

Connective Issues:

BSMB Newsletter



Committee:

Prof John Couchman (Chair), Prof Kim Midwood (Secretary),
Dr Tom van Agtmael (Treasurer), Ms. Laura Collins (Student rep),
Dr Michal Dudek (Post doc rep), Prof Qing-Jun Meng,
Prof George Bou-Gharios, Dr James Whiteford,
Dr Giovanna Nalesso, Dr Stephen Robinson,
Prof Steph Dakin & Prof Jerry Turnbull

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No. 94, January 2019

2 Editorial

Kim Midwood

2 Chair's letter

John Couchman

3 BSMB news

Mark your diary

Registration for Liverpool is OPEN

Welcome new members

Website news

James Whiteford

4 Good news

4 BSMB committee: join us - new committee members sought

5 ISMB news

Jo Adams

6 Upcoming BSMB Meetings

Spring 2019: Liverpool

Autumn 2019: UEA

George Bou-Gharios

Stephen Robinson

10 Bursary news

Qing-Jun Meng

12 Meeting reports

18 Current BSMB committee

19 Flyer: Liverpool 2019

Register now and submit your abstract before Feb 8th 2019!

Editorial

Welcome to the 94th Connective Issues. There is much to look forward to in the coming year! We return to our usual format of two BMSB meetings per year in 2019, with the Spring meeting taking place in April in Liverpool and the Autumn meeting in September in Norwich. We also usher in a new web site along with the new year, and we hope you enjoy the improved experience. If you have any striking images of matrix biology you'd like to be considered for showcasing on the website please contact bsmbadmin@bsmb.ac.uk. In addition, as part of your new years resolutions for 2019, why not consider:

- **Registering now for Liverpool 2019!** Early bird registration is **open**. Visit <https://bsmb.ac.uk> for more details about the meeting, including the programme, registration site, abstract submission site, as well as travel and accommodation information.
- **Submitting an abstract:** You can also now submit an abstract for Liverpool 2019. The deadline for this is February 8th 2019. There are many spots open for oral presentation of selected abstracts at this meeting, and there are also 3 poster prizes up for grabs!
- **Applying for a bursary:** applications for bursaries to attend Liverpool 2019 are now invited...please see below for more details.
- **Joining the BSMB committee:** we are seeking two new members from September 2019. Why not contact us if you would like to take an active part in shaping the future of the BSMB.....

Kim Midwood, Honorary Secretary

Chair's Letter

As the old year gives way to the new, we can reflect on a very successful 2018 for the BSMB. The year was, of course, dominated by MBE2018 held in Manchester. The science was of the highest calibre, the social events were enjoyable, the rain held off and I have received many favourable comments from colleagues and friends who attended from around the world. I am sure many of you will have seen the special newsletter (No. 93) that reports on the meeting.

All this would not have been possible without the support of the Wellcome Trust Centre for Cell-Matrix Research in Manchester, its Director, Karl Kadler, and the local organising team. I have to single out Ray Boot-Handford and Qing-Jun Meng who played a major role, took care of the details and put in a huge amount of work. Hosting MBE brings not only an administrative load, but carries financial risk also. However, as a result of high attendance and strong sponsorship I am pleased to say that we have no worries on this front. Many thanks to the sponsoring organisations and companies, as well as Ray and Qing-Jun, for all their support and efforts on our behalf.

The quieter than usual autumn for us has also provided the opportunity for a needed upgrade to our website. If you have not visited it yet, I encourage you to do so. Here I have to convey our thanks to James Whiteford who has devoted many hours of his time to this project. The website looks terrific and will serve us well in the years ahead.

Now our thoughts turn to the future, and our Liverpool meeting in the first week of April will soon be here. Details are included in this newsletter and I encourage our members, and especially our students, to attend. The programme looks great and for the first time this will be a joint meeting with Matrix

Biology Ireland. It has been impressive to observe the growth and success of this relatively new Society and we look forward to meeting our MBI colleagues in Liverpool. Also new will be our first BSMB Medal Lecture, awarded to an outstanding contributor to matrix biology. It will be a great pleasure for me to recognise one of the giants of our field, Ken Yamada.

