Connective Issues:

BSMB Newsletter

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Editorial

Welcome to the 109th Issue of our Connective Issues newsletter.

First of all, I would like to welcome the 37 new members (including 21 student members) who have joined our Society in the last 6 months! BSMB recognises and cultivates next generation matrix biologists. To this end, we have recently expanded the early career researcher representatives on the Committee. In addition to Hannah Evans (PhD Rep), we are pleased to welcome Cathy Park (Post-doc Rep) and Jack Roberts (ECR/Fellow Rep) to the Committee. These new bloods have already started to bring fresh ideas, enthusiasm and creativity to the BSMB (read on for the inaugural "ECR Achievements" and "ECR Spotlight" sections).

Secondly, a massive thank you to Doug Dyer for organizing such a fantastic meeting in Manchester and for his excellent service to the BSMB Committee. It felt like a family gathering of generations of matrix biologists, and Manchester seemed a well-suited venue for this reunion.

Looking ahead, there will be several exciting BSMB meetings to look forward to in 2027 (Southampton and Liverpool) and 2028 (Oxford). Please read on and pencil in your diaries. There is also an open Committee position available, so please send your nomination!

Finally, a reminder that the "Special Issue: Extracellular Matrix in Health and Disease" across 3 Cell Press journals is published online! Suggestions are welcome on how best to continue this work and raise the profile of matrix biology.

Keep cool and enjoy the summer!

Qing-Jun Meng, Honorary Secretary

Chair's letter

Dear BSMB members,

I hope this edition of the newsletter finds each of you well and enjoying some clement weather. It was fantastic to see so many of you in person who attended at the Spring BSMB meeting in Manchester in April; many thanks to Doug Dyer and his organising team for a memorable few days. An additional note of thanks to Doug as he rotates off the BSMB committee after three years of service, your hard work and support of the BSMB has been much appreciated. Talking of changes in committee personnel, at the Spring meeting we appointed two new members; Cathy Park and Jack Roberts will represent post docs and early career researchers respectively. We are looking forward to working with you both in these roles and we encourage members to contact Cathy or Jack if you have anything you'd like to raise with BSMB; ideas on how we can best support your communities are always well received.

At the Spring meeting we also held our AGM, where we shared news that, following the closure of the International Journal of Experimental Pathology (IJEP) in December 2025, going forward we will partner with the Journal of Histochemistry and Cytochemistry (JHC). BSMB has partnered with IJEP for over three decades, and their longstanding support has come in many forms. This includes the publication of BSMB meeting abstracts, first in paper format, moving online with the inaugural electronic publication of abstracts from the Cambridge Autumn 2005 meeting. IJEP has also provided support for poster prizes that are awarded at every single meeting to students, post docs and early career researchers. The Journal has sponsored the Fell Muir Award since its inception in 2007 (https://bsmb.ac.uk/page/fell-muir-award/ [bsmb.ac.uk]) and the BSMB Medal award since it started in 2019, enabling us to

recognise, and to bring to our meetings, leaders in Matrix Biology from around the world (https://bsmb.ac.uk/page/bsmb-medal-award/ [bsmb.ac.uk]). This was most recently exemplified by our 2026 BSMB Medal awardee, Joanne Murphy Ullrich, from whom we heard an inspirational talk at the Spring meeting. Together the IJEP Editorial Board, led by Professor David Katz as Editor in Chief, and the IJEP Trustees have worked hard to forge this partnership with BSMB and so many of us as members have benefitted from their support. On behalf of the BSMB, and myself personally, I'd like to note how appreciative we are of this support, how it has shaped the way we can support our members, and to acknowledge the personal contributions of all at IJEP that made it possible. Moving ahead, as sad as the end of this partnership is, equally we are excited about embarking on a new collaboration with JHC. JHC is a long-established, and well respected, journal with a track record in supporting tissue and matrix biology and is a fantastic match for BSMB. We're delighted to be working with the JHC editorial team as we move ahead and you can read much more about the aims and ambitions of the journal as we move toward the formal launch of this partnership in a future Connective Issues.

For those travelling to Oulu for MBE2026 I wish you safe travels and I look forward to seeing you there. Please do come along on Friday morning to the Dick Heinegaard Award session and support the BSMB nominee Lorna Milne from Nottingham. Finally, a reminder that we have two meetings in 2027 - you can find more details of Spring 2027 in Southampton and Autumn 2027 in Liverpool below.

All the very best,

Kim Midwood, BSMB Chair

BSMB News

Mark your diary

BSMB Spring 2027 Meeting in Southampton:
Nature's matrix: Evolution to Innovation
5-6th April 2027
University of Southampton

BSMB Autumn 2027 Meeting in Liverpool:
The Matrix in Balance
6-7th September 2027
University of Liverpool

BSMB Spring 2028 Meeting in Oxford:
The Extracellular Matrix as a Transition, Junction and Barrier
Mid- late March 2028
University of Oxford

Dick Heinegård European Young Investigator Award - nominations outcome

Dr Lorna Milne from University of Nottingham was nominated by the BSMB for the Dick Heinegård European Young Investigator Award. Lorna will deliver an oral presentation at the MBE 2026 conference in Oulu, Finland, alongside the other candidates nominated by

their respective affiliated European Matrix Biology Society. The winner of the award will be announced at the meeting in July. Good luck Lorna!

By Anna Piccinini (Chair of the ECR Award Committee)

New committee members

Dr. Cathy Park (Post-Doc Rep) is a postdoctoral researcher working at the interface of extracellular vesicle (EV) biology, extracellular matrix (ECM) research, and advanced imaging technologies. Cathy completed her PhD at the University of Sheffield, where she investigated TGF-β-mediated EV signalling within the head and neck tumour microenvironment. She later joined the Wellcome Matrix Centre Discovery Research Platform to help develop imaging workflows capable of visualising ECM structure and function across scales. Her current work combines tissue clearing and light-sheet microscopy to map three-dimensional matrix architecture in ovarian cancer metastasis, alongside single-molecule DNA-PAINT imaging to investigate how cancer derived EVs engage with matrix components at the nanoscale and contribute to metastatic niche formation. Cathy is delighted to take on the role of postdoctoral representative and warmly welcomes members of the postdoctoral community to get in touch with any questions, ideas, or simply for a chat.

