



The Institute of Materials, Minerals & Mining

BIOMEDICAL APPLICATIONS DIVISION ANNUAL REPORT FOR 2015

1. Board membership

Chairman Prof Andrew Lewis, Biocompatibles UK plc
Secretary Dr Gabriela Juarez Martinez, KTN Limited
Prof Serena M Best, University of Cambridge
Mrs Sue Dunkerton, KTN Limited
Dr Geoffrey Andrews, CEO, Ranier Technology
Dr. Sarah Ashwood, EPSRC
Professor William Bonfield, Cambridge
Dr Julian Braybrook, LGC
Professor Justin Cobb, Imperial College
Professor Lucy Di Silvio, Kings College London (Former President of UKSB, secretary of European Society of Biomaterials)
Professor Sandra Downes, University of Manchester
Dr Mino Esat, Independent Consultant
Dr David Farrar, Smith & Nephew
Mr Roger Feneley, Independent (retired urology surgeon)
Professor Paul Hatton, University of Sheffield
Dr Jie Huang, UCL
Dr Andrew Jackson, The Technology Partnership plc
Dr Julian Jones, Imperial College
Mr Brian Kent, Independent
Prof Jonathan Knowles, UCL
Prof David Lee, Queen Mary University of London (and representative of TCES)
Professor Andrew Lloyd, University of Brighton
Professor Brian Meenan, Nanotechnology & Integrated Bio-Engineering Centre, University of Ulster
Professor John Nicholson, St Mary's University
Professor Neil Rushton, Cambridge
Professor Elizabeth Tanner, University of Glasgow
Dr Irene Turner, University of Bath
Professor Matteo Santin, University of Brighton
Professor Pankaj Vadgama, Director, Biomedical Materials IRC, Queen Mary University of London
Prof Rachel Williams, University of Liverpool
Mr David Sharp, Consultant, Ipswich Hospital
Dr Mura McCafferty, Ulster University

IOM3 Staff

Geoff Hale, IOM3

2. Board meetings

19 January 2015, Carlton House Terrace, London

Attendees (16)

Chairman Prof Serena M Best

Dr Gabriela Juarez Martinez

Dr Geoff Hale

Prof Paul Hatton

Prof John Nicholson

Dr Jie Huang

Prof Matteo Santin

Prof Andrew Lewis

Dr Mino Esat

Prof Jonathan Knowles

Prof Rachel Williams

Dr Geoffrey Andrews

Prof Lucy Di Silvio

Prof Neil Rushton

Mr Roger Feneley

Mr Brian Kent

22 May 2015, Carlton House Terrace, London

Attendees (12)

Chairman Prof Andrew Lewis

Dr Gabriela Juarez Martinez

Prof Serena Best

Prof Julian Jones

Dr David Farrar

Dr Sarah Ashwood

Dr Jie Huang

Prof Lucy Di Silvio

Dr Geoffrey Andrews

Dr Mino Esat

Prof Paul Hatton

Prof Pankaj Vadgama

14 October 2014, Carlton House Terrace, London

Attendees (11)

Chairman Prof Andrew Lewis

Dr Gabriela Juarez Martinez

Prof Rachel Williams

Prof Jonathan Knowles

Dr David Farrar

Dr Sarah Ashwood

Dr Mino Esat

Prof Neil Rushton

Prof Pankaj Vadgama

Mr Roger Feneley

Dr Geoff Hale

Dr Pippa Newby (invited speaker)

3. Activities during 2015

3.1. Technical Programme

Past Meetings

Meetings Sponsored or Co-organised by the IOM3

UKSB Meeting, Belfast UK, June 2015

Mura McCafferty, vice-chair of the Irish North Materials Group (local IOM3 society) was involved in the organization of the event. Also the Irish North Materials Group sponsored the meeting by awarding the prize for best materials related presentation.

Other members of the BMAD division, Rachel Williams and Jonathan Knowles, also attended the meeting. It was a good meeting organised by Dr Adrian Boyd, University of Ulster, it included several PhD student presentations. The Alan Wilson Memorial Lecture was given by Prof. Jonathan Knowles and the President's Prize was awarded to Prof. Serena Best

Meetings attended or organised by IOM3 BMAD board members but not formally representing the IOM3

Chinese ESB meeting, China

Serena Best, Lucy Di Silvio and Jie Huang attended this meeting and noted that it was well organised and the quality of the research presented was very good. The Chinese government made a substantial investment in this area. It was also noted that most of the attendees were from China.

Laboratory Medicine Meeting at Royal College of Pathologists, UK

Pankaj Vadgama mentioned that the RCP made a good effort to build this institutional bridge to support research, teaching and accreditation for laboratory medicine professionals.