Finally, I would like to wish all our members a happy, healthy and successful 2019. Please support the BSMB and encourage your colleagues in the matrix field to join if they have not yet done so. The BSMB continues to be a strong and vibrant society, but needs new blood at all levels. Anyone interested in joining the BSMB Committee is strongly encouraged to contact our Secretary, Kim Midwood, who can provide information and advice. Having been involved with the BSMB Committee for many years, I can assure potential members that it is collegial, enjoyable and very rewarding.

With best wishes,

John Couchman
BSMB Chair

Mark your diary

BSMB Spring 2019 Meeting
Liverpool April 8-9 2019

BSMB Autumn 2019 Meeting
UEA September 9-10 2019

BSMB Spring 2020 Meeting
University of Surrey April 2020

BSMB News

BSMB Spring 2019: joint meeting with Matrix Biology Ireland (MBI):

University of Liverpool, 8th - 9th April 2019



It is our great pleasure to invite you to attend this meeting in Liverpool. The meeting is organised by the British Society for Matrix Biology together with Matrix Biology Ireland, and will be hosted at the University of Liverpool. The conference will be held over one and a half days and includes 5 sessions covering the theme of “*Stroma, Niche, and Repair*”.

It will also feature the inaugural *BSMB Medal Lecture*; awarded for outstanding contribution to Matrix Biology.

Organisers:

George Bou-Gharios - Liverpool
Dimitrios Zeugolis - Galway

Invited speakers:

Tim Johnson (Sheffield/UCB Biopharma)
Erik Sahai (The Crick, London)
Cian O'Leary (Dublin)
Michelle Peckham (Leeds)
Olga Piskareva (Dublin)
Peter Friedl (The Netherlands)
Fiona Watt (KCL, London)
Manus Biggs (Galway)
Rama Khokha (Toronto, Canada)
Colin Jahoda (Durham)
David Abraham (UCL, London)
Michael Schmidt (Liverpool)

BSMB Medal Lecture:

Kenneth Yamada (NIH, USA)

Key dates:

- Registration open 1st January 2019
- Early Bird registration (£80 students, 100 members) and Abstract submission deadline is on 8th February 2019
- Bursary application deadline: March 1st 2019
- Oral presentation notification: 15th March 2019
- Closing registration 29th March 2019

For further information and to register, please visit: <https://bsmb.ac.uk>.

Website news:

We are pleased to announce that the new BSMB website is online at <https://bsmb.ac.uk>.

Members should be able to log in for the first time using their email address as their username and following the lost password protocol. In addition new members can apply to join through the website. The login credentials for the old website will not work on the new one.

If you have any difficulties please email bsmbadmin@bsmb.ac.uk and we will try to resolve them. Please also note that there is a posts page where we can highlight announcements etc. relating to the BSMB.

We would also like to remind our members if you have not already done so please email us at bsmbadmin@bsmb.ac.uk to say that you are happy to receive emails from us, this is a GDPR stipulation

You can also follow us on...

Instagram: [@matrixbiologyuk](#)

Twitter: [@BSMB1](#)

Facebook: [@BritishSocietyForMatrixBiology](#)

Welcome to new BMSB members!

(since June 2018)

Dr Kiran Riasat (Liverpool University)

Ben Calverley (Manchester University)

Michaela Balderstone (QMUL)

Dr Helen Dietmar (Newcastle University)

Dr Alex Gordon-Weeks (Oxford University)

Good news

In Print: Meeting Reports and Abstracts from the QMUL Autumn 2017 meeting are now in print in the International Journal of Experimental Pathology.

In Press: Abstracts from MBE2018 will soon appear in the International Journal of Experimental Pathology.

To share good news contact *Kim Midwood*.

BSMB Committee

Join the committee! Positions open ...

We are seeking two new members for the BSMB committee.

Any current member in good standing is eligible. Committee members formulate policy and have a major responsibility for organising BSMB meetings. It is expected

that each Committee member will take a major part in planning and organising one BSMB meeting during their tenure, be available to attend most Committee meetings, but also to attend occasional further meetings. Should more nominations than vacancies be received, an election may be held. Nominees should send a CV to the BSMB Secretary, Kim Midwood. Appointees become BSMB Trustees. It is recommended that those interested read BSMB Constitution and trustee status (www.bsmb.ac.uk).