Dr Jack Roberts (ECR/Fellow Rep) is a molecular biologist with a key interest in osteoarthritis (OA) research and the application of genetics to understand the functional mechanisms underpinning this disease. He completed his PhD under the supervision of Prof John Loughlin and Dr Sarah Rice at Newcastle University in 2024, where he identified the E3 ubiquitin ligase gene WWP2 as a target of OA genetic risk. Subsequently, he continued in the laboratory of Dr Sarah Rice using proteomics to investigate how modulation of the collagen glycosylation enzyme COLGALT2 impacts cartilage ECM development. In June 2026, Jack began an Early Career Researcher Fellowship funded by the Vivensa Foundation in the laboratory of Prof David Young (also Newcastle University). In this role, he will utilise transcriptomics to screen a panel of candidate OA effector genes prioritised using a machine learning pipeline to provide insight into how this widely prevalent disease manifests and degrades cartilage ECM.

ECR Achievements

BSMB Spring Meeting Prize Winners

Following the announcement for the “ECR Achievements” section in the last issue, we are thrilled to be celebrating all of the poster and oral presentation winners from the previous BSMB meeting held at the Whitworth Art Gallery in Manchester hosted by Dr. Doug Dyer.

Poster prize winners: Jack Llewellyn, Fabianna Tennant, Jack Roberts, Ayodele Ogundero, Alex Koch, H Davies-Strickleton, Matthew Burgess, Emily Wright.

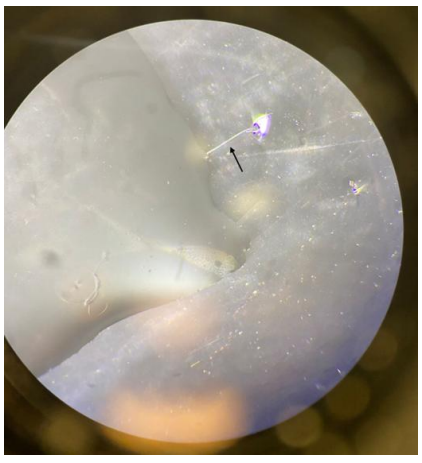
Talk winners: Iashia Nabi and George Thompson.

New GAG Pre-Print

Congratulations to Dr. Lorna Milne and the team at Nottingham GlycoAnalytics Hub for their new pre-print describing the development of ToF-SIMS for in-situ GAG analysis, enabling concurrent spatial and compositional GAG analysis without the need for enzymes or dyes! (Available on bioRxiv: https://www.biorxiv.org/content/10.64898/2026.05.06.723150v1.full.pdf). We look forward to this moving towards publication!

Cool Lab Pics 😎

Alex Koch and Cathy Park from the Manchester Cell-Matrix centre reproducing a protocol from Viola Vogel's lab. The arrow points to fibronectin stretched from a droplet!



Exciting new tools

Daisy Flatman and Alex Koch visited King's College London to learn Brillouin microscopy - a non-invasive optical imaging technique that measures the microscopic viscoelastic and mechanical properties of living cells and tissues using light. They looked at changes in the basement membrane of Alport syndrome tissue. Contact alex.koch@manchester.ac.uk to learn more and trial the system at the University of Manchester.

If you have anything that you'd like to be included in the next BSMB newsletter, please fill in the form below. We look forward to celebrating more ECR achievements in the next issue!

https://forms.cloud.microsoft/e/8QRqeMSi12

By Hannah Evans, Jack Roberts & Cathy Park

ECR Spotlight

To showcase ECR BSMB members and affiliated matrix biologists across career stages (spanning PhD, postdoc and ECR Fellows) , we are introducing a new section in the newsletter - "ECR Spotlight". Please reach out if you wish to nominate (or self-nominate) members of our community for the next edition! Any nominations, together with the written consent of the proposed nominee should be forwarded to Dr. Cathy Park, the postdoc representative (cathy.park@manchester.ac.uk) or Dr. Jack Roberts, the ECR representative (jack.roberts@newcastle.ac.uk).

Our first ECR spotlight is Julia Bernardi of the University of São Paulo. Currently studying for her PhD, Julia joins the Manchester Cell-Matrix Centre for three months on the Visiting Scholar Scheme. The scheme is aimed at hosting matrix biologists from under-resourced groups or institutions to learn cutting edge techniques at Manchester. Coming all the way from Brazil, we thought we'd highlight her research and experience in the UK so far.

1. Could you tell us a bit about your PhD research and what drew you to matrix biology?

''In my PhD project, I study the interaction between extracellular vesicles released by tumour cells and the endothelial barrier, and how this affects metastasis and the formation of pre-metastatic niches. To investigate this, I use breast cancer and endothelial cell cultures in microfluidic systems to simulate the physical conditions of blood and lymphatic circulation in vivo. I'm here to see how the matrix changes in this system and if the importance of this in vesicle-endothelial interactions.''

2. What specific techniques or approaches are you learning during your time at Manchester, and how do you plan to take these back to your work in São Paulo?

''I am using my time at the University of Manchester to explore aspects that are not a major focus of my laboratory's research in Brazil, particularly the endothelial glycocalyx and and the glycosaminoglycans present in the vesicles. In addition, the facilities available at the university have given me the opportunity to learn new microscopy techniques and gain experience with equipment that is not easily accessible in Brazil.

3. What has surprised you most about life and research culture in Manchester — and is there anything you're planning to take home beyond the science?

''Definitely! So far, I've had a very positive experience with all the research groups I've been involved with here in Manchester. I've had the opportunity to take part in several activities that go beyond science itself, including sessions focused on wellbeing and mental health. It has given me ideas about practices and initiatives that could potentially be implemented at my own university to help create a more positive research culture.''

