

Biointerfaces International Conference 2022 · Zurich

Pre-Conference Seminar Program & Information



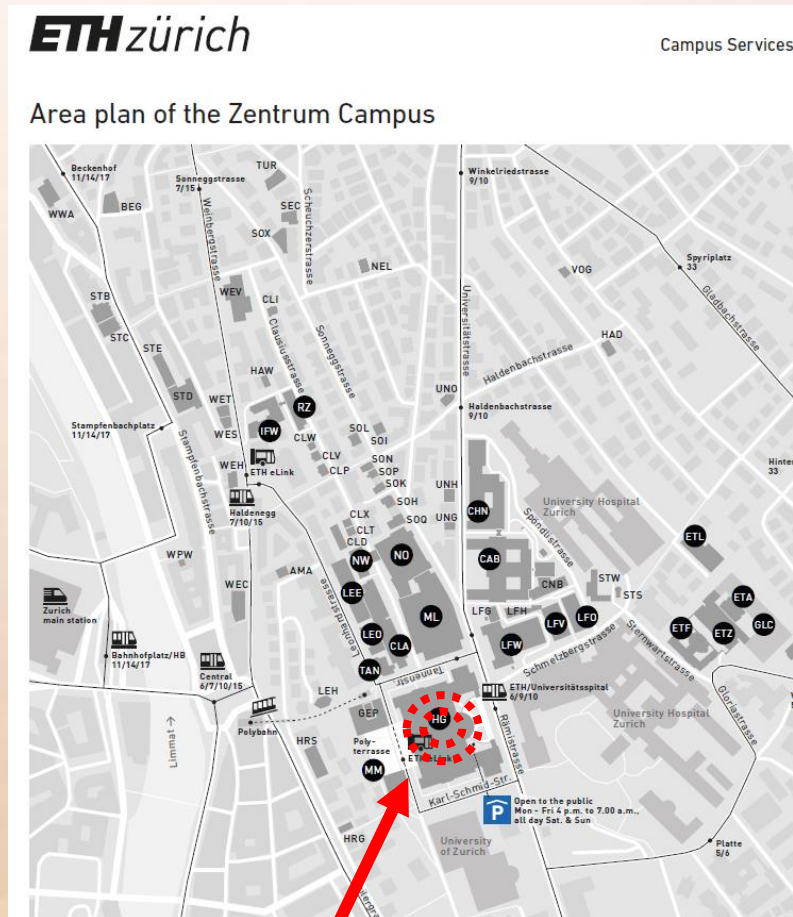
ETH zürich



**Universität
Zürich** ^{UZH}



How to find the BIS venue



Link: <https://ethz.ch/en/campus/access/zentrum.html>

Travelling from Zurich Central Station

From the Bahnhofquai/HB stop

Tram No. 6 (direction Zoo) get off at "ETH/Universitätsspital" stop.
Journey time approx. 6 minutes

From the Bahnhofstrasse/HB stop

Tram No. 10 (direction Airport or Oerlikon station) get off at "ETH/Universitätsspital" stop. Journey time approx. 6 minutes

From the Bahnhofplatz/HB stop

Tram No. 3 (direction Klusplatz) get off at "Central" stop, from Central by Polybahn (departs every 3 minutes) to the Polyterrasse next to the main building of ETH
Journey time approx. 8 minutes

You will require a ticket that is valid for zone 110 (City of Zurich)

WLAN Access for Guests at ETH Zurich

Scientists of a University get access via eduroam with their home University credentials

Public WLAN

1. Choose one of the networks “public” or “public-5”
2. The login page opens automatically
3. Please enter your mobile phone number in the field “Mobile Phone Number”
4. Now activate the field “I accept the terms of use”
5. Choose “Request access code”
6. A code will be sent to your mobile phone
7. Enter this on the new page “Your Access Code”
8. Click on “Submit Registration”. You are now connected to the WLAN

Mandatory information:

Contact details (telephone number for sending SMS messages or for verification purposes).

Meeting Venue of BIS: ETH Zurich

The BIS is held in the Main Building HG at ETH Zurich. The registration desk is located at the main entrance on the E-floor (ground floor)

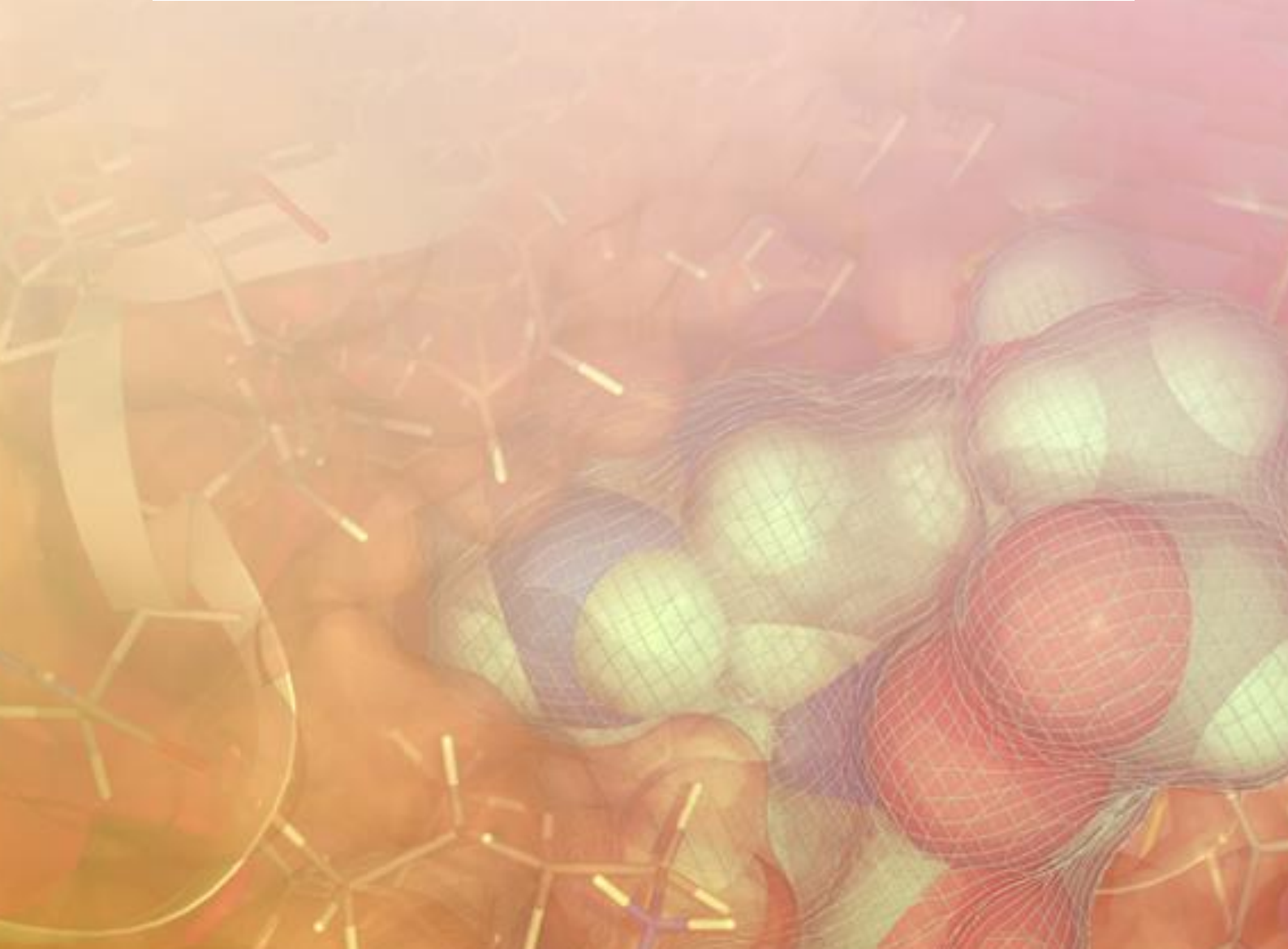
Presentations & Coffee Break

E-Floor

HG E 5 / Foyer ESüd

Please follow the signposts

Detailed Floor Plan for BIS



**Pre-conference Biointerfaces International Seminar (BIS-2022),
ETH Zurich, Sept 12, 2022, Zurich, Switzerland**

As part of the 4th **Biointerfaces International Conference (BIC), Zurich, Switzerland, Sept 13-15, 2022 / link to registration**