Closing date: March 21st 2019. Enquiries to Kim Midwood or John Couchman.

News from the International Society for Matrix Biology

The ISMB has a new President (Prof. Sylvie Ricard-Blum, Lyon, France), a new Secretary (Prof. Josephine Adams, Bristol, UK) and a new Treasurer (Prof. Ruud Bank, Groningen, The Netherlands) and a new Vice-President will be elected soon. First we want to thank the Past President of the ISMB, Prof. Liliana Schaefer (Frankfurt, Germany), who did excellent work by extending and relentlessly promoting the activities of the Society. We also thank Dr. David Hulmes (Lyon, France), who played a pivotal role in the ISMB life as Secretary and Treasurer. We will do our very best to strengthen and further develop the ISMB and the extracellular matrix community world-wide in close collaboration with the ISMB Council and all the ISMB members and also look forward to strengthening links with the national and regional Matrix Biology Societies including BSMB.

Sylvie Ricard-Blum, Jo Adams and Ruud Bank

BSMB MEETINGS IN 2019

BSMB Spring 2019 Meeting

Liverpool University
April 8-9th 2019

Stroma, Niche, Repair

Organised by George Bou Gharios
together with Matrix Biology Ireland.



The conference will be over one and a half day and include 5 sessions covering the theme of “Stroma, Niche, and Repair” plus the BSMB Gold Medal Award Lecture, awarded this year to Professor Kenneth Yamada (NIH).

Selected abstracts from posters will be given 10 mins presentation to encourage younger investigators to participate in the meeting.

Registration open 1st January 2019
(www.BSMB.ac.uk).

Early Bird registration and Abstract submission deadline is on 8th February 2019 (£80 students, 100 members, non-member £130).

Late registration (£100 students, £120 members, non-member £150, corporate £500)

Closing registration 29th March 2019

Oral presentation notification: 15th March 2019

Social events: Wine Reception & Poster Viewing: Wine, beer and nibbles with posters on Monday evening (8th April, 6.15 -7 pm).

Conference dinner: A 3-course conference dinner will be held at 7.45pm, cost £40 (venue to be decided). After dinner, the famous Cavern is only minutes away.

Bursaries & prizes: Presenter and reporter bursaries will be available, and there will be prizes for poster and oral presentations. BSMB members will benefit from a reduced registration fee.

Accommodations: Several Hotels in the vicinity of the University have been reserved on first come first served basis. Hallmark Inn www.hallmarkhotels.co.uk quote “BSMB spring 2019” £69 B&B for single and £79 B&B for double room. (First come first served basis)

There are a number of other local hotels and B&Bs: <https://www.visitliverpool.com/plan-your-visit/visitor-centres>

Programme

Monday April 8th

11.00-12.40	Registration	Conference Office
12.45-1.00	OPENING remarks	
	Welcome and Introduction	George Bou-Gharios (Liverpool)
	Horizon Scanning in the Extracellular Matrix Biology	Alan Holmes (UCL, London/ GlaxoSmithKline)

1.00-2.00	SESSION 1 STROMA in Health and Disease	
Chairs	Tim Johnson (Sheffield/UCB Biopharma)	
1.00-1.30	3D tissue and cell jamming transitions in collective cancer progression	Peter Friedl (The Netherlands)
1.30 -1.40	Short Presentation from abstracts	TBC
1.40-1.50	Short Presentation from abstracts	TBC
1.50-2.00	Short Presentation from abstracts	TBC
2.00-2.30	Regulation of liver fibrosis by macrophages	Michael Schmid (Liverpool)
2.30-4.00	Tea and Coffee (Poster and Supporter stand viewing)	AGM - Venue
4.00-4.30	SESSION 2 NICHE- Microenvironmental regulator of cell behaviour	
Chairs	Kim Midwood (Oxford)	
4.00-4.30	Generation and maintenance of the cancer-associated fibroblasts	Erik Sahai (The Crick, London)
4.30-4.40	Short Presentation from abstracts	TBC
4.40-4.50	Short Presentation from abstracts	TBC
4.50-5.00	Short Presentation from abstracts	TBC
5.00-5.30	Functional heterogeneity of human skin fibroblasts	Fiona Watt (KCL, London)