By Cathy Park and Jack Roberts

BSMB committee vacancies

Join the Committee! One position available…

There is one Committee position becoming available:

Any current BSMB member in good standing is eligible for this post. Committee members formulate policy and have 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, and be available to attend most Committee meetings, and occasional further meetings as required. Appointees become BSMB Trustees. It is recommended that those interested read BSMB Constitution and trustee status (www.bsmb.ac.uk).

Nomination process

Nominations for a committee member of the BSMB can be made by any 2 members of the

BSMB, or members of the current BSMB Committee.

Any nominations, together with the written consent of the proposed nominee should be forwarded to the Honorary Secretary, Professor Qing-Jun Meng, by Monday 15th August 2026. These can be sent by e-mail to qing-jun.meng@manchester.ac.uk.
In the event of more nominations for the number of vacancy, a ballot of the membership by e-mail will be held. To this end, it would be helpful if nominees can send a brief (one page) CV together with a short statement outlining their aspirations for the Society should they be elected. In the event of no nominations, the Committee may elect to nominate and appoint a person to the post of BSMB committee member.

WELCOME TO NEW BSMB MEMBERS!

STUDENT MEMBERS
Maria Lazari
Nicole Blacknell - Sheffield
Lina Akinyi Ochieng - Oxford
Miriam Hernandez-Meadows - Manchester
Luke Power - Manchester
Elena Montero Bragado - Nottingham
Rose-Marie Harrison - Manchester
Haifa Majali - Liverpool
Elena Faull - RVC
Avika Srivastava - Nottingham
Sophie Skingsley - QMUL
Ayodele Ogundero
Devnandan Chatterjee - Birmingham
Abi Hession - Warwick
Yui Matsubara - Manchester
An Yan
Caitlin Otto - Manchester
Andrew Love - Aberdeen
Cagla Erdas - Newcastle
Paris Alexandros Kalli - Glasgow
Rebecca Martin - Manchester

FULL MEMBERS
Katerina Apolinova - Southampton
Dharshika Pathiranage - Manchester
Martina Lerche
Heather Boyes - Nottingham
Harry Young - Manchester
Emiliya Seytyagyayeva - Manchester
Max Nobis - Manchester
Jenny Scott - Manchester
Elizabeth Miroshnik - Manchester
Hannah Durrington - Manchester
Jack Roberts - Newcastle
Catherine Disney - Manchester
Tara Gleeson - Manchester
Nicole Ong - Dundee
Sarah Rice - Manchester
Luke Thornton - Nottingham

By James Whiteford (Treasurer of BSMB)

Meeting highlights:

BSMB Spring 2027 Meeting in Southampton: Nature's matrix: Evolution to Innovation
Dates: April 5th-6th, 2027
Location: University of Southampton

We are excited to announce that registration will open later in the year, for the BSMB Spring 2027 meeting in Southampton. Hosted by Dr. Angus Wann from the University of Southampton this meeting will be April 5th-6th. We look forward to welcoming you to our leafy Highfield Campus, a short distance from Southampton city Centre. In these surroundings, we invite you to a two-day exploration of natural and engineered matrix, transporting you from marine habitats, through microbial niches, into the world of biomaterials both inspired by nature and designed to be home to organoids and other biomedically-driven scientific questions. But don’t fear, this meeting will also have an open

session providing the opportunity for the very best of matrix biology, without a fixed theme, to be presented in our usual open, friendly environment.

ECM is ubiquitous- defining, supporting, sustaining microbial, plant and animal cells and also, increasingly, engineered in the laboratory to recreate these worlds and beyond.

This meeting will feature an all-inclusive range of extracellular matrix research. It will aim to draw together ideas and innovations from across the matrix research, bridging Natural systems and laboratory biomedical innovation from natural to the synthetic, fundamental to biomedical.

Please join us on the South coast to hear about and share your matrix.

Important dates:
Registration start: 1st October, 2026
Registration late date: 21st Feb, 2027
Registration end date: 1st March , 2027
Abstract start: 1st October, 2026
Abstract end date: 21st Feb, 2027

By Angus Wann

BSMB Autumn 2027 Meeting in Liverpool: The Matrix in Balance
Dates: 6-7th September 2027
Location: University of Liverpool

The 2027 Autumn BSMB will be held in early September in Liverpool. The meeting will have a theme of "The Matrix in Balance", exploring how extracellular matrix synthesis and degradation drive major diseases including fibrosis, cancer and arthritis, and how harnessing our understanding of these mechanisms can drive translational opportunities. Bringing together national and international leaders, while showcasing superb work of ECRs in the field, the meeting will provide an open, inviting and engaging forum to discuss progress in this important area. The conference will take place at the University of Liverpool's city-centre campus with easy access to hotels and the conference dinner venue. We look forward to welcoming you to what will be a thought-provoking and exciting BSMB meeting in one of the UK's most lively and iconic cities.

By David Wilkinson

BSMB Spring 2028 Meeting in Oxford: The Extracellular Matrix as a Transition, Junction and Barrier
Dates: March 2028
Location: University of Oxford, UK

From tissue interfaces and developmental patterning to compartmentalisation, regeneration and disease, the extracellular matrix defines boundaries and connections. Talks will discuss how ECM gradients, architecture, mechanics and composition shape tissue and organ identity and function. This will be explored across temporal and pathological transitions - development to aging; health to malignant and non-malignant disease.

By Sarah Snelling

BSMB Bursaries

BSMB Bursaries and Couchman Travel Awards are available. Current BSMB members are encouraged to apply for bursaries to present their matrix related findings in conferences. To apply, please submit a Bursary Form relevant to the application (these can be found on our website), a pro-forma CV and your abstract for the meeting.

1) **Reporter bursaries (national)**: These bursaries are maximum £300 and are

designed to support participation of the non-tenured early career researchers (i.e. PhD students or post-docs) in our BSMB Spring and Autumn meetings and in national (UK) meetings. Presenting at the meeting (either oral presentation or a poster) is the main condition of the bursary, and bursaries are given under the condition that the recipient produces a short (500 words) report of the meeting. **Applicants should have been a member of the BSMB for at least 3 calendar months prior to the opening (first day) of the meeting**. Membership subscription status should be up to date at the time of sending in the application.

2) **Reporter bursaries (international)**: These bursaries remain open to the non-tenured early career researchers (i.e. PhD students or post-docs). The awards are for up to £600 for meetings elsewhere in the world (~5 awards per year). Presenting at the meeting (either oral presentation or a poster) is the main condition of the bursary, and bursaries are given under the condition that the recipient produces a short (500 words) report of the meeting. **Applicants must be an active member of the BSMB for at least one year prior to the meeting** and must have attended one or more BSMB meetings. Membership subscription status should be up to date at the time of sending in the application.

3) The **ECR tenured award** (up to £300 for national meetings and up to £600 for international meetings) is available for the early career researchers (ECRs) at the start of their tenured or tenure-track position, who have been accepted for an oral presentation. Applicants should have been **a member of the BSMB for at least 3 calendar months prior to the opening (first day) of the national meeting** and **an active member of the BSMB for at least one year prior to the international meeting** and must have attended one or more BSMB meetings. For more details and to apply, please contact the Bursary Committee.

4) **The Couchman Travel Award**, kindly sponsored by Professor John Couchman, is open to applications. Each Travel Award will cover up to £150 for a BSMB meeting (~10 awards per year), or up to £300 for a European matrix-related meeting (~2 awards per year). Applicants should submit an abstract of the work to be presented at the meeting, and wherever possible, the awardees should use ground (public) transportation to the meeting site. **For a national meeting, the applicants must have joined the Society at least 3 calendar months before the opening day** of the relevant meeting. **International meeting applicants must be BSMB members in good standing, who have attended one or more BSMB meetings in person** and are affiliated to a recognised academic institution. Preference will be given to applicants who have not previously received an award via this scheme. For conditions of the award and to apply, please follow the link here.

5) **Bursaries to attend the Matrix Biology Europe (MBE) or American Society for Matrix Biology (ASMB) meetings**. These bursaries fund up to £800 for FECTS/MBE meetings (~5 awards per year) and for ASMB meetings (~2 awards per year). Applicants should be non-tenured scientists, should have been **a member of the BSMB for at least 6 calendar months prior to the opening (first day) of the meeting** and must have attended one or more BSMB meetings prior to the conference start date.

All bursary applications should be made within the early bird window of the conference registration. Applications should be sent to Dr Kasia Pirog (katarzyna.pirog@newcastle.ac.uk), Chair of the BSMB bursary committee. Please check your eligibility before applying.

By Kasia Pirog (Chair of the BSMB bursary committee)

News from the International Society for Matrix Biology (ISMB)

International Travel Grants

ISMB provides international travel grants (on average 500 Euros) to allow young scientists to attend major meetings in matrix biology anywhere in the world. Please apply several months before the meeting, by one of the following deadlines: January 1, April 1, July 1, October 1. Follow the link to apply: https://www.ismb.org/copy-of-travel-grants

Check out the list of upcoming matrix-related meetings: https://www.ismb.org/meetings

Meet the Current BSMB Committee

Chair, Prof. Kim Midwood
University of Oxford
kim.midwood@kennedy.ox.ac.uk
Kim Midwood's group examines how homeostatic cell-matrix networks are altered by tissue remodelling following injury or infection, providing biochemical and biomechanical cues that contribute to inflammation and tissue repair, with the goal of developing ways to prevent or cure immune-mediated diseases such as rheumatoid arthritis, inflammatory bowel disease, fibrosis and cancer.

Honorary Secretary, Prof. Qing-Jun Meng
University of Manchester
qing-jun.meng@manchester.ac.uk
Qing-Jun Meng's group focuses on the two-way interactions between circadian rhythms and extracellular matrix in tissue homeostasis and age-related diseases, such as osteoarthritis, intervertebral disc degeneration, breast cancer, and skin ageing.

Honorary Treasurer, Dr. James Whiteford
Queen Mary University of London
j.whiteford@qmul.ac.uk
James Whiteford's lab focuses on the role of extracellular matrix receptors, particularly the syndecans, on the process of new blood vessel formation in development and disease.

Elected Members:

Dr. Angus Wann
University of Southampton
A.K.T.Wann@soton.ac.uk
Angus Wann's group is interested in mechanobiology of cells and the matrix, how they communicate and regulate each other's responses, to integrate decisions at cell, tissue and organ level, with a focus on a nanoscale cell organelle called the primary cilium in the skeleton.

Dr. David Wilkinson
University of Liverpool
david.wilkinson@liverpool.ac.uk
David Wilkinson's lab focuses on how extracellular proteinase families and their inhibitors interact to regulate matrix destruction and synthesis.

Dr. Sarah Snelling
University of Oxford
sarah.snelling@ndorms.ox.ac.uk
Sarah Snelling's research combines functional analysis with single-cell and spatial multiomic approaches to define the cellular basis of human musculoskeletal tissue development, disease, surgical response and homeostasis.

Dr. Joan Chang
University of Manchester
joan.chang@manchester.ac.uk
Joan Chang's group is interested in collagen-I regulation (intracellular trafficking, extracellular regulatory controls such as circadian rhythms and immune-fibroblast crosstalk) in health and disease, including fibrosis and rare genetic diseases.

PhD Representative, Miss Hannah Evans
University of Nottingham
mzyhe3@nottingham.ac.uk
Hannah is completing her PhD in Prof Kenton Arkill's Endothelial and Vasculature Imaging Lab, which primarily focuses on glycomicroscopy. Her project aims to investigate the relationship between glycosaminoglycans and metabolism changes in hypoxic cancers.

ECR/Fellow Representative, Dr. Jack Roberts
University of Newcastle
Jack.Roberts@newcastle.ac.uk
Jack Roberts' research uses genome editing technologies to manipulate novel effector genes in osteoarthritis to determine their impact on the cartilage extracellular matrix.

Post-doc Representative, Dr. Cathy Park
University of Manchester
cathy.park@manchester.ac.uk
Cathy is using high resolution imaging techniques to unravel the interaction between the ECM and extracellular vesicles

Co-opted Members:

Chair of ECR Award and Membership Committee, Dr. Anna Maria Piccinini
University of Nottingham
Anna.Piccinini@nottingham.ac.uk
Anna M. Piccinini's group investigates the reciprocal crosstalk between the extracellular matrix and immune cells in tissue homeostasis and infection, with a focus on macrophages and their contribution to local tissue integrity and identity.

Chair of Bursary Committee, Dr. Kasia Pirog
University of Newcastle
Katarzyna.Pirog@newcastle.ac.uk
Kasia Piróg's group studies molecular mechanisms involved in rare and common skeletal diseases, with emphasis on the abnormalities in the extracellular matrix (ECM) production, secretion and ultrastructure, and the impact on the biomechanical properties of musculoskeletal tissues.


(BSMB committee at Manchester meeting April 2026)

Meeting Reports

BSMB Spring meeting "ECM Across Tissue Sites Location, Location, Location", 13th-14th of April 2026, Manchester, UK

Report by Cagla Erdas (Newcastle University), Lorna Milne (Nottingham University), Andrew Love (University of Aberdeen), Morgan Bryant (University of Aberdeen), Scott Dillon (Cambridge University), and Nodoka Iwasaki (RVC).

ECR Satellite Session: One of the most valuable sessions focused on science communication and what it really means to be a researcher beyond just experiments and data. The session started by challenging a simple but important question: who are we actually communicating our science to? It made me realise that we often default to speaking only to other scientists, but there is a huge gap when it comes to engaging the public. That shift in perspective was quite powerful. A key theme throughout the session was simplicity. The idea was not to "dumb down" science, but to reduce cognitive load so people can actually understand and remember what we say. The simpler and clearer the message, the more impact it has. One practical suggestion was to test our writing using tools that check readability, making sure it is accessible even to non-experts. Another takeaway that really

stayed with me was the importance of having a clear take-home message. Instead of trying to explain everything, we should aim to leave people with one strong idea they can relate to and remember. That single message can often be more powerful than a detailed explanation. What I also appreciated was the emphasis on authenticity. There isn't one "correct" way to communicate science. Being yourself, showing enthusiasm, and bringing energy to your topic can make a huge difference. It made communication feel much more personal and less like a performance. The session also touched on public speaking anxiety, which many people experience. One simple but effective mindset shift suggested was to reframe nerves as excitement. This small change can actually help boost confidence and improve delivery. In the second part of the session, we moved into reflecting on what we value as researchers. We discussed qualities like curiosity, collaboration, openness, integrity, and reproducibility. This led to writing a short personal statement about what kind of researcher we want to be. For me, the key idea was that curiosity and collaboration are what make science both enjoyable and meaningful. In practice, this means staying open to new ideas, trying different approaches, and working closely with others who share the same excitement about discovery. Overall, this session stood out because it wasn't just about skills, but about mindset. It reminded me that science is not only about generating knowledge, but also about how we share it and connect with others through it.

Session 1 The Glycocalyx: The opening session of the meeting discussed the role of the glycocalyx and primarily the glycosaminoglycan within in as modulators and markers of immunity, inflammation and disease. Eric Schmidt opened the session with an invited talk highlight the potential diagnostic and prognostic potential of circulating heparan and chondroitin sulphate at the bedside in a cohort of septic patients. Selected talks included Iashia Nabi who presented the role of heparan sulphate at the vascular-immune interface and its modulation of antiviral immunity in murine models of influenza A infection. Followed by Nicole Ong who discussed the role of heparan sulphate in protein immunogenicity. The session concluded with an invited talk from Rebecca Miller, who discussed the role of glycosaminoglycans in inflammation. Her talk focused particularly on chondroitin sulphate in osteoarthritis and ways to improve the identification of disaccharides with high therapeutic efficacy and subsequently produce them at scale. Together the presentations highlighted the ever growing importance of glycosaminoglycans in understanding and targeting inflammation and infection diseases.

Session 2 The Basement Membrane: The second session of the day focused on the basement membrane and featured a diverse range of talks. The session opened with a talk from Professor Franck Pichaud who discussed his work using the drosophila eye as a model to demonstrate how the ECM acts as a blueprint for cell morphogenesis. This was followed by An Yan, who presented her research investigating Col4a10/2 mutation mediated Cerebral Small Vessel Disease. Dr Rebecca Preston then shared her work on Alport syndrome, revealing how kidney ageing and fibrosis are driven by a slowdown in basement membrane renewal. Invited speaker, Professor Clare Lloyd presented her work on using a neonate model of allergic pathology to investigate epithelial immune cross talk during ECM remodelling.

(Joanne Murphy-Ullrich receiving the BSMB medal)

The session concluded with Professor Joanne Murphy-Ullrich, winner of the BSMB medal. She delivered a fascinating overview of her scientific career, highlighting her early work on the matricellular protein thrombospondin-1 and its role in the activation of TGF-β.

Session 3 Musculo-skeletal Matrix: The first session of the second day focused on the musculoskeletal matrix. Chloé Yeung opened the session with a presentation on the relationship between exercise and tendon circadian rhythms, highlighting how exercise may reset the biological clock within tendon tissue. Jack Llewellyn followed with a discussion on the effects of cellular senescence on tenocytes and exploring the potential of senotherapeutic strategies as a treatment approach. Next, Fabianna Tennant discussed the role of integrin β1 signalling within a stiff 3D ECM breast cancer model, and its implications for tumour progression. Finally, Sarah Rice presented research on the collagen-modifying enzyme COLGALT2, identifying it as a risk gene for osteoarthritis and explaining its potential contribution to disease development.