Background and Motivation

We will provide **junior researchers (PhD students, postdocs), early career scientists as well as participants from industry or government** with the opportunity to get carefully introduced to these themes (**no standard science talks, please**). This typically includes careful coverage of background fundamentals, current state of the knowledge in the specific field, and addressing important unsolved problems that prevent breakthroughs, approaches to solving them and future opportunities for those working in this field. **In general, we recommend to focus on few conceptual questions and invest sufficient time on each of them, rather than trying to cover a too large field.**

Seminar Forum

The Seminar will provide participants with carefully designed introductory lectures on **major science & engineering topics** covered by the BIC-2022. Secondly, a number of “**soft themes**” will be addressed by experienced teachers with diverse backgrounds. **Workshop-like slots** will cover the following topics:

- **Pros and Cons Debates / Round Table**
- **Lost in Translation: Hurdles and Opportunities in the Translation of Scientific Discovery to Clinics and Market**
- **Moderation of groups of students in the lunch break: “Ask Anything”**

Furthermore, personal, informal and direct pedagogical **interactions between speakers and participants** will take place. This also includes **demonstrations, videos, etc., dialogue and discussions.**

Chair function

Chairs will guide through the morning and afternoon sessions. They will be strict in limiting the **presentations to 30 min, allowing for 10 min discussion times with the audience.**

Seminar chairs and lecturers are partly also speakers or chairs at the following BI conference to build bridges between the two events.

BIS-2022

Chair: Prof. Barbara Rothen-Rutishauser, Adolphe Merkle Institute, Université de Fribourg, CH-1700 Fribourg

Co-Chair: Prof. Marcus Textor, formerly ETH Zurich, CH

Biointerfaces International Seminar (BIS), ETH Zurich, Switzerland, Monday, Sept 12, 2022				
Time slots	Topic / Titles	Lecturers (confirmed)	Keywords	Chairs (confirmed)
09:00 - 09:10	Welcome & Introduction	Barbara Rothen-Rutishauser , Adolphe Merkle Institute, University of Fribourg, CH		
Opportunities and limitations of <i>in vitro</i> – <i>in vivo</i> assays				
09:10 - 09:50	Lecture 1 <i>21st Century Cell Culture for 21st Century Research (Intro, Overview)</i>	Thomas Hartung , Johns Hopkins Bloomberg School of Public Health, US	<i>Bioengineering, Stem Cells, Microphysiological Systems, Organoids, Organ-on-Chip, Good Cell Culture Practice, Reporting, Standards, Validation</i>	Barbara Rothen-Rutishauser Adolphe Merkle Institute, University of Fribourg, CH
09:50 - 10:20	Pro Con Debate “ <i>In vitro assays will eventually replace all academic and industrial in vivo (animal) tests for drug development</i> ”	Pro: Ivan Martin , University of Basel, Basel, CH Con: David Grainger , The University of Utah, Salt Lake City, US		Urs Frey , MaxWell Biosystems AG, Zurich, CH Markus Rimann , ZHAW Life Sciences und Facility Management, Wädenswil / TEDD-Network, CH
10:20 - 10:50	<i>Break</i>			
Tissue engineering and biomaterials				
10:50 - 11:30	Lecture 2 <i>In vitro biomimetic neuronal interfaces</i>	Francesca Santoro , Tissue Electronics Lab Istituto Italiano di Tecnologia, IT	<i>Nano and Microstructures, Neuron-chip Coupling, imaging of Interfaces, Electron Microscopy, Dynamic Biomaterials</i>	Janos Vörös , Dep. of Inform. Technol. Electrical Eng., ETH Zurich, CH
11:30 - 12:10	Lecture 3 <i>Synthetic Hydrogels for Regenerative Medicine</i>	Andrés J. Garcia , School of Mechanical Engineering, Atlanta, GA, US	<i>Fundamental aspects of natural and synthetic hydrogels</i>	Olivier Frey , Head of Technologies & Platforms and Project Manager of Microphysiological Systems, InSphero, Zurich, CH