Polymer process engineering 15, Bradford UK, September 2015

Paul Hatton reported that Bradford University leads a UK-China programme, which was partially funded by EPSRC. Prof Phil Coates organised a meeting that has a strong biomaterials theme.

David Farrar also attended.

Memorial symposium on the life of Julia Polak, Royal Society of Medicine, UK

Lucy Di Silvio reported on this half-day symposium; approximately 100 people attended the meeting, mainly comprising Prof. Polak's many collaborators throughout her life. Julian Jones gave a presentation on the collaboration between Larry Hench and Julia Polak, on behalf of Larry Hench.

Launch of the Institute of Bioengineering at QMUL, UK

Pankaj Vadgama attended this event.

ESB meeting, Krakow Poland, Sep 2015

Rachel Williams attended the meeting, along with many other members of BMADiv, it was noted that the meeting was well organised and included parallel sessions; around 900 people attended.

EFFORT, Prague Czech Republic, May 2015

Minoo Esat attended this meeting; this is the biggest European meeting in Orthopaedics and Trauma. Some of the main sessions were very industry focused, there were very interesting lunch-time symposia on biomaterials, tribology and metal and metal. It was a very good meeting for academic-clinician interactions.

Innovate UK Scoping Workshop for Regenerative Medicine, UK

Paul Hatton and David Farrar participated in this workshop, which aimed to decide on strategy for Regenerative Medicine. The meeting focused on biomaterials (excluded cellular therapies) and on understanding the barriers and challenges to translate these technologies.

European Technology Platform for Nanomedicine (ETPN) Annual Meeting, Dublin Ireland, October 2015.

Gabriela Juarez Martinez attended this meeting; she reported that around 80 people attended the meeting. During the meeting a proposal was discussed around the Industry Driven Initiative (IDI) to include other key enabling and emerging technologies such as micro-electronics, advance manufacturing, photonics, advance materials, etc. instead of only focusing on nanotechnologies. The UK representation at ETPN meeting is very low; KTN is working with the British Society for Nanomedicine to promote higher participation at European level.

Nano4Life 2015, Swansea, June 2015

Gabriela Juarez Martinez organised together with the Centre for NanoHealth from Swansea University Nano4Life 2015. This was part of the Welsh festival for innovation; around 70 people attended. The feedback received on programme and scientific presentations was very good.

Bioelectrochemical Society, Malmo, June 2015

PV attended this biennial meeting on electrochemical research at the biointerface. There were 400 delegates and three parallel sessions. Promising developments were cited in relation to cell and biomolecule behavior at surfaces.

MediWales-KTN Meeting, Cardiff, June 2015: The Bionic Clinician

Meeting on the value and ethics of patient surveillance. Attended by 30 delegates

Microfluidics for Diagnostic Medicine Pilani, India, August, 2015

National discussion meeting to create research hubs in India. Attended by 60 delegates.

Health Services Laboratories Conference Innovation in Diagnostic Medicine London November, 2015

KTN Workshop on Advanced Materials and Processes, Sheffield, July 2015

David Farrar attended and presented at this workshop aimed at identifying barriers in introducing new materials and processes into the medical device market

Summary; details in Appendix

Future Meetings

RSC Biomaterials Meeting, Belfast, January 2016

MeDe Innovation Annual Meeting, Innovative Manufacturing for Medical Devices, Centre for Life, Newcastle, January 2016.

World Biomaterials Congress, Montreal, May 17-22, 2016, including a tribute to Larry Hench

ACerS' Innovations in Biomedical Materials and Technologies Rosemont Hyatt, Chicago, IL, USA July 28 – July 31 2016

UKSB Meeting, London End of June 2016

Bioceramics 28 Charlotte, NC USA, 18th -21st October, 2016, including a tribute to Larry Hench

ETP – Nanomedicine General Annual Meeting, Heraklion Greece, Oct 2016

3.2. Web-site developments

The new website was launched during the latter end of 2015 and the BMAD microsite is up and running. Training will commence in 2016 for volunteer webmasters to enable the committee to control and update content.

3.3. Engagement with technical community and/or local societies

Julian Jones is Chair of Technical Committee 4 (TC04, Biomedical Glasses) of the International Commission on Glass. The committee is currently concentrating on outreach activities, including a new YouTube Channel at <https://www.youtube.com/channel/UCNKc2if3dCNM1a1ynoFEh1A>
Julian Jones is co-Champion of a Technical Interest Group (TIG) of the American Ceramics Society, which aims to improve Industry-Academia links

3.4. Contributions to IoM3 house journals

There was a Division Focus provided for the July edition of Materials World, restating the objectives of BMAD and communicating the change in chair. Andy Lewis provided a Profile article on careers, managing professional development, speaking and presenting for the September edition of Materials World.

Julian Jones and Elizabeth Tanner are on the editorial board of International Materials Reviews and there has been an increase in the number of biomaterials articles published.