BSMB Medal Lecture Chair: John Couchman		
5.30-6.15	“Dynamic Cell-Matrix Interactions in 3D Cell Migration and Organ Morphogenesis”	Kenneth Yamada (NIH, USA)
6.15-7.45	Drinks Reception (Poster and Supporter stand viewing)	
	Conference Dinner Venue: TBC	

Tuesday April 9th

9.00-10.30	SESSION 3 MBI Sponsored Session innovative material science to regenerate, reconstruct and interface with tissues	
Chairs	Dimitrios Zeugolis (Galway)	
9:00-9.20	Developing the next generation of biocompatible and adaptable material platforms-beyond nanobiology	Manus Biggs (Galway)
9:20-9.30	Short Presentation from abstracts	
9:30-9.50	Engineering extracellular matrix analogues to model the epithelial Interface in 3D: prospects for developing novel in vitro models and tissue regenerative medical devices	Cian O'Leary (Dublin)
9:50-10.00	Short Presentation from abstracts	
10:00-10.20	Reconstruction of Metastatic Tumour Microenvironment Using Collagen-Based Scaffolds	Olga Piskareva (Dublin)
10:30-11.00	Tea and Coffee (Poster and Supporter stand viewing)	
11.00-1.00	SESSION 4 Repair, regeneration, and the cytoskeleton organization	
Chairs	Kevin Hamill (Liverpool)	
11:00-11.30	Therapeutic tissue engineering Lessons from developmental biology	Colin Jahoda (Durham)
11:30-11.40	Short Presentation from abstracts	
11.40-11.50	Short Presentation from abstracts	
11.50-12:00	Short Presentation from abstracts	
12.00-12;30	Understanding the role of MEGF10 in skeletal muscle stem cells	Michelle Peckham (Leeds)
1.00 – 2.00	Lunch – Venue: University of Liverpool – Teaching Hub.	

2.00-3.30	SESSION 5 Tissue development, homeostasis, remodeling and fibrosis	
Chairs	David Abraham (UCL, London)	
2:00-2.30	Metalloprotease inhibitors regulate stem cell niches	Rama Khokha (Toronto, Canada)
2:30-2.40	Short Presentation from abstracts	TBC
2.40-2.50	Short Presentation from abstracts	TBC
2.50-3.00	Short Presentation from abstracts	TBC
3.00-3.30	Transglutaminases in tissue scarring and fibrosis	Tim Johnson (Sheffield/UCB Biopharma)
3.30-4.00	Presentation of Prizes Close of Meeting	
4.00-7.00	BSMB Committee Meeting Room G12-15 IACD	

BSMB Autumn 2019 Meeting

*University of East Anglia
September 9-10th 2019*

Cell adhesion networks in health and disease

Organised by Stephen Robinson

Bursary News

Dear BSMB members,

I am writing as the Chair of the BSMB Bursary Committee to promote the BSMB bursary scheme, which is to encourage early career (non-tenured) BSMB members to attend meetings relevant to matrix biology. I would like to remind you of the application process, as well as highlight a few key facts:

Several types of bursary are offered:

BSMB bursaries: Conference Presenter | Conference Reporter – to attend one of the biannual BSMB meetings.

MBE/ASMB bursaries – to attend meetings organised by Matrix Biology Europe (MBE) or the American Society for Matrix Biology (ASMB)

Other bursaries – to attend other national and international meetings to present work relevant to matrix biology.