12:10 - 13:40	Lunch and More – Ask Anything	H. Michelle Grandin , Scientific Consultant BioMaterials & Medical Devices, Instructor at UCSD Extension, US Sally McArthur , Institute for Frontier Materials, Deakin University, Melbourne, AU	<i>Two senior, experienced persons at each table with (young) participants to ask any question (e.g., related to career planning, publication, collaborations, funding, life/work balance, etc.)</i>	*) Need for a larger number of experienced persons (list at end of this table)
Characterisation in 3D and organoid technology				
13:40 - 14:20	Lecture 4 <i>Characterisation of 3D cell systems</i>	Sally McArthur , Institute for Frontier Materials, Deakin University, Melbourne AU	<i>Exploring the issues associated with the translation of characterization tools and bioassays from 2D to 3D cell culture systems</i>	David Grainger , The University of Utah, US
14:20 - 14:50	Round table “How will organoid technology shape our societal future”	Adrian Roth, Janos Vörös, Catarina Brito, Sally McArthur		Falko Schlottig , FHNW, Muttentz/Basel, CH
14:50 - 15:20	<i>Break</i>			
Cell analysis and development of standard protocols				
15:20 - 16:00	Lecture 5 <i>Development of Standard Operating Protocols (SOPs) for Pre-Validation of in vitro Assays</i>	Barbara Rothen-Rutishauser , Adolphe Merkle Institute, University of Fribourg, CH	<i>In Vitro Testing, Standard Operating Protocols, Pre-Validation</i>	Andrés J. Garcia , School of Mechanical Engineering, Atlanta, GA, US
16:00 - 16:40	Lecture 6 <i>Comparable in vitro measurements</i>	Matthias Rösslein , EMPA St Gallen, CH	<i>Nano Technology, In Vitro Testing, Analytical Chemistry, Next Generation Sequencing</i>	Núria Montserrat Pulido , Institute for Bioengineering of Catalonia, Barcelona, SP
16:40 - 17:40	Lost in Translation: <i>Hurdles and opportunities in the translation of scientific discovery</i>	Eliav Haskal , Innovation Manager, NCCR Bio-Inspired Materials, University of Fribourg, Fribourg, CH	<i>Short talks by Eliav and Sally. Instant feedback provided for attendees wishing to rapidly pitch ideas.</i>	Stephanie Boder-Pasche , CSEM, Neuchâtel, CH

	<i>to clinics and market - including a pitch development workshop</i>	Sally McArthur , Institute for Frontier Materials, Deakin University, Melbourne AU		Susan Gibbs , Amsterdam University Medical Center, Amsterdam, NL
	WrapUp	Barbara Rothen-Rutishauser , Adolphe Merkle Institute, University of Fribourg, CH Markus Rimann , ZHAW Life Sciences und Facility Management, Wädenswil / TEDD-Network, CH		--

*) Team of experienced persons for “**Lunch and More – Ask Anything**” session, supporting Chairs Sally McArthur & Michelle Grandin (12:10 – 13:40):

Jörg Güttinger, Barbara Rothen-Rutishauser, Eliav Haskal, Adrian Roth, Janos Vörös, Urs Frey, Olivier Frey, Andrés J. Garcia, David Grainger, Michelle Grandin, Sue Gibbs, Ivan Martin, Falko Schlottig, Catarina Brito, Núria Montserrat Pulido, Stephanie Boder-Pasche, Marcus Textor

Additional info to two program parts (Appendices 1 & 2):

Appendix 1

H. Michelle Grandin, Sally McArthur

Topic: Lunch & More

Letter to Participants:

Michelle Grandin and I will be running an Ask Anything event over lunch. The event is designed to allow the mostly PhD and Post docs participants in the workshop to speak in small groups with a leading researcher from academia, industry or the wider Biointerface Science Community.

