

Program of “Living Borders” with a small accompanying display of exhibits from **MicroPop**, an exhibition developed by the Cluster of Excellence Controlling Microbes to Fight Infections, Research Center for Science Communication, University of Tübingen, and the State Academy of Fine Arts Stuttgart.

Thursday, May 21

14.00-14.30 Welcome and Introduction

14.30-15.30 **Micro-Pop - Design, Science and the World of Microbes**
Leon Kokkiliadis, Davina Höll, Michael Pelzer
(University of Tübingen, Cluster of Excellence *Controlling Microbes to Fight Infection*)

In this talk we present different dimensions of the interdisciplinary project “MicoPop – Design, Science and the World of Microbes”. After an introductory part we will discuss and reflect on a) borders of communication, co-creation, knowledge design and the popular and b) how crossing borders shaped the MicroPop project.

15.30-16.00 Coffee

16.00-17.00 **Plant waxes as time capsules**
Sarah Nemiah Ladd
(Department of Environmental Sciences, University of Basel)

Plants coat their leaves and other surfaces with waxy substances to minimize water loss. These waxes persist in the environment long after the plant dies, and can accumulate in sediments. We demonstrate how we can use plant waxes extracted from sediment cores to learn about past ecosystem and climatic changes in sites ranging from the Swiss Plateau to the tropical Pacific.

18.00-19.00 **Evening Lecture: DeepForest**
Claudia Pasquero
(Department of Urban Design, University of Innsbruck / ecoLogicStudio London)

“Diving deeply into a forest means losing oneself into the multiplicity of interconnecting processes that define its very existence; and with it our own identity. In our contemporary world, these processes are biological and digital, as both the forest and us are cyber-organic networks. Like the slime mould, it serves as both a woodland fungus and a biological computer, a form of wetware AI infrastructure with the capacity to plan a city.”

As Artificial Intelligence permeates the world, and with it, Architecture, the discipline may stand at the threshold of yet another paradigm shift. In this lecture, Claudia Pasquero will discuss her team’s recent work and research, exploring a vision of architects evolving from form-makers into system designers: spatial mediators between digital and biological realms. In this view, the design studio is no longer a room of drawings and models, but a living laboratory where code and culture, matter and metabolism, machines and landscapes coalesce.

Apéro

Friday, May 22

09.30-10.00 Coffee

10.00-11.00 **Hairy-Furry Borders: A Keratinous History of Knowledge, Materiality, and Beings, c. 1650-1800**
Sarah-Maria Schober
(SNF Starting Grant: “Matter of Distinction: Early Modern Hair, Race, Trade and Multispecies History, 1650-1820”, University of Lucerne)

Hair both connects and disconnects. In the early modern period, hair was considered a “vibrant matter” and formed part of the central idea that bodies were porous. Growing plant-like from inside the body and through the skin, hair connected bodies to their environment rather than disconnecting them. This organic idea was interrupted in the so-called “age of the wig” which set in motion a large-scale trade in hair severed from human heads as commodity, alongside the trade in animal hair. At the same time, hairy matter also became a focal point in discussions about the increasingly important boundaries between different forms of life: was hair what linked humans and animals, or did their diverse forms differentiate them? Were some humans (and their hair) less or more animal-like, more “natural” or “cultural”, and how were these hairy boundaries exploited at the beginning of the colonial era?

- 11.00-11.30 Coffee
- 11.30-12.30 **Handling Animal Skins**
Alwin Probst
 (Head of Taxidermy, Natural History Museum Basel) in conversation with Christine Kleiter
 (Department of Art History, University of Basel) und Janina Wellmann (NOMIS Fellow)
- 12.30-14.00 Lunch
- 14.00-15.00 **Living Interfaces at the Planetary Scale: Borders in Theoretical Models**
Antonin Affholder
 (NOMIS Fellow, Centre for Origin and Prevalence of Life, ETH Zürich)
- Living organisms are a critical component of many if not all of Earth's geochemical cycles. At present, microbes pervasively mediate how the biosphere interacts with geochemical cycles via its extensive metabolic diversity and tolerance of various environmental conditions. The geochemical relevance of microbes appears even more dramatic when considering the evolution of Earth through geological times.
- As researchers investigate the role of microbes on elemental cycling at large time and spatial scales, they build numerical and theoretical models which include theoretical representation of microbial life alongside other geochemical processes. Existing approaches typically consider microbial activity as analogous to chemical reactions occurring 'in the bulk', for instance the bulk ocean. Yet, ecosystems live at interfaces which are essentially out of equilibrium with their surroundings. As an example, the uppermost layer of the ocean concentrates most of the oceanic primary productivity, and exchanges with the atmosphere through a thin film which itself is composed of organic molecules produced by living organisms. To assess how ecosystem function, shaped by environmental conditions and biological interactions, contributes to global cycling of matter, geochemical modeling approaches must adopt interfaces-centered frameworks (see for instance, Loreau et al., 2003).
- Here, I review the conceptualization of interfaces in mine and other's theoretical work focused on geochemical cycling powered by microbes and motivated in part by astrobiological questions. Taking a reflexive stance, I revisit recent work on the habitability of the icy moon of Saturn Enceladus and on microbial activity in arctic soil. I focus on why the scientific questions that motivated this work justified adding complexity in models in the form on interfaces.
- 15.00-15.30 Coffee
- 15.30-16.30 **Building life layer by layer: are Bio3D-Printed living tissues the future or still a utopia?**
Valentina Basoli
 (Department of Biomedical Engineering, Universität Basel)
- Tissue engineering aims to restore or replace damaged tissues and organs by combining living cells, biomaterials, and advanced fabrication technologies. In this approach, cells obtained from patients can be expanded and integrated into biocompatible materials that act as scaffolds to support tissue formation. Bio3D printing enables the precise, layer-by-layer organization of cells and biomaterials to create structures that mimic the architecture of native tissues. Over the past three decades, this field has progressed from simple constructs to increasingly complex, functional tissue models. The ultimate goal is to develop patient-specific, implantable tissues and organs, bringing regenerative therapies closer to clinical application and transforming the future of personalized medicine.
- 17.00-18.30 **Visit to Schaulager, Münchenstein**
 (not open to the public; for speakers only)

Saturday, May 23

- 09.30-10.00 Coffee
- 10.00-11.00 **SkincAIr: AI-driven detection of skin-related neglected tropical diseases**
Gil Sharvit
 (iHome Lab, Lucerne University of Applied Sciences and Arts)
- SkincAIr is developing an AI-driven mobile app to support early detection and monitoring of skin neglected tropical diseases in Sub-Saharan Africa, aiming to improve front-line health workers' diagnostic accuracy, reduce transmission through earlier diagnosis, and strengthen real-time epidemiological surveillance. The project will also create the largest public skin NTD dataset worldwide—the first of its kind in SSA—and deploy culturally tailored, privacy-preserