



Swiss Society for Biomaterials + Regenerative Medicine  
Société Suisse des Biomatériaux + Médecine Régénérative  
Schweizerische Gesellschaft für Biomaterialien + Regenerative Medizin  
Società Svizzera di Biomateriali + Medicina Rigenerativa

## 2023 WINTER NEWSLETTER

Dear All,

Your Society is pleased to share this Winter 2023 Newsletter, with a recap on the Annual Meeting, and key information about upcoming events and much more. Outline:

### A RECAP OF THE SSB+RM2022

- 26th Annual Meeting of the SSB+RM2022

### A RECAP OF THE YS event

- 5<sup>th</sup> Young Scientist Symposium – Bringing Materials to Life, 20.1.2023

### UPCOMING EVENTS YOU SHOULDN'T MISS

- YS events: joint summer school with BIOMAT (France) in Zürich, 15-16.6.2023
- SSB+RM2023 (taking place at ESB 2023), 4-8.9.2023
- Other Biomaterials & Regenerative Medicine Related Events

### FEATURED EC MEMBER

### WHAT HAS THE SSB+RM BEEN COOKING?

## A RECAP OF THE SSB+RM2022

The SSB+RM 2022 was held from June 6<sup>th</sup> to 9<sup>th</sup> at the ETH Zürich main building and attracted 110 participants, many of them in their early scientific career (PhD students and postdocs). Being among the first conferences that could be held without COVID restrictions, we could fully enjoy the very active scientific discussions and time for exchange with colleagues!

For the 2022 conference we decided to have a broad program consisting of sub-sessions entitled “Advanced strategies for the engineering and evaluation of tissues”, “Engineering Organoids”, “Bone: from development to engineering”, “4D Tissue engineering”, “Mechanotransduction from cells to tissues”, “Company / Startup / Clinical”, and “Advanced cancer models”. The sessions were framed by presentations of 19 internationally renowned keynote and invited speakers in the field of single cell analysis (by transcriptomics and spatial phenotypic characterization), organoids, smart and highly tuneable hydrogels, mechanics in tissue engineering, growth factor delivery, advanced three-dimensional tissue models, and extracellular matrix in tissue regeneration, which altogether covered important aspects of the design and evaluation of engineered tissues. This international conference scheme was made possible through the support of the Swiss National Science Foundation (SNSF).



Key to the conference’s success, multiple young scientists presented their work in this international conference setup: 24 held an oral presentation, 10 a rapid fire poster presentation and all remaining 44 young scientists presented their work in the poster session. Oral sessions were chaired by one senior and one young scientist, giving again 11 young scientists the opportunity to actively participate in the conference. Additionally, young scientists set up the conference site and organized everything to make the scientific sessions running smoothly and highly professional. Among the conference highlights was

the presentation of the 2022 RMS Research Award winner Saba Rezakhani who gave an impressive overview over her PhD thesis on organoids and novel biomaterials. We were again able to honor the best oral and poster presentations with the awards going to Lorenza Garau Paganella and Dhananjay Deshmukh, respectively.

The excellent level of all presentations allowed the exchange of the newest technologies and advances in biomaterials and regenerative medicine. Additionally, this conference greatly presented the excellent level of Swiss research in this scientific field. The 2022 SSB+RM conference promoted very active discussions throughout the oral and the poster sessions. Importantly, we observed vivid interaction between scientists of all career levels and therefore are convinced that the conference was a great success. We believe that the insight into novel technologies and the extensive networking within our society was a great chance to foster our innovative and international competitive research activities.

One of the highlights of the conference was the social event that took place at the Zürich Zoo and included a guided tour, an apéro and the dinner. The tour guides explained impressively how the Zurich Zoo educates people and makes them aware of the importance of protecting species and the environment. During the dinner, the served dishes and drinks together with the close proximity to the Asian elephants in the Thailodge provided a unique atmosphere for an unforgettable evening.

## **A RECAP OF THE 5<sup>th</sup> SSB+RM YS Symposium – Bringing Materials to Life**

The 5th SSB+RM Young Scientists Symposium had one of the biggest attendances yet and we were very happy to welcome 91 people for the event. Though most of the participants were from research institutions in Zürich (ETH Zürich, UZH, USZ), over a third was affiliated to an institution from outside of Zürich (AO Research Institute Davos, EMPA, EPFL, Radboud UMC, and University of Basel).

We were particularly happy to also welcome our two keynote speakers to the event which were Prof. Dr. Bert Müller (mechano-sensitive nanoparticles for the targeted treatment of vasodilators), professor at the Biomaterials Science Center at the University of Basel, and Prof. Dr. Li Tang (novel approaches to improve cancer immunotherapy), associate professor at the Institute for Bioengineering and the Institute for Materials Science and Engineering at the EPFL in Lausanne. We greatly appreciated their participation and enthusiasm for our event!

In addition, there were 8 student presentations of 15 minutes each (incl. Q&A) as well as a block of 10 two-minute rapid fire presentations. Moreover, we had 31 poster presentations at this year's symposium covering everything from the development of new materials for bioprinting to the role of specific cellular pathways in different joint diseases. We were very happy to count on our amazing jury which attentively listened to all of the oral contributions and graded all of the poster presentations. The

winners and runner-ups were Esma Tankus (University of Basel) and Simone Ponta (ETH Zürich) for the oral presentations, Oscar Cipolato (ETH Zürich) and Mira Jacobs (University Hospital Zürich) for the rapid fires and Stéphane Bernhard (ETH Zürich) and Anna Neuer (EMPA) for the posters.

We closed our symposium with some tasty hummus and baba ganoush at the apéro where the discussions then continued in a more informal setting.

This event would not have been possible without the support of certain institutions and individuals. We would like to thank the SSB+RM parent organization and ETH Zürich for providing us with the necessary



infrastructure to host this event as well as the financial contribution. And we would like to thank our amazing jury including Dr. Parth Chansoria, Dr. Alexander Ehret, Dr. Katharina Gengschätz, Dr. Géraldine Guex, Dr. Anna Marsano and Dr. Markus Rottmar, as well as the AO Research Institute Davos for sponsoring the name tags for our symposium.

## UPCOMING EVENTS YOU SHOULDN'T MISS

### 1. YS events: joint summer school with BIOMAT (France) in Zürich

The Young Scientists have teamed up with the Young Scientists from our French sister society BIOMAT to put together an exciting **two-day Swiss-French Biomaterials (SFB) Summer School** that will take place on **June 15<sup>th</sup> and 16<sup>th</sup>, 2023 at ETH Zürich**.

We are looking forward to a great event featuring outstanding keynote speakers, workshops, career path round table, lab tours (at for example ETH Zürich, University Hospital Zürich and start-ups), and optional poster/rapid fire presentations.



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During the lunch breaks and the social evening at a reserved bar, you will have time to network and meet young scientists in the field of biomaterials and regenerative medicine coming from several Swiss and French research institutes/companies. And all of it, free of charge!

You can now register for free [here](#). And do not hesitate to contact us ([ysbm.ch@gmail.com](mailto:ysbm.ch@gmail.com)) if you have any questions. We are looking forward to a great event and to see many of you there!

# SFB 2023

## SWISS-FRENCH BIOMATERIALS

YOUNG RESEARCHERS' SUMMER SCHOOL

15-16.06.23

@SSB\_RM

@BIOMAT3

📍 ZÜRICH, ETH

**Preliminary program:**

- Learn new knowledge & skills: 2 plenary lectures by academic researchers, workshops & round tables on soft skills, career path and academic-industrial partnerships
- Present & discuss your work: get the opportunity to present your work with a poster session
- Connect with the people from your field: social event on the first night!

SSB+RM  
JOURNÉE D'ÉCHANGES  
BIOMAT  
OFFICE RESEARCH INNOVATION

### Preliminary programme

Swiss-French Biomaterials  
Young researchers' SUMMER school

**Thursday, June 15<sup>th</sup> 2023, ETH Zürich Hauptgebäude (HG)**

**Morning session**

08.30	Registration + Poster hanging
09.15	Keynote #1: Dr. Yassine Maazouz (RMS Foundation, Switzerland)
10.00	Break + Poster session
10.30	Career path round table
10.30	tba
12.30	Lunch + Poster session

**Afternoon session**

13.30	Soft skill workshop: How to make a compelling abstract and presentation/poster Prof. Mark Tibbitt (ETH Zürich)
15.30	Break + Poster session
16.00	Rapid fires followed by Poster session
19.00	Social Evening at Amboss Rampe Zürich

**Friday, June 16<sup>th</sup> 2023, ETH Zürich Hauptgebäude (HG)**

**Morning session**

09.15	Keynote #2: Dr. Carla Palomino-Durand (University of Lille, France)
10.00	Break + Poster session
10.30	Workshop: How to communicate in industry vs. academia
10.30	Tba
12.30	Lunch + Poster session

**Afternoon session**

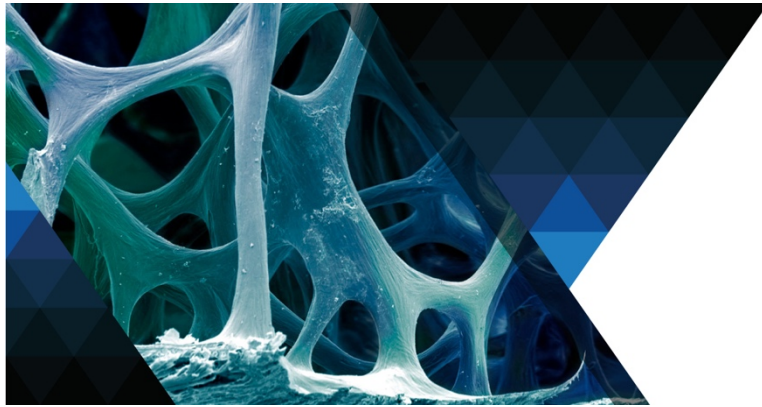
13.30	Lab tours at ETH Zürich and University Hospital Zürich
16.00	Closing session

## 2. SSB+RM2023 / ESB2023

We are excited that in 2023 the SSB+RM conference will take place as symposium within the [33rd Annual Conference of the European Society for Biomaterials](#), held in **Davos from September 4 to 8, 2023**. EC Member Matteo Moretti is diligently working in coordination with our President Martin Ehrbar and with the ESB2023 Chair Matteo D'Este to arrange a varied and stimulating program showcasing the excellence in biomaterials research in Switzerland. Stay tuned because keynote speakers will be announced soon. Usually attended by about 1000 participants, the ESB2023 is the prime event in our field in Europe. If you would like to make your company, institution or project consortium known to all operators in this field, the ESB2023 offers excellent opportunities to showcase. Startups are particularly welcome. For more information, please visit our website <https://esb2023.org/>. Conference organizers



recommend to book accommodation soon to take advantage of good deals before prices go up; most hotels offer free cancellation anyway. The conference team and the SSB+RM are looking forward to welcoming you to Davos next September 4<sup>th</sup> until 8<sup>th</sup>, 2023. For specific inquiries on ESB2023 please write to: [esb.davos@aofoundation.org](mailto:esb.davos@aofoundation.org)



### 3. Other Biomaterials & Regenerative Medicine Related Events

- **16 – 17.09.2023: ICSCBRM**, 17th International Conference on Stem Cells and Biomaterials for Regenerative Medicine in Zürich, Switzerland

## FEATURED EC MEMBER



In this newsletter we feature our SSB+RM Communication lead: **PD Dr. Anna Marsano**. Anna joined the SSB+RM in November 2021, and since then she has been an active and passionate member to the society. We would like to know her better in and out the SSB+RM.

### What do you enjoy most about being part of the SSB+RM?

I am really honored and grateful to be part of the SSB+RM. All the members are very welcoming, inclusive and active on improving the dissemination of excellent science and of leading-edge technologies. I found wonderful also how the society promotes the young scientists' further education and interactions through dedicated activities and seminars as well as financial support. I like the SSB+RM because it is a



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unique society including excellent researchers, young scientists, key representatives of the industry, and clinical experts.

**Tell us a little about your work & career trajectory.**

During my bioengineering training at the University of Genova in Italy, I had the great opportunity to join the tissue engineering course of Prof. Ivan Martin. He was really inspiring and I loved the tissue engineering approach. I obtained my PhD degree at the EPFL working on a European project on the generation of a meniscus substitute. I then performed my postdoctoral training at Columbia University (at Vunjak Novakovic's lab), where I could significantly deepen my knowledge on advanced bioreactor culture to closely mimic in vitro organ-specific physiological and physical cues, as well as biochemical micro-environments for developing functional cardiac models. After three years, I moved back to Europe. I first joined Prof. Martin's lab, and then in 2012 Dr. Banfi's research group at the University of Basel focusing on a rapid vascularization strategy of critical size patches as well as anti-angiogenic approaches to control blood vessel ingrowth in engineered hyaline cartilage tissues. Since January 2014, I am leading my own lab at the Department of Biomedicine at University of Basel. Our work is focusing on the development of angiogenic therapies for the treatment of myocardial infarction, as well as of healthy and diseased 3D in vitro cardiac models.

**When you manage to escape the lab, what do you love most to do?**

I love at most walking with my husband, Stefano, and my dog, Kira, being outside in the nature. My other big passion is yoga. In 2008, I became a certified yoga teacher and, besides not having a lot of time to share my passion with others, I still continue to practice and I am always curious to learn more and deepen my practice. I also like running, I completed the New York marathon twice, which is a unique experience of being surrounded by amazing city landmarks and warm people cheering and supporting!

**What is your favorite book?**

I really enjoyed Siddhartha by Herman Hesse. I read it several times both in German and in Italian and every time I learned something new. I loved the way he left his comfort-zone and he opened to new experiences to find out that he must find the true enlightenment within himself.

**And your favorite travel spot?**

I really love being in the nature and getting to know the local culture of the place I visit. My best holiday is when I have the opportunity to see the place through the eyes of the people living there and loving their origin. I dislike feeling a common tourist while traveling, since I would really like to blend in and being part of the community. One of my favorite travel spots is Sardinia, since I had the privilege to discover it through my friends living there that made it so dear to me.



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## **Mountain or sea?**

I love mountains, but I also appreciate a lot being at the seaside. In general, I don't like crowded places, so definitely I like the sea when it is low season and I have the opportunity to be on a sailing boat or a kayak.

## **Switzerland or Italy?**

I am attached to both these countries and I appreciate a lot their unique landscapes. Of Switzerland I love the most the nature and the organization, while of Italy I like the food and the creativity of the people. I am grateful to feel at home in both these wonderful countries.

## **What do you miss most from home (village/city where you're from)?**

I come from Genova, a city on the Mediterranean Sea and I very much miss looking at the sea, both for the wideness of the landscape as well as the impetus of high waves during a storm: it helps me put things in a different perspective and to respect the nature. Of course, at the most I miss being with my family and friends.

## **What is something you dislike/hate that most people love?**

I am not keen to have only relaxing holidays for example laying down on the beach the whole day, I always prefer being a bit active by walking, being in the water either kayaking or sailing.

## **What is your favorite meal to cook for guests?**

I like preparing farinata, a typical dish from Genova, which is made of chickpea flour. This typical Genovese dish was discovered by accident. I have been told that in the 13th century, on the Genovese galleys during a storm, some oil barrels and sacks of chickpeas overturned, soaking in salt water. The sailors left the mixture dry under the sun and discovered a true delicacy! The mix of oil, salt, water and chickpeas was then reproduced and optimized through the years. As my predecessors, I am still working on the improvement and experimenting new pairing with vegetables and cheese, getting inspiration also from the delicious local Swiss products!

## **What career advice can you offer YS who are in the early stage of their career journey?**

My recommendations will be to follow a true passion and have one or more mentors that can guide them in becoming a critical-thinking scientist. Do not be afraid to share your knowledge and collaborate with others, because this is the real spirit of scientific research.

## **Is there something you would like to change in the academy system to further support women?**

Well, in general, I would like that there would more funding opportunities for senior postdocs (being them women or men) as they are critical assets for the success and progress of a research group. I also feel that it would be fair to give a shared parental leave in order to reflect better the changing society and the new needs of a modern family where men play a key role



in growing a small child. I think we should learn more from the Scandinavian countries (e.g. Sweden), where parents have equal opportunity to spend time with the family and a better work-life balance. I strongly believe that this could be a huge step forward for women (but also for men, I guess) and would also support them in their career, especially in the academy.

## WHAT HAS THE SSB+RM BEEN COOKING?

### Highlighted publications

W.A. Lackington, L. Fleyshman, P. Schweizer, Y. Elbs-Glatz, S. Guimond, and M. Rottmar "The response of soft tissue cells to Ti implants is modulated by blood-implant interactions" *Materials Today Bio*, 100303 (2022).

W.A. Lackington, P. Schweizer, M. Khokhlova, C. Cancellieri, S. Guimond, A.-L. Chopard-Lallier, J. Hofstetter, P. Schmutz, X. Maeder, and M. Rottmar "Femtosecond laser-texturing the surface of Ti-based implants to improve their osseointegration capacity", *Advanced Materials Interfaces*, 2201164 (2022).

Kouba L, Bürgin J, Born G, Perale G, Schaefer DJ, Scherberich A, Pigeot S, Martin I. A composite, off-the-shelf osteoinductive material for large, vascularized bone flap prefabrication. *Acta Biomater*. S1742-7061(22)00680-8 (2022).

M. A. Wesdorp, A. Schwab, E. Irem Bektas, R. Narcisi, D. Eglin, M. J. Stoddart, G.JVM Van Osch, M. D'Este "A culture model to analyze the acute biomaterial-dependent reaction of human primary neutrophils in vitro" *Bioactive Materials* 20, pp 627-637 (2023).

D. van der Heide, G. Cidonio, M. J. Stoddart, M. D'Este "3D printing of inorganic-biopolymer composites for bone regeneration" *Biofabrication*, 14 042003 (2022).

M. Maintz, D. Seiler, F.M. Thieringer, and M. de Wild "Topology-optimized patient-specific osteosynthesis plates: Methodology to semi-automatically design additive-manufactured osteosynthesis plates for the fixation of mandibular fractures." *Current Directions in Biomedical Engineering* 8, 177-180 (2022).

N. Rohr, C. Brunner, B. Bellon, J. Fischer, and M. de Wild "Characterization of a cotton-wool like composite bone graft material." *J Mater Sci: Mater Med* 33, 61 (2022).

E. Maevskaia, N. Khera, C. Ghayor, I. Bhattacharya, J. Guerrero, F. Nicholls, C. Waldvogel, R. Bärtschi, L. Fritschi, D. Salamon, M. Özcan, P. Malgaroli, D. Seiler, M. de Wild, and F. E. Weber "Three-Dimensional Printed Hydroxyapatite Bone Substitutes Designed by a Novel Periodic Minimal Surface Algorithm Are Highly Osteoconductive." *3D printing and additive manufacturing* (2022).

B. Marco-Dufort, J.R. Janczy, T. Hu, M. Lütolf, F. Gatti, M. Wolf, A. Woods, S. Tetter, B.V. Sridhar, and M.W. Tibbitt "Thermal stabilization of diverse biologics using reversible hydrogels." *Science Advances*, 8, eabo0502 (2022).

P.A. Clavien, P. Dutkowski, M. Mueller, D. Eshmuminov, L. Baustista Borrego, A. Weber, B. Muellhaupt, R.X. Sousa Da Silva, B.R. Burg, P. Rudolf von Rohr, M.J. Schuler, D. Becker, M. Hefti,



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and M.W. Tibbitt “Transplantation of a human liver following 3 days of ex situ normothermic preservation.” *Nature Biotechnology*, 40, 1610–1616 (2022).

E. Avilla-Royo, B. Roschitzki, S. Pfammatter, J. Grossmann, P. Airaghi, L. Vonzun, N. Ochsenbein-Kölble Q. Vallmajo-Martin, & M. Ehrbar “Amnion Cells in Tailored Hydrogels Deposit Human Amnion Native Extracellular Matrix”, *Advanced Functional Materials* 32, 2204543 (2022).

K. Gegenschatz-Schmid, S. Buzzi, J. Grossmann, B. Roschitzki, R. Urbanet, R. Heuberger, D. Gluck, A. Zucker, & M. Ehrbar “Reduced thrombogenicity of surface-treated Nitinol implants steered by altered protein adsorption”, *Acta Biomater.* 137, 331-345 (2022).

E. Avilla-Royo, L. Vonzun, F. Seehusen, Q. Vallmajo-Martin, F. Famos, L. Moser, K. Gegenschatz-Schmid, L. Krattiger, N. Strübing, M. Weisskopf, U. Moehrlen, N. Ochsenbein-Kölble, & M. Ehrbar “Engineered platelet-derived growth factor-releasing hydrogels promote fetal membrane healing in vivo”, *Advanced Functional Materials*, 202208910 (2023).

We wish you all the best and a wonderful start of the week!

With kind regards,

Your SSB+RM Executive Committee

