian Advanced Materials Congress	March 11-16, 2017	Cruise ship, from Singapore	http://www.vbripress.org/asamc/
 Scandinavian Society for Biomaterials	March 15-17, 2017	Hafjell, Norway	http://www.scsb.eu/
 2nd Annual Conference & Expo on Biomaterials	March 27-28, 2017	Madrid, Spain	http://biomaterials.conferenceseries.com/
 Society for Biomaterials 2017 Annual Meeting	April 4- 8, 2017	Minneapolis Convention Center	https://www.biomaterials.org/events/sfb-2017-annual-meeting
 Australasian Society for Biomaterials and Tissue Engineering	April 18-20, 2017	Canberra, ACT	http://www.asbte.org/
 6th China Europe Symposium on Biomaterials in Regenerative Medicine	May 21-24 2017	Porto, Portugal	www.cesb2017.i3s.up.pt

Spotlight on Conferences






 Canadian Biomaterials Society Société Canadienne des Biomatériaux	May 24 – 27, 2017	Winnipeg, Manitoba	https://biomaterials.ca/
33rd Annual Meeting of the CBS			
	June 11-15, 2017	Cleveland, OH	https://www.ishas.org/
Hyaluronan 2017			
 INTERNATIONAL SOCIETY FOR STEM CELL RESEARCH	June 14-17, 2017	Boston, MA	http://www.isscr.org/home/annual-meeting/isscr-2017-boston/present
International Society for Stem Cell Research			
 	June 14-19, 2017	Heraklion, Crete, Greece	http://aegeanconferences.org/src/App/conferences/view/117
6th Int'l Conference on Tissue Engineering			
	June 21-24, 2017	Chicago, IL	https://asaio.com/annual-conference/chi-2017-63rd-annual-conference/
ASAIO 63rd Annual Conference			
 	June 26-30, 2017	Davos, Switzerland	http://www.termis.org/eu2017/
2017 TERMIS-EU Conference			
 	June 28-29, 2017	London, UK	https://www.waset.org/conference/2017/06/london/ICTERM
ICTERM 2017: 19th International Conference on Tissue Engineering and Regenerative Medicine			
	July 11-14, 2017	Seoul, Korea	http://www.fbps.org
12th International Symposium on Frontiers in Biomedical Polymers			

Spotlight on Conferences

 Gordon Research Conferences Gordon Research Conference - Biomaterials & Tissue Engineering	July 23-28, 2017	Holderness, NH	https://www.grc.org/programs.aspx?id=10961
 ICTERM 2nd International Conference on Tissue Engineering and Regenerative Medicine (ICTERM) to be held in South Africa	July 26-30, 2017	Vanderbijlpark, South Africa	http://www.vut.ac.za/index.php/faculties/applied-a-computer-sciences/departments/health-sciences/ict-conference
 WASET ICBCN 2017 : 19th International Conference on Biomaterials, Colloids and Nanomedicine	August 6 - 7, 2017	Amsterdam	http://www.waset.org/conference/2017/08/amsterdam/ICBCN
 Biomaterials International Biomaterials International 2017	August 20-24, 2017	Fukuoka, Japan	http://www.biomaterials.tw
 BioMaAp 2017 International Conference on the Advances in Biomaterials and Their Applications	August 31-- September 1, 2017	Croydon, UK	https://www.biomaterials.co.uk/index
 ESB 2017	September 4 - 8, 2017	Athens, Greece	http://www.esb2017.org/
 The 6th Asian Biomaterials Congress (ABMC6)	October 27 - 29, 2017	Thiruvananthapuram, India.	http://www.sbaoi.org/6abmc/index.html

Spotlight on Conferences

And some Major Events in 2018 and beyond to Plan Ahead for:

 SOCIETY FOR BIOMATERIALS SFB 2018 Annual Meeting	April 11-14, 2018	Hilton, Atlanta	https://www.biomaterials.org/events/sfb-2018-annual-meeting
 termis [®] Tissue Engineering International & Regenerative Medicine Society TERMIS World Congress	September 4 -7, 2018	Kyoto, Japan	http://www.termis.org/meet-ings_worldcongress.php
  European Society for Biomaterials 29 th European Conference on Biomaterials	September 8 -13 2018	Maastricht, The Netherlands	www.esb2018maastricht.org
 11 th World Biomaterials Congress 19 - 24 May 2020, Glasgow, Scotland 11th World Biomaterials Congress	May 19 -24 2020	Glasgow	www.wbc2020.org

Happy Holidays and all the Best for the Coming Year
See you in 2017!