Session 4 The Interstitial Matrix: Session four focused on the interstitial matrix, Dr Tara Sutherland introduced her work with imaging mass cytometry as a tool to study cell-matrix interactions in allergic airway pathology. Finishing with her group's recent work on changing macrophage, fibroblast and vascular populations during disease development. Following this was a talk from Miriam Hernandez-Meadows on NF2-related vestibular schwannoma. Specifically, characterising immune-excluded microenvironments using multiple proteomic methodologies. The next selected talk by George Thompson discussed how the circadian rhythm influences the composition and organisation of the ECM. Finally, Dr Oliver Pearce described how his lab utilises the ECM from cancer tissues to explore how it's composition directly influences immune infiltration. By modifying the ECM, they were able to alter the accessibility of the tumour and regulate immune crosstalk.

Session 5 ECM Open Session: This open session brought together cutting-edge research spanning the mechanical, cellular, and molecular dimensions of extracellular matrix biology, showcasing the field's remarkable breadth. Sarah Woolner (Manchester) opened with an invited talk examining how mechanical forces govern cell division in health and disease contexts, setting a strong foundation for the session. Ayodele Ogundero (Exeter) then presented a rigorous phenotypic characterisation of senescent lung fibroblasts, deploying complementary biochemical and biomechanical readouts to interrogate how cellular ageing alters fibroblast function; a timely contribution given growing interest in senescence as a therapeutic target. Will Yu (Oxford) offered compelling insights into frozen shoulder fibrosis, demonstrating how crosstalk between capsular fibroblasts and macrophages drives ECM remodelling in a clinically important but underexplored self-resolving condition. The session closed with an invited talk from Karen Piper-Hanley (Manchester), who presented a spatially resolved single-cell approach to diagnosing

early liver fibrosis through cell state mapping and matrix deposition signatures which was an elegant integration of emerging omics technologies with translational pathology. Across the session, themes of mechanobiology, fibrosis, inflammation, and translational relevance converged to illustrate the vibrancy and clinical promise of contemporary ECM research.

Annual meeting of the German Society for Matrix Biology (DGMB), 15th -17th of April 2026, Heidelberg, Germany

Report by Roufaida Bouchenafa (Newcastle University)

The DGMB 2026 conference was held at the Orthopaedic University Hospital Heidelberg from Wednesday 15th April to Friday 17th April. The meeting brought together researchers working across extracellular matrix biology, mechanobiology, proteomics, imaging, bioengineering, and regenerative medicine, highlighting how ECM organization and remodelling contribute to development, ageing, fibrosis, cancer, and tissue repair.
Day 1 (Wednesday Afternoon) The afternoon programme featured two sessions focusing on matrix biology and bioengineering approaches, highlighting how extracellular matrix (ECM) structure, remodelling, and advanced technologies contribute to understanding and treating disease.

Session 1: Matrix Biology – From Connective-Tissue Architecture to Disease Mechanisms
The first session explored how ECM architecture underpins tissue integrity and how its disruption drives disease. The opening invited lecture by Mats Paulsson (University of Cologne) provided a comprehensive overview of connective tissue organization. He introduced key vWA domain-containing ECM proteins, including matrilins, collagen VI, and AMACO, and described their structural assembly and supramolecular organization. Detailed insights into collagen VI assembly highlighted the importance of coordinated intracellular and extracellular processes. He further demonstrated how point mutations in vWA domains disrupt protein folding or secretion, contributing to disease. In addition, he discussed the association of AMACO with Fraser complex proteins, proposing a model in which these components form anchoring structures essential for tissue connectivity, with disruption leading to Fraser syndrome.
The selected talks extended these concepts into disease contexts. Alexander Nyström (University of Freiburg) demonstrated that recombinant human decorin can be produced at scale and, when administered systemically, accumulates in damaged tissues and significantly reduces fibrosis in a murine model of recessive dystrophic epidermolysis bullosa. Nagwa Ibrahim (KIT) highlighted the role of CD44 in tumour-associated macrophages (TAMs) in pancreatic cancer, showing that CD44 drives a pro-tumoral phenotype and that its targeting reduces tumour burden and stromal activation. Kristina Bubb (Karolinska Institutet) presented a novel inducible mouse model demonstrating that mitochondrial DNA mutations in cardiomyocytes trigger an ageing-like shift in ECM remodelling, accompanied by immune infiltration and progressive cardiac dysfunction. Susanne Grässel (University of Regensburg) reported that α-MSH analogues (NDP-MSH and KdPT) exhibit cartilage-protective, anti-inflammatory, and anabolic effects in a murine osteoarthritis model, suggesting therapeutic potential.

The session concluded with an invited talk by Tristan Maerz (ETH Zürich), who investigated the emergence of pathogenic synovial fibroblasts in osteoarthritis. Using murine injury models combined with single-cell RNA sequencing and spatial transcriptomics, he identified transcriptional shifts in fibroblast populations. His work showed that RSPO2-mediated Wnt signaling inhibits synovial adipogenesis and identified a Dpp4+ fibroblast subset as a precursor of pathogenic fibroblasts following injury. The transcription factor SOX5

was implicated as a key driver of this transition.

Session 2: Advanced Techniques in Bioengineering The second session focused on innovative bioengineering tools and materials designed to study and manipulate ECM interactions and cellular behaviour. The invited lecture by Molly Stevens (Imperial College London) highlighted advances in biomaterials for regenerative medicine and therapeutics. She presented approaches including in vivo bioreactors for bone regeneration and the design of nano- and microstructured materials to control cell fate through the cell–material interface. Her work emphasized translation to the clinic, including contributions to the UK Regenerative Medicine Platform and the development of clinically approved anti-fibrotic technologies. Additional innovations included nanoneedle-based delivery systems and the SPARTA platform for nanoparticle and exosome characterization, with applications in disease detection and cell phenotyping. She also highlighted how differentiating stem cells actively remodel their environment, for example through MMP2-mediated laminin cleavage.

