Scandinavian Society for Biomaterials

Newsletter
Winter issue, 2025

Letter from the board

Dear ScSB members,

As the last bit of daylight we'll see this year is starting to fade away and snow is stubbornly avoiding most parts of the Nordics and Baltics, it might be difficult to believe that brighter days on their way. But rest assured, the sun will eventually turn, as it always does on winter solstice, and bring along goods things that are totally worth the wait. One thing to look forward to is the next annual ScSB meeting, which will be held at the west coast of Sweden in May 2026. Our ScSB 2026 team in Gothenburg has made good use of the dreary autumn days putting together an exciting list of invite speakers that you should check out on page 3! The scientific programme for the meeting will focus on the theme "From discovery to device", spanning the entire journey of biomaterials research from the first exploratory studies all the way to clinical adaptation. Irrespective of the milestone your research has just passed along this long and winding road of biomaterial development, we look forward to receiving your contributions to the scientific programme. The abstract deadline is shortly after New Year, so don't forget to put a reminder in your calendar! Or better still, submit your abstract already before the holidays.

But there are even more reasons to look forward to ScSB 2026 in Fiskebäckskil: we're on the lookout for new board members to be voted in to join the ScSB board. If you have a burning passion for biomaterials and feel like you have something to contribute to our society, or perhaps you know someone who fits that description, we invite you to get in touch with us by mid-February! We are also looking for a new student representative to join the ScSB board. Our current student representative Enrique is all grown up and about to finish his PhD. This means he will also have outgrown his post on the board by the time of our next general assembly in May and we need someone to fill in his shoes. So, all PhD students ahoy: this is your chance to hop on-board and help us shape the future of biomaterials research in the Nordic and Baltic countries. If you are wondering why you (or your excellent PhD student) should become our new student representative, you should flip to page 4 where you can read Enrique's thoughts about his time on the ScSB board.

Next year also marks the 50th anniversary of the European Society for Biomaterials, so all the more reason to celebrate our shared passion for biomaterials research in the coming year. But before that, it is time for us all to take a small break from science, take it easy and enjoy the last few days of 2025. And if you still need a tiny dose of biomaterials in your life, I recommend reading the science opinion column and the interview of our 2025 ScSB awardee for a bit of inspiration!

Hanna,

On behalf of the ScSB board

Our president

Hanna Tiainen
Associate Professor
University of Oslo, Norway

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Fiskebäckskil – B. Müller

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Welcome to ScSB 2026

With "**From Discovery to Device**" as this year's theme, we highlight how breakthroughs in biomaterials research are translated into technologies that shape healthcare and society. The program brings together leading researchers who will share new perspectives across this spectrum, creating space for dialogue, exchange of ideas, and new collaborations.

Complementing the scientific program, we invite you to join a range of social activities offering opportunities to connect with colleagues from Scandinavia and beyond in an informal yet engaging atmosphere.

We look forward to welcoming you to an inspiring meeting!

– The ScSB 2026 team

Keynote speakers

Prof. Serena Best, University of Cambridge, UK
Prof. Ralph Müller, ETH Zürich, Switzerland
Prof. Michael Gelinksy, Technische Universität Dresden, Germany
Prof. Rickard Brånemark, MIT, USA and University of Gothenburg, Sweden
Prof. Maria Asplund, Chalmers University of Technology, Sweden
Prof. Hanna Isaksson, Lund University, Sweden
Prof. Lars Kölby, University of Gothenburg, Sweden

JOIN US IN SWEDEN!

Submit abstracts by 15 Jan 2025
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Are you our new board member?

Several of our current board members are reaching the end of their term on the ScSB board. Do you feel like you have something to give to the ScSB community? We are looking for new board members, including a new student representative, to join the ScSB board, so now is your chance to hop on board!

Qualifications:

Researcher working within biomaterials science or related field
Affiliated with a research institution within the Nordic or Baltic countries
Excellent communication and interpersonal skills
Dedicated to serving the ScSB community

Apply by 15/02/2026:

Submit your nomination letter and CV.

For more information: click here

Join us in shaping the future of ScSB!

Enrique Oreja Remartínez
ScSB Board Member
Doctoral Research Fellow,
University of Oslo
e.o.remartinez@odont.uio.no

It was already two years ago when I was first approached by my supervisor to apply for the student representative position that was available on the ScSB board. At first, I thought this was a bad idea: that it will take a lot of time from my other responsibilities, and I will not get anything from it. Now two years later, I can tell I was completely wrong and the experience of getting involved in ScSB has been entirely worth it.