For all types of BSMB bursaries:

- Applicants should be non-tenured scientists, although preference will be given to those at the early stages of their career (ie PhD students or up to 6 years post-doc). In the case of application numbers exceeding available bursaries, the quality and impact of the work to be presented together with previous record of BSMB bursary support and attendance of BSMB meetings will also be taken into account.
- Completed application form with supervisor's recommendation, together with one-page curriculum vitae, should be sent to Qing-Jun Meng, Chair of the BSMB bursary committee (qing-jun.meng@manchester.ac.uk).
- The application should be accompanied by a copy of the abstract to be presented at the meeting (except for the Reporter Bursaries, see below).
- Bursaries will be paid by the BSMB Society Treasurer Tom Van Agtmael (tom.vanagtmael@glasgow.ac.uk) after the meeting, upon presentation of receipts.

- Applications will only be considered if they are submitted on a current Bursary form appropriate to the categories listed below. These forms will be available on the new BSMB website in due course).
- The applications will be reviewed rapidly by the Committee and applicants will be informed of the outcome in advance of the meeting registration deadline.

For bursaries to attend BSMB Annual Meetings:

- The qualifying BSMB membership period is 84 days (to the first day of the meeting). Membership subscription status should be up-to-date at the time of sending in the application.
- The deadline for receipt of bursary applications will be noted on the meeting information pages of the website.
- The maximum amount of a bursary is at £250.
- There are two types of bursaries: the Presenter Bursary (given to BSMB members who are presenting their own research data at the meeting) and the Reporter Bursary (given under the condition that the recipient participates in the production of a short report of the meeting).

For “other meetings” within or outside the UK to present work relevant to matrix biology:

- The qualifying BSMB membership period is 1 year. We will consider applications for these awards on a rolling basis all year round.
- The amount of the award depends on the location of the meeting, and will be up to £150 for UK meetings and £400 for meetings elsewhere in the world.
- Applicants must be contributing a poster or a talk, AND a short meeting report will be expected, which will be circulated in the BSMB newsletter and posted on the BSMB website. The meeting report should be submitted within 1 month of the end of the meeting.
- The work described in the abstract must be novel and of a quality that would reflect well as a BSMB-supported contribution. No

applicant will receive more than one of these awards per calendar year.

- No applicant will receive more than three of these awards.
- Bursaries will only be considered if they are submitted on a current Bursary form (other meetings).

For bursaries to attend MBE and ASMB meetings:

- These meetings are held every two years, BSMB members are encouraged to attend.
- For MBE/ASMB meetings, the qualifying membership period is 6 months.
- The deadline for receipt of bursary applications will normally be 6 months before the meeting opens.
- The maximum bursary amount is at £500 for MBE and £600 for ASMB.
- Applicants must be contributing a poster or a talk. The work described in the abstract must be novel and of a quality that would reflect well as a BSMB-supported contribution.
- Applicants must participate (ideally together with other bursary recipients) in producing the written report of the conference for posting on the BSMB website.
- No applicant will receive more than three of these awards.
- Bursaries will only be considered if they are submitted on a current EuMB/ASMB bursary form.

Please note: To be eligible for a bursary to attend MBE/ASMB meetings or “other meetings”, the applicant must have attended at least one BSMB annual meeting. Therefore, I would advise PIs to encourage your new students/post-docs to: 1) join the BSMB; 2) apply for a BSMB meeting bursary (Presenter or Reporter) to attend at least one BSMB annual meeting.

We look forward to receiving many applications to the above bursaries.

Qing-Jun Meng

Meeting Reports

ASCB|EMBO Meeting 2nd-6th December 2017 Philadelphia

Report By Sean Giblin, Final Year PhD Student, University of Oxford

The autumn 2017 ASCB|EMBO Meeting convened at the Pennsylvania convention centre in central Philadelphia on 2nd – 6th December 2017 and was jointly-hosted by the American Society for Cell Biology (ASCB), and the European Molecular Biology Organisation (EMBO).



The meeting had over 6000 attendees, and offered a wide range of symposia and exhibits, as well as ~2800 poster presentations, encompassing the latest research in the fields of cell biology, genetics and molecular biology. Given this diverse program, the meeting still managed to offer specialised symposia on the extracellular matrix (ECM) and cell-matrix interactions.