The selected talks further showcased advances in biomaterials and disease modelling. P. D. Okoro (University of California, Riverside) introduced BIPORES, a scalable scaffold system combining microfluidics, phase separation, and bioprinting to create interconnected porous structures that support neural tissue development. Andis Klegeris (University of British Columbia) explored the matrikine GHK-Cu, demonstrating that its bioactivity in the central nervous system depends on copper binding, with implications for regulating microglial neuroimmune responses. Simon Dreher (University Hospital Tübingen) developed a collagen I-based 3D skeletal muscle model using human satellite cells, providing a physiologically relevant system for ex vivo exercise studies. Jasmina Paluncic (BIOMEX GmbH) presented homoGel®, a human-derived, xeno-free ECM hydrogel that supports stem cell expansion, organoid culture, and differentiation, offering a versatile platform for advanced cellular research.

The session concluded with an invited lecture by Oscar Staufer (INM Leibniz Institute for New Materials), who introduced synthetic cell-based artificial tissues designed to mimic lymphoid organs. These programmable systems function as artificial lymph nodes to study T cell activation and enhance immunotherapy. By recreating tissue architecture, they enable investigation of how mechanical and biochemical cues interact to regulate immune responses.

The afternoon concluded with a welcome reception and Poster Session I (odd-numbered posters), providing an opportunity for networking, discussion of ongoing research, and engagement with peers across academia and industry.

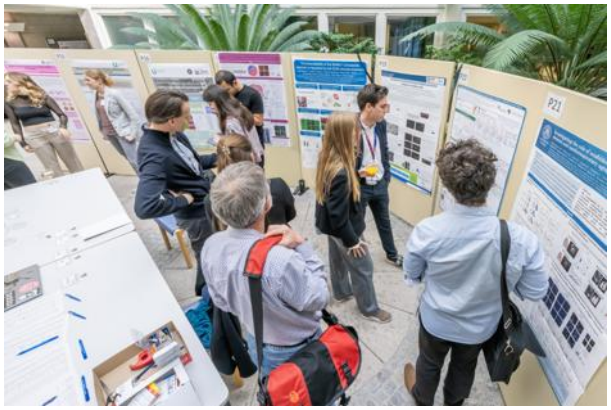
Day 2 – Thursday Day 2 focused on matrix dysregulation in disease and the role of collagens in development, ageing, and regeneration, highlighting how ECM remodelling contributes to pathology across multiple systems.

Session 3: Unravelling Matrix Dysregulation in Disease The session opened with an invited lecture by Véronique Orian-Rousseau (KIT), who discussed the role of CD44 in pancreatic cancer progression and metastasis. Using mouse models, including conditional CD44 deletion in cancer-associated fibroblasts (CAFs), her work showed that stromal CD44 is essential for tumour growth and microenvironment organization. These findings position CD44 as a central regulator of tumour–stroma–immune interactions, capable of reprogramming both primary tumours and metastatic niches.

Alexia Pavlidaki (University of Strasbourg) explored the tenascin-C interactome, revealing that many TNC-associated partners are involved in immune regulation and signalling pathways. Her work suggests that targeting TNC interactions could enhance anti-tumour immune responses. Jayashree Jayachandran (University Hospital Cologne) presented work on GNAS dysfunction, showing that its deficiency leads to progressive dermal ossification and cutaneous fibrosis. Mechanistically, Gsα deficiency disrupts the TANGO1-mediated secretory pathway, resulting in disorganized secretion of a profibrotic ECM. Henriette König (University of Cologne) introduced a model system using hiPSC-derived osteoclasts to study skeletal diseases. She developed a robust and reproducible differentiation protocol, enabling improved osteoclast formation and functional maturation for disease modelling. Elisabeth Seebach (University Hospital Heidelberg) investigated the cGAS/STING pathway in bone remodelling, demonstrating that its activation in osteoblasts alters the RANKL/OPG balance, thereby disrupting osteoblast–osteoclast communication. This suggests that targeting cGAS/STING signalling could modulate pathological bone matrix remodelling.

The session concluded with an invited talk by Christine Chuang (University of Copenhagen), who examined ECM remodelling in atherosclerosis. Her work identified hypoxia as a key driver of pathological ECM changes, promoting versican accumulation and altering glycosaminoglycan sulfation. In combination with myeloperoxidase-mediated oxidative damage, hypoxia reprograms vascular ECM composition, increasing plaque instability and the risk of rupture and stroke.

Session 4: The Role of Collagens in Tissue Development and Regeneration This session focused on the diverse roles of collagens in development, ageing, and tissue repair. The invited lecture by Florence Ruggiero (Université de Lyon) highlighted the use of zebrafish models to study collagen function in development and regeneration. By integrating genome editing, live imaging, and single-cell transcriptomics, her work demonstrated that regenerative processes reuse developmental ECM programs. Using fin regeneration and skin injury models, she showed how collagen dynamics contribute to scar-free repair, including actin-dependent cell migration and rosette formation supported by computational modelling.



Florian Constanty (Heidelberg University Hospital/DKFZ) presented work on endotrophin, a collagen VIα3-derived matrikine, showing that it reduces cardiomyocyte proliferation while enhancing cell motility in vitro, with ongoing studies investigating its function in vivo. Giulio Gatto (University Hospital Frankfurt) examined age-related changes in joint tissues, demonstrating alterations in collagen expression and fibril organization across ageing using mouse models. Omar Merhi El Hassan El Abdallah (University of Glasgow) investigated collagen IV mutations (COL4A1/2) in vascular disease, showing genotype- and cell-type-specific effects that drive endothelial senescence, inflammation, and ECM dysregulation, linking genetic and age-related vascular pathology. Michal Tamáš (University of Padova) identified SMOC2 upregulation in collagen VI-deficient myoblasts using single-nuclei RNA sequencing, implicating it in impaired myoblast fusion and skeletal muscle dysfunction.