During these two years, I have been actively participating in the board meetings and taking part in the decisions made by the society. This has given me a broader view of how collaboration is key to keep moving forward as a society.

Being on the "inside" of the society has also given me the chance to appreciate all the work and effort made by the society's members when organising events, providing mobility grants or webinars that often is underestimated since we only observe the final product.

As a student, I always found it challenging to interact with senior researchers, but thanks to the insider view to the ScSB events, I feel like I was participating in these events more actively, which really helped me build more confidence to interact and make new connections.

If you are considering becoming the new ScSB student representative, I would absolutely encourage you to apply for the position. It is the best way to get involved, meet people, and develop skills that will be useful not only in academia, but also for your future life.

I am very thankful to have had the chance to be part of this community and to work with everyone. See you all very soon!

Current board members and roles

Assoc. Prof. Hanna Tiainen, *University of Oslo, Norway*, President
Assoc. Prof. Natalia Ferraz, *Uppsala University, Sweden,* Board Member, Treasurer
Assoc. Prof. Pablo Pennisi, *Aalborg University, Denmark*, Board Member
Dr Miina Björninen, *Tampere University, Finland*, Board Member, Social Media responsible
Prof. Dagnija Loča, *Riga Technical University, Latvia ,* Board Member
Assoc. Prof. Furqan A. Shah, *University of Gothenburg, Sweden*, Board Member
Asst. Prof Bergþóra Sigríður Snorradóttir, *University of Iceland*, Board Member
Enrique Oreja Remartinez, *University of Oslo, Norway*, Student representative, Secretary

Please find our contact information here

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Meet the ScSB 2025 awardee

The winner of the ScSB 2025 research award is **Prof. Duncan Sutherland** from Aarhus University, Denmark. Prof. Sutherland has had a major impact in quantification of the interaction of biological systems with nanostructured interfaces and steering cellular biosystems via nanoescale surface cues for biomaterials, tissue engineering and cell therapy.

Can you tell us about your background and how you became interested in the field of biomaterials?

I was in the third year of a bachelors degree in Physics at the University of Bristol in the UK and looking for a finals research project. As I was walking to lunch with one of my friends we noticed a small paper advert on the wall about a project to study the surfaces of titanium dental implants after they had been implanted and recovered. It was using the latest surface science techniques from physics but studying biology. It sounded great. We went straight to the Professor's office and talked our way into the project. I stayed for a PhD and a career in research.

Can you tell us about a particularly exciting or surprising discovery you have made during your research?

Early on as a post-doc at Chalmers in Sweden I was looking at platelet binding to titanium surfaces. I had looked close-up at the surface of titanium medical implants and they were rough at the nanoscale. At the time we talked a lot about how this roughness might influence the biological response. In one study I was precisely changing the length scale of the roughness and together with colleagues at Gothenburg University looking at how roughness and proteins changed the rate of binding of platelets. The exciting result was not what it told us about platelets but that the nanoscale roughness could change the protein.

ScSB25 award winner Prof. Duncan Sutherland , Aarhus University

What are the biggest challenges facing biomaterials research today?

I am afraid that a large challenge comes from the academic system. Increasingly young researchers need to publish in particular (high impact) journals to be able to compete for permanent positions. In my opinion there is somewhat of a clash between producing research which is shiny and new to publish in higher impact materials journals and producing research which has a reasonable potential to be translatable. That is not to say that one cannot do both, but that it is hard to do both at the same time. I am worried that the next generation of researchers will be selected to carry out research which, while interesting and exciting, is ultimately not easily translatable.

Looking to the future, what new developments or areas of research in biomaterials are you most excited about?

Personally, I like to understand how things work. I am excited to see materials being used as tools to help understand protein level and cellular level mechanisms. I think there is a lot of potential in the combination of molecular level imaging and materials that can pattern molecules at the molecular length scale. These materials may have potential to instruct at the cellular level or tissue level for example in tissue engineering or in cell expansion and direction for cell-based therapy, but I am also interested in their use to understand cellular signaling. Some of these approaches may only be useful *in vitro* but others can be applied *in vivo*.

What advice would you give to early-career researchers who are interested in the field of biomaterials?

The first is to follow your interests. Good research requires dedication and commitment and the more interesting you find it the more you will be able to carry out high quality research. The second is that biomaterials is a highly interdisciplinary field and that makes it hard because it is impossible to be good at everything. Collaborate with good people who are different from you and then keep asking questions. If you only talk to one person you will only learn about the topic from one side. The last is that there will be constant developments of methods in other fields, try to keep up with knowing a bit about the new developments in the surrounding disciplines to see how they can help your research.

The ScSB Research Award for a contributor to biomaterials

The ScSB research award recognizes the contribution of outstanding individuals that have made groundbreaking achievements advancing the field of biomaterials.

The ScSB welcomes the nomination of all researchers; established as well as young academics.

The developments need to be based on achieved results, which the committee can assess.

Please feel free to email nomination committee members with nominations, or for further information.

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Stay tuned and follow our LinkedIn, loads of interesting news coming!

Contact

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Pushing the boundaries of 3D bioprinting: engineering strategies for designing hyaluronic acid-based bioink

Three-dimensional (3D) bioprinting has rapidly advanced from a promising concept to a practical tool for engineering tissues and creating sophisticated in vitro models. Yet the central challenge remains unchanged: developing bioinks that simultaneously offer reliable printability, rapid and controllable gelation, structural fidelity, and a nurturing microenvironment for cells. Current bioinks, such as alginate, which prints well due to rapid ionic crosslinking but is biologically inert, and methacrylated gelatin or GelMA, which provide cell-adhesive cues but lack mechanical stability highlight the persistent trade-offs between printability and biological function.[1] These limitations, combined with issues such as insufficient mechanical strength, thermal instability, and suboptimal degradation profiles, underscore the need for more adaptable and functional hydrogel systems. To address this, we have explored how hyaluronic acid (HA), a naturally present polymer in our body, can be chemically engineered to support the next generation of bioprinted constructs. For this purpose, we focused on designing dynamic covalent chemistry to obtain printable HA-based bioinks that not only improve printing performance but also expand what bioprinting can achieve in disease modeling and regenerative medicine.

Our group has been active in developing a range of biorthogonal crosslinking chemistries, including hydrazone,[2] Aldol,[3] disulfide (that can crosslink at physiological pH),[4] and thiazolidine[5] reactions to create injectable HA-based hydrogels for drug delivery applications. These chemistries generate **no toxic byproducts and enable spatiotemporally controlled gelation**, making it possible to form robust hydrogels with less than 2% solid content and a low degree of crosslinking (below 15%). Building on these contributions, we envisioned an HA-based bioink with dual crosslinking that integrates **both dynam**ic and **non-dynamic chemistries.**[5] The dynamic covalent bonds provide excellent shear-thinning behavior, while the non-dynamic crosslinks enable rapid gelation and an increase in initial viscosity, a feature that is very essential for producing stable 3D-printed structures.

Through targeted HA modification, we developed hydrogels that gel rapidly, flow smoothly under shear, recover their structure after printing, and retain their shape long enough to support the maturation of delicate, stem-cell–laden constructs (Figure 1a). This dual-crosslinked system, based on **disulfide** (dynamic) and **thiazolidine** (non-dynamic) chemistries, exhibited particularly strong biological performance.[5] Bioprinting with human mesenchymal stromal cells (hMSCs) demonstrated excellent viability, robust proliferation and migration, and surprisingly dedifferentiation of stem cells as indicated by a more than two-fold increase in key stemness markers such as OCT3/4 and NANOG.

Although disulfide bond formation typically requires basic conditions (pH > 8), we have previously shown that its reaction kinetics can be tuned by modulating the thiol pKa.[4] However, at physiological pH the reaction remains slow. While disulfide crosslinking is excellent for generating viscoelastic, cell-friendly hydrogels, its slow gelation significantly limits printing precision. To address this challenge, we introduced potassium iodide (KI) as a catalyst to accelerate disulfide formation under physiological conditions.[6] KI offered a tunable means of controlling gelation, providing a more than three-hour printing window while simultaneously enhancing the hydrogel's radical-scavenging properties. Notably, even low KI concentrations enabled extrusion through ultra-fine 32G needles (108 µm inner diameter) and allowed the fabrication of large, complex structures that retained their integrity (Figure 1b–c).[6] This enhanced printability expanded the bioink's utility to more advanced biological applications, including a 3D osteoarthritis model in which stem cells and chondrocytes were co-cultured to study how stem cells influence inflammation-driven changes in cartilage (Figure 1d). The dynamic nature of the bioink supported cell–cell communication within a physiologically relevant microenvironment, demonstrating its potential for precision disease modeling and therapeutic screening.

Would you like to submit a column contribution?

We would like to invite anyone among our members to propose their contribution to this new column for the ScSB newsletter. Our goal is to enrich our community with expert opinions and angles from our diverse members. So, if you are brimming with exciting research, interesting viewpoints, or cool commentaries, we will be happy to take a look at it!

Feel free to email your piece for our review.

Pushing the boundaries of 3D bioprinting: engineering strategies for designing hyaluronic acid-based bioink

Future perspective: Our group is pushing the boundaries of 3D printing and bioprinting by developing 3D-printed bone-mimetic biomaterials and novel shape-memory hydrogels that could be implanted via minimally invasive procedures for tissue regeneration (unpublished results). These materials offer more than just mechanical support, they can be functionalized with bioactive proteins to maintain stem cell properties and guide their differentiation toward cartilage-like tissue. Taken together, our work tells a story of how chemical innovation in hyaluronic acid can transform bioprinting: from improving cell-friendly printing fidelity, to enabling sophisticated 3D disease models, to creating constructs that are ready for clinical delivery. Looking forward, we envision a future where customizable, cell-laden hydrogels can be printed on demand, tailored to patient-specific tissues, and delivered with minimal intervention. Thoughtful molecular design is turning bioprinting into a powerful platform for regenerative medicine, precision disease modeling, and next-generation therapies, bringing laboratory discoveries closer to real-world impact.

References. (1) Lee et al. Chem. Rev. 2020, 120, 10834–10886. (2) Oommen et al. Adv. Funct. Mater., 2013, 23, 1273–1280. (3) Bermejo-Velasco, et al. ACS Appl. Mater. Interfaces, 2019, 11 (41), 38232-38239. (4) Bermejo-Velasco et al. Biomacromolecules, 2019, 20, 1412–1420. (5) Tavakoli et al. Adv. Funct. Mater., 2024, 34, 2307040. (6) Tavakoli et al. Adv. Mater., 2025, 2500315.

Associated Professor Oommen Varghese

Translational Chemical Biology Group,
Macromolecular Chemistry Division,
Department of Chemistry-Ångström,
Uppsala University.
oommen.varghese@kemi.uu.se

Shima Tavakoli

PhD student
Translational Chemical Biology Group,
Macromolecular Chemistry Division,
Department of Chemistry-Ångström,
Uppsala University
shima.tavakoli@kemi.uu.se

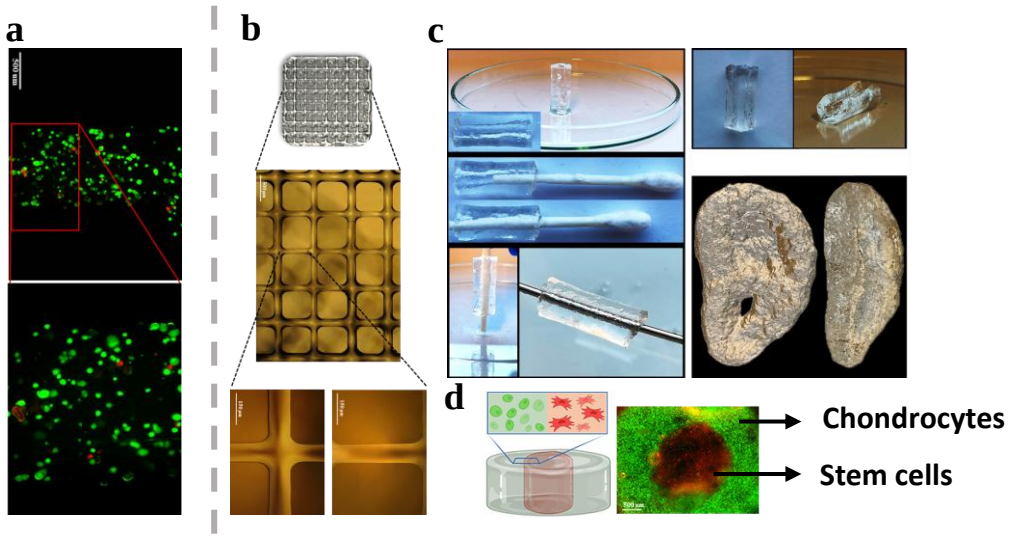

Figure 1. Structural and biological evaluation of 3D-printed biomaterials. (a) Viability of hMSCs following 3D bioprinting of high-fidelity constructs using disulfide (dynamic) and thiazolidine (non-dynamic) crosslinking chemistries. (b–c) 3D printing of disulfide-crosslinked hydrogels to fabricate tubular and miniaturized human ear structures. (d) Design of multicellular 3D-printed disease models used to study cell migration and interactions between inflamed chondrocytes and hMSCs. Images reprinted from References 5 and 6 under CC BY license agreements.

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Upcoming events in Scandinavia

GUEST REGION
SCANDINAVIA

TERMIS
EU-Chapter
2026 PALMA DE MALLORCA
21-24 APRIL / SPAIN

From Nature to Health: Biopolymers in Tissue Engineering

Scandinavian Society of Biomaterials is proud to participate in organising the Guest Region Symposium at the TERMIS –EU 2026 conference in Palma de Mallorca 21-24 April 2026.

Under the theme "***From Nature to Health: Biopolymers in Tissue Engineering***", this special session will showcase the latest advances in the design, characterisation, and application of biopolymers for tissue engineering and regenerative medicine. The symposium will bring together leading researchers from **Norway, Sweden, Denmark, and Finland**, highlighting innovative approaches inspired by nature to address key challenges in tissue repair and regeneration.

This dedicated session will offer a unique opportunity to explore the rich scientific landscape of Scandinavia and foster collaboration between the TERMIS-EU community and the vibrant biomaterials research network in the region.

We hope to see you at TERMIS-EU this year! It will be a good warm up for ScSB 2026 held just a few weeks later!

Symposium chairs:

Hanna Tiainen
University of Oslo, Norway

Berit L. Strand
Norwegian University of Science and Technology, Norway

Manuel Gomez-Florit
Health Research Institute of the Balearic Islands, Spain

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Career

Here we list upcoming PhD defences, open positions as well as other career opportunities. Please feel free to send us relevant information to include in this column!

Open positions

Several PhD and postdoctoral researcher positions in Sweden are currently open for application:

Uppsala University
MSCA **PhD position** in Biomedical Engineering with focus on AM of Mg alloys – apply before 31.12.2025

Chalmers University of Technology
Postdoc in Bioelectronics – apply before 20.01.2026

Karolinska Institutet
Research specialist in pluripotent stem cell-derived cell therapies – apply before 23.12.2025

KTH - Royal Institute of Technology
Postdoc position in Polymer Technology – apply before 16.01.2026

Young Scientist Forum

A series of webinars specifically aimed to the young biomaterials scientists – A platform where you can hear experts talk about science, useful career tips, and scientific debates.

Next webinar: 12 January, 2026 – Sustainability in the lab

Check out our website for detailed info!

Do you have a suggestion for webinar topics? Contact one of our YSF representatives or fill in our feedback form!

Information for advertisers

The newsletter of the ScSB is published 2-4 times per year. It is distributed by e-mail to a highly focussed Scandinavian and international readership, bringing news and reports of interest to our subscribers. Accounts of activities in the participating countries, such as new research projects and new facilities are published, and open positions and PhD defences are announced. There are currently approximately 500 subscribers to the newsletter.

Current advertisement and promotion article prices (€):

One page:	100
Half page:	70
Quarter page:	50

About ScSB

The Scandinavian Society for Biomaterials (ScSB) was founded in May 2008. The focus of our activities is centred on organizing an annual Biomaterials meeting and thereby promote cross-fertilization of Biomaterials research in the Nordic countries and the Baltic states. In addition to academic researchers, the society welcomes students and industry to participate in the yearly meetings. ScSB is an affiliated society to the European Society for Biomaterials (ESB) and its President takes part in the ESB National Societies Meetings.

Where to find us

You can reach us and follow ScSB's updates on different communication channels and network.

- Website: Scandinavian Society for Biomaterials
- Social media:

- e-mail list: Sign up here to our e-mail list and don't miss our latest news
- Newsletter : e-mail distribution.