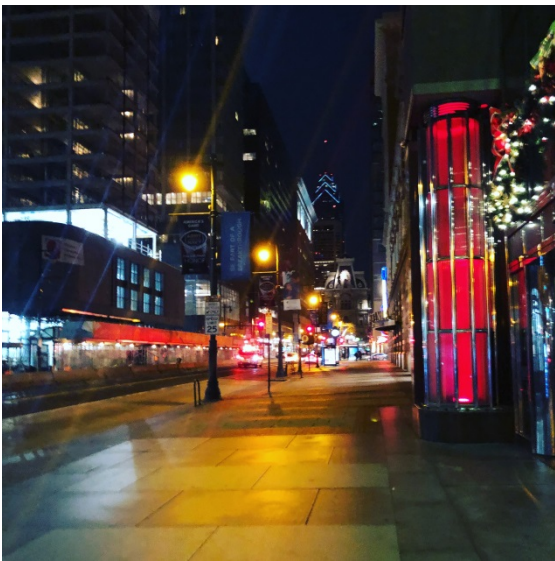


The meeting began on Saturday 2nd December, with an introductory speech by the 2017 ASCB President Dr Pietro De Camilli who reported that 67 new ASCB fellows had been admitted in the past year. In his speech, Dr De Camilli stated that “science is an international endeavour”, and this was proudly the case at the meeting, as delegates had travelled from every continent; clearly a testament to the quality of symposia on offer.

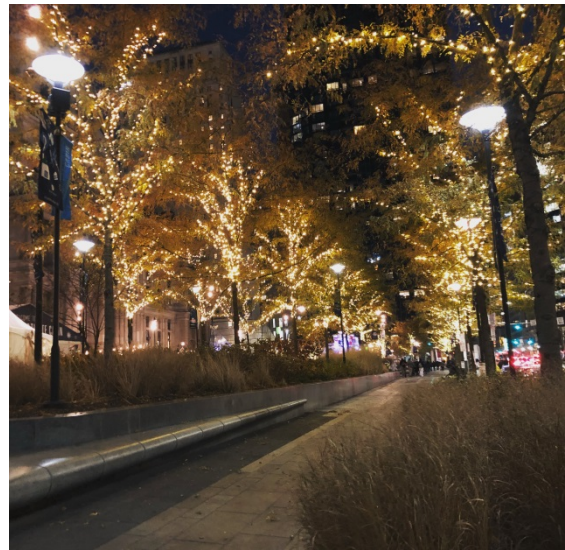


Shortly after, the Fred Kavli keynote lecture was performed by Rockefeller University Professor, and president of the Chan Zuckerberg Initiative (CZI), Cornelia “Cori”

Bargmann; who explained that the CZI is a philanthropic organisation set up by Facebook co-founder Mark Zuckerberg and his wife Priscilla Chan MD, which intends to use the fortune generated by Facebook to cure, prevent and manage all diseases by the end of the century. To do this it created a \$600M Chan-Zuckerberg Biohub collaboration between several California universities, and is supporting the “Human Cell Atlas initiative”, to create an open source reference map characterising every cell in a healthy human body. The CZI also aims to improve ‘preprint’ paper access, and develop artificial intelligence to speed up research, and will develop funded “challenge networks” for studying neurodegenerative diseases.



Later that night, around 100 grad students and post-docs hit the town for the “Ask a Scientist” bar night, and walked out into central Philly wearing T-shirts or carrying signs saying “I’m a scientist, ask me about my research”; in the hope of engaging the locals in lively scientific conversation.



The meeting offered a hugely varied program of talks, running concurrently from 8am-6pm daily. Each day of the conference also featured additional panels, workshops and career development programs for grad students and early stage researchers, with topics including science communication, public policy, laboratory management and CV workshops.

The first symposia and poster presentations commenced Sunday 3rd December, and were themed around cytoskeletal dynamics. Here, Andrew Kennard (Stanford, CA) described that keratinocytes in vivo, initiate rapid migration following wound healing and cease migration alongside a burst of myosin localisation at the rear of the lamellipodium. Later, Alyson Smith (Scripps Research Institute, CA), showed via TIRF microscopy, that myosin IIA regulates red blood cell membrane morphology, and concavity.



Later that day, the E.E Just and Keith R. Porter prizes were awarded to Professor Joann Trejo (University of California, San Diego), for her work on G-protein coupled receptors in endothelial dysfunction; and to Scott Emr (Cornell University, NY), for his discovery of ESCRT complexes used in vesicle transport.



On Monday 4th December, many symposia covered cell adhesion and migration themes. Here, Kamyar Esmaili (Temple University,

PA), showed that crosslinking in the extracellular matrix (ECM) regulates invadopodia dynamics; and later, Jess Hebert (Koch Institute, MA) revealed exciting quantitative mass spectrometry data, showing tumour and metastatic specific ECM niches from breast cancer cells. Furthermore, the prestigious EMBO gold medal prize was awarded to Prof. Maya Schuldiner (Weizmann Institute, Israel) for her work on advancing the understanding of protein synthesis, trafficking and quality control.



On Tuesday 5th December, symposia topics included tissue structure and cell-cell interactions. Here, Rachel Jerrell (Vanderbilt University, TN) showed using traction force microscopy and polyacrylamide gels mimicking the biomechanical rigidity of healing wounds, that foetal fibroblast differentiation to myofibroblasts is impaired by rigid ECM and TGF β -1 stimulation. Between symposia, the winning entries of the “Celldance” cell imaging video competition were premiered, with beautiful videos displaying actin filament turnover, and *Neisseria meningitidis* in human capillaries (Fritz-Laylin Lab, MA; Duménil, Institut Pasteur, France)

The ASCB's prestigious E.B Wilson medal was awarded to Ulrich Hartl (Max Planck Institute of Biochemistry, Germany) and Arthur Horwich (Yale, CT), for their collaborations in the late 1980's that helped unravel the molecular machinery that drives protein folding.



On Wednesday 6th December, after final remarks, the conference closed. Altogether, the ASCB|EMBO 2017 meeting in Philadelphia was a great success. The quality of the speakers was truly excellent, and due to the conference's large size, even more specialised matrix biology subjects had their own niche.



Thank you to the BSMB for supporting my poster presentation.

Tendon UK Meeting April 11-12th 2018

By Neil Marr, RVC.

The first Tendon UK meeting was hosted by University of Oxford at Worcester College, and attracted over 80 national and international attendees. This meeting explored translational themes emerging from tendon research, with sessions covering basic science to clinical trials. The conference was organised by Stephanie Dakin, Sarah Snelling, Pierre-Alexis Mouthuy, and Andrew Carr, with generous sponsorship from Biotechne, the Company of Biologists, ThermoFisher Scientific, and the Journal of Translational Sports Medicine.

Session 1. Disease mechanism. Chair(s): Prof. Stephanie Dakin.

Stephanie Dakin (Oxford) initiated the meeting with an in-depth discussion of inflammatory mechanisms in human tendon disease. Michael Kjaer (Copenhagen) provided a thorough overview of the known physiological and pathological adaptations that tendons undergo in response to exercise. Adam Jørgensen (Copenhagen) shared how ¹⁴C bomb-pulsing can detect abnormal collagen turnover prior to the onset of tendinopathy. Lindsay Crowe (Glasgow) closed the session by proposing that alarmins S100A8 and S100A9 act as pro-inflammatory mediators of early tendinopathy.

Session 2. Tendon physics and mechanics. Chair(s): Prof. Mark Thompson.

Following a brief poster break, Dawn Elliot (Delaware) discussed multiscale mechanical loads and how they transfer across different

structural subunits in normal and damaged tendons. Jess Snedeker (Zurich) described how advanced glycation products contribute towards the decline in tendon homeostasis. Karl Kadler (Manchester) presented an elaborate description of tendon collagen fibril development, before shedding light on the circadian clock's control over collagen production.

Rene Svensson (Copenhagen) shared observed discrepancies in multiscale force transmission between whole tendon and individual collagen fibrils. The final talk, delivered by Nathalie Crevier-Denoix (Alfort), focused on a study showing how energy-storing tendons adapt to loading regimes after four months of training.

Session 3. Young investigator session.