3.5. Acknowledgments

Mr Roger Feneley retired from the committee in 2015 due to an increase in other commitments. His positive contribution was acknowledged and thanked by the other committee members, particularly in his tireless campaign for improvements in urinary catheter design and the huge unmet clinical need in this area of our field.

The committee also held their respects for Prof Larry Hench, an icon in the Biomaterials Field and the inventor of Bioglass amongst many of his achievements, who died in December 2015.

3.6 Other

3.5.1. Foresight/ Innovation and Growth

Although Andrew Lewis retired from the EPSRC Healthcare Technologies SAT in 2015, Sue Dunkerton remains an active member and will continue to provide a conduit for BMAD feedback on policy for the RC. Rachel Williams has been appointed to the SAT with effect from April 2015 for 4 years.

Sue Dunkerton and Gabriela Juarez Martinez continue to provide the link to the KTN activities.

4. Strategy and Objectives for 2016 and Beyond

4.1. Opportunities and Constrains

The move to 297 Euston Road provides an opportunity to leverage the new facilities for which the IoM3 have agreed to reduce charges associated with the organisation and running of meetings at the site.

Close communication with RCUK representatives will continue through 2016 with the on-going reshaping initiatives that are happening in order to best allocate government funding across the physical, biological and medical sciences (which is likely to be reducing in real terms over the coming years).

4.2. Specific targets for 2016

To define, organize and run a workshop-type event that can utilize the “mine” facility within the institute building as requested at the ITPB.

The Institute has requested that all Divisions and Societies undertake a review of their membership. A review of the BMAD committee will be performed in early 2016 with a view to reduce the number of active members to the core of those that have attended regularly over the past few years.

The Committee to write a special feature on Biomaterials for Materials World, target mid-year 2016 publication.

4.3. Outline plans for the 4 years beyond 2016

The Committee wishes to expand its out-reach activities and more effort will be made over the coming years to be involved in activities that will stimulate grass-roots interest in biomaterial science. Diane Aston will be approached in early 2016 to brainstorm ideas on how the Committee can initiate such activities.

There are plans for the Committee to manage the BMAD microsite more closely so that more up-to-date information can be posted more regularly to help increase interest and stimulate access.

We will also be undertaking a review of related societies and groups and ensuring we are connected to these and their activities in the field so that we can most broadly represent our discipline.

5. Appendix: Technical Programme as of December 2015

Date	Status (Held /Progressing /Planned)	Title	Location	Organising Division(s) /Committee(s) /Collaborators	Financial Underwriter (IOM3/ Local/ Other)	100% Target No's	Actual No's
Jun 2015	Held	UKSB Meeting	Belfast, UK	YES	YES		
Apr 2015	Held	Chinese ESB meeting	China	NO	NO	100%	>50
	Held	Laboratory Medicine Meeting	Royal College of Pathologist, UK	NO	NO		
Sep 2015	Held	Polymer process engineering 2015	Bradford, UK	NO	NO		
	Held	Memorial symposium on the life of Julia Polak	Royal Society of Medicine, UK	NO	NO		

	Held	Launch of the Institute of Bioengineering at	QMU, UK	NO	NO		
Sep 2015	Held	ESB meeting	Krakow, Poland	NO	NO		
May 2015	Held	EFFORT	Prague, Czech Republic	NO	NO		
June 2015	Held	Innovate UK Scoping Workshop for Regenerative Medicine	York, UK	NO	NO		
Oct 2015	Held	European Technology Platform for Nanomedicine (ETPN) Annual Meeting	Dublin, Ireland	NO	NO		
Jun 2015	Held	Nano4Life 2015	Swansea, UK	NO	NO	100%	75%
Jun 2015	Held	BES Meeting	Malmö, Sweden	NO	NO	100%	>200
Nov 2015	Held	HSL- Diagnostics	London	NO	NO	100%	>50
Jun 2015	Held	KTN-MediWales	Cardiff	NO	NO	100%	>25
Aug 2015	Held	Microfluidics	Pilani, India	NO	NO	100%	>50
Jul 2015	Held	KTN workshop on Advanced Materials and Processes	Sheffield, UK	NO	NO		
Jan 2016	Held	MeDe Innovation Annual Meeting	Newcastle, UK	NO	NO		

Ma 2016	Planned	World Biomaterials Congress	Montreal, Canada	NO	NO		
July 2016	Planned	ACerS' Innovations in Biomedical Materials and Technologies	Chicago, USA	NO	NO		
Jun 2016	Planned	UKSB Meeting,	London, UK	NO	NO		
Oct 2016	Planned	Bioceramics	Charlotte, USA	NO	NO		
Oct 2016	Planned	ETP – Nanomedicine	Heraklion, Greece	NO	NO		