The session concluded with an invited lecture by Frauke Gräter (MPI for Polymer Research / University of Heidelberg), who introduced the concept of mechanoradicals in the ECM. She demonstrated that mechanical stretching of

collagen generates radicals, which are converted into controlled oxidative signals, primarily hydrogen peroxide. Using experiments, simulations, and machine learning, her work revealed a novel mechanosensing mechanism by which the ECM translates mechanical stress into biochemical signals, with important implications for ageing and disease.

Session 5: Advanced Techniques for Studying ECM Remodelling and Degradation This session highlighted advanced methodologies to investigate ECM remodelling, spanning spatial proteomics, engineered model systems, and targeted molecular tools. The session opened with an invited lecture by Marcus Krüger (University of Cologne), who presented a spatial proteomics atlas of the neuromuscular junction in the diaphragm. His work identified over 400 proteins enriched at the NMJ and revealed age-dependent remodelling of synaptic cleft and ECM components. Notably, FXYD6 was identified as a dual-site protein, with increased expression in type IIa muscle fibers, suggesting a role in neuromuscular function and ageing-related changes.

Sara Madureira (INM Leibniz Institute) introduced a synthetic lymph node model combining synthetic cells and tissue engineering to study cell–matrix and intercellular signalling in chronic lymphocytic leukemia. Safaa Naiel (EMBL Heidelberg) presented a system to model macrophage-driven ECM remodelling in lung fibrosis, demonstrating how macrophages shape collagen dynamics and define profibrotic niches. Ainhoa Moliner-Morro (MPI-CBG Dresden) developed nanobodies for state-specific detection and inhibition of MMPs, providing precise tools for imaging and targeting protease activity. Jana Riegger (Ulm University) explored genetically modified porcine chondrocytes for cartilage repair, showing strong chondrogenic potential and improved integration within collagen scaffolds.

The session concluded with an invited lecture by David Wilkinson (University of Liverpool), who investigated the role of E-clade serpins in osteoarthritis. Using cartilage explant models, he demonstrated that these inhibitors partially block collagen degradation by targeting urokinase-type plasminogen activator (uPA). His work further showed that uPA contributes to MMP activation, identifying a pathway that

drives cartilage breakdown. The session was followed by a coffee break and poster session (even-numbered posters), providing further opportunities for discussion and networking.

Session 6: Microscopy and Imaging Techniques in Matrix Biology The final session focused on cutting-edge imaging technologies enabling unprecedented insights into ECM structure and dynamics at the molecular scale. The invited lecture by Stefan Hell (MPI for Multidisciplinary Sciences) provided a perspective on the development of super-resolution microscopy, culminating in the MINFLUX technique, which achieves near-ångström localization precision. He demonstrated how this method enables visualization of molecular processes at the scale of individual fluorophores and highlighted its ability to distinguish identical fluorophores without sequential switching.
Leonhard Möckl (University of Erlangen-Nuremberg) followed with advances in molecular-resolution imaging of the cell-surface glycome. Using a tailored super-resolution microscopy toolbox, his group generated molecular maps of glycans within the native glycocalyx, linking nanoscale glycan organization to cellular states and enabling

spatial analysis of distinct protein glycoforms in situ.
The day concluded with the DGMB Business Meeting, followed by a dinner at Heidelberg Castle.

Day 3 – Friday **Session 7 highlighted innovative work from early-career researchers** focusing on how extracellular signalling environments shape cell behaviour in cancer and regenerative medicine. Jessica Oyie Sousa Onyeisi demonstrated that Syndecan-4 drives cytokine-mediated communication in triple-negative breast cancer, enabling aggressive traits to spread between cell populations via paracrine signalling. Sven Schmidt focused on cartilage regeneration, showing that heparin can reduce hypertrophic differentiation in mesenchymal stromal cells, although full stabilization of a non-mineralizing cartilage phenotype was not achieved.
Session 8: Cell–ECM Interactions in Health and Disease This final scientific session focused on how cell–matrix interactions regulate tissue homeostasis and contribute to disease progression, spanning mechanobiology, cancer, skeletal disorders, and wound healing. The invited lecture by Viola Vogel (ETH Zürich) demonstrated that loss of fibronectin fiber tension is a common feature of progressive diseases including cancer, myocarditis, and fibrosis. Using the FnBPA5 tension probe, her work linked relaxed ECM fibers with immune cell infiltration and disease progression, highlighting ECM mechanics as a novel disease marker.

D. Mählich presented work on Plastin-3, showing its role in coupling cytoskeletal organization to matrix stiffness in chondrocytes and emphasizing the importance of mechanotransduction in cartilage biology. Ege Erkul investigated how the loss of a membrane-associated protein alters collagen type I architecture, demonstrating the importance of membrane–ECM interactions in maintaining matrix organization. Débora Radicchi explored how oncogenic HRAS signalling promotes cutaneous squamous cell carcinoma progression through hepsin-mediated destabilization of the basement membrane. Roufaida Bouchenafa examined a SEMDJL2-associated KIF22 mutation, showing that defects in mitosis and vesicle trafficking disrupt matrix architecture and contribute to progressive skeletal fragility.

The session concluded with an invited lecture by Sabine Eming (University of Cologne), who discussed how immune and metabolic dysregulation contribute to impaired wound healing and fibrosis. Using gene-modified mouse models and transcriptomic analyses, her group showed that metabolic reprogramming in macrophages controls stage-specific tissue repair responses, identifying potential therapeutic targets to promote regeneration while limiting fibrosis. The conference concluded with prize presentations and final remarks, marking the close of a highly interdisciplinary and stimulating meeting that highlighted the rapidly expanding impact of matrix biology across health and disease.

Omar from University of Glasgow was awarded poster prize

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