Chair(s): *Prof. Philippa Hulley & Prof. Graham Riley.*

The third session focused on research performed by early-career researchers, starting with Angelina Schoenenberger (Zurich) on how mechanically-loaded tendon cells stimulated with IL-1 β exhibited reduced NF- κ B pathway activation. Next, Wataru Morita (Oxford) showed IL-1 β stimulation increases TGF β and BMP expression in diseased tendon fibroblasts. Stefania Wunderli (Zurich) shared how distinct cell culture conditions influenced tissue mechanics, whilst Fabian Passini (Zurich) showed that mechanically-loaded tendon fascicles exhibited a magnitude-dependent increase in calcium signalling.

Antonis Giannopoulos (Copenhagen) presented data suggesting that crosslinking tendon constructs increases peak modulus but decreases cell retention. Adam Janvier (Liverpool) continued the theme of biomaterials with his talk about developing a 3D-printed bioreactor to characterise load-

induced tenogenic phenotypes using a collagen 'barcode'.

Session 4. Biomaterials and cell-matrix interactions. **Chair(s):** *Dr. Sarah Snelling.*

The second day started with Matt Dalby (Glasgow) describing how nanoscale cues driving differentiation of mesenchymal stem cells can promote healing. Edward Stace (Oxford) discussed how normal and disease tendon fibroblasts responded to electrospun material. Jess Snedeker stepped in to deliver Amro Hussein's (Zurich) talk regarding a myofibroblast-like phenotype observed in tendons placed under static tension. Sarah Snelling (Oxford) closed with a review of biomaterial-based tendon repair, emphasising that the endogenous response to biomaterials must be considered.

Session 5. Bioreactors in tendon tissue engineering. **Chair(s):** *Dr. Pierre-Alexis MOUTHUY.*

David Butler (Cincinnati) opened the fifth session with a lesson on the history and potential of bioreactors in tendon research. Next up was Hazel Screen (London), who discussed how her research led to the development of a 3D fibre-composite system capable of mimicking local tendon mechanics. The final speaker was Sarah Walters (Oxford) who developed mathematical models capable of informing bioreactor-based experimental design.

Session 6. Clinical trials and translating science to the clinic. **Chair(s):** *Prof. Jonathan Cook.*

The final session provided an in-depth look at translational aspects of tendon research, starting with Jonathan Cook (Oxford) who reported that clinical evidence supporting

patch augmented rotator cuff surgery was poor. Hayley Morris (Oxford) used a clinically-trialled bioactive suture (BioYarn) as a model framework to demonstrate how biomaterials can be successfully translated from bench to bedside.

Next, Jacqueline Thompson (Oxford) described the feasibility of heel-rise endurance tests to test the efficacy of platelet-rich plasma treatment for tendinopathy. Andrew Carr closed the meeting with a thorough dispute of the regulatory frameworks and implementation of surgical implants used for tendon surgery, finishing with an update from the first ever in-man trial of a clinically-trialled bioactive suture that mimics normal tendon function.

To close the meeting, Adam Jørgensen (Copenhagen) and Edward Stace (Oxford) were awarded best oral presentation for exceptional talks demonstrating the breadth of research shared over the two-days. The meeting was a great success, bringing together a wealth of expertise to reflect on and discuss the past, present, and future of tendon research.

Current BSMB Committee

Chairman, Prof. John Couchman
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john.couchman@bric.ku.dk

Honorary Secretary, Prof. Kim Midwood
University of Oxford;
kim.midwood@kennedy.ox.ac.uk

Honorary Treasurer, Dr. Tom Van Agtmael
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BSMB spring meeting 2019 

organised jointly with MBI 

University of Liverpool

8th - 9th April 2019

Invited speakers:

Peter Friedl (The Netherlands)
Fiona Watt (KCL, London)
Kenneth Yamada (NIH, USA)
Rama Khokha (Toronto, Canada)
Colin Jahoda (Durham), David Abraham (UCL, London)
Michael Schmidt (Liverpool), Tim Johnson (Sheffield/UCB Biopharma)
Erik Sahai (The Crick, London), Cian O'Leary (Dublin), Michelle Peckham (Leeds), Olga Piskareva (Dublin), Manus Biggs (Galway)

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