We would appreciate your support as experienced academic and industrial researchers and leader in our field to act as the mentors for the session. Each of you will be allocated to a table to meet with 2-4 of the workshop participants over the lunch period. You will spend 20 minutes at one table and then switch to a 2nd table for the final half of the lunch period.

I will be shortly asking the participants to send in 2-3 key questions they would like to discuss with the mentors during the session. These questions will be used to kick off the conversations at each table, but participants will be free to “Ask Anything” during the session.

Sally McArthur

Appendix 2

Sally McArthur, Eliav Haskal

Topic: Lost in Translation: hurdles and opportunities in the translation of scientific discovery to clinics and market It takes a village to do a lot of things these days, and innovation is no exception.

Abstract

You have a great idea, well you think you do, how do you test it, challenge your assumptions and find the right people to partner with to translate it into a product or service?

How do you identify an opportunity, determine what the market might need or how your research could be matched to an opportunity?

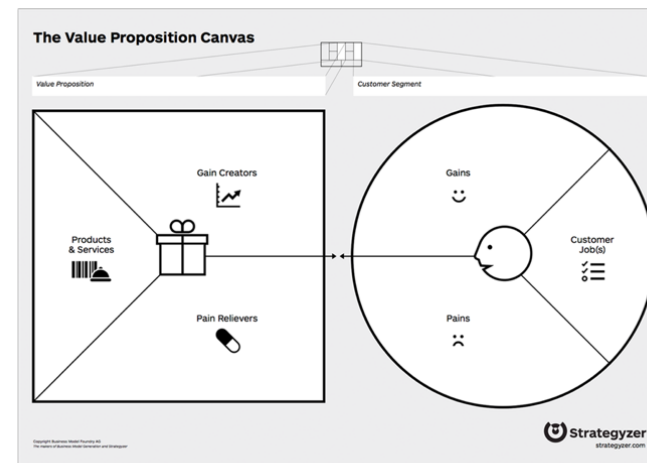
How do you find the right people to partner and collaborate with, get them excited about your research and help you test the idea in the clinic or with industry partners?

What does it take to turn your research into a product that can grow an existing business or underpin a new business?

What are the challenges along the way I need to be thinking about from the beginning, IP, regulation, clinical trials, reimbursement...?

In the Lost in Translation session we will discuss just how you can tackle these types of challenges. We will guide you through the types of questions you need to ask, the people you need to be speaking with and introducing you to people who have succeeded (and failed) on this journey. We will discuss how you get people excited about your ideas, find partners and collaborators and ways in which you can build a team to support the translation of your research into new products and services that target specific challenges and are both useful and usable in healthcare.

Research Impact Canvas		Project Name	01-Jan-2014	
			Iteration #x	
Problem What research problem do you aim to solve? • What question does your stakeholder wants to solve? • Top 3 pain points for stakeholder	Solution Describe top 3 features of your solution solving the top three problem elements IPR If applicable state what types of Intellectual Property Rights are involved and who owns them? E.g patents, Software code, Copy right, data bases, etc.?	Unique Value Proposition Single, clear, compelling message that states the value of your work from perspective of single stakeholder. Describe: a) Position of your solution and why you and your research are different (better?) b) Alternative solutions, not necessarily technological or other research in the field ...why worth paying attention?	Impact Relationships • How do you aim to achieve Impact? • How do you let the world know that you exist? • How do you grow your network? Research Context Define the context of your work In laymen terms describe the back ground of the field of research you are working in	Stakeholders Target groups for your research. Can be multiple stakeholders like: • Customer/user of end product • Industry partner • Research partners • Government • Etc.
Who are you? What do you bring to the table? What makes you and the institution you work for an attractive research partner?		Impact Define the short/middle term (concrete results) and long term (vision) impact of your research. How will the field, industry and world change after you finished your project? What do you get out of it, how will the project impact you and the institution you work for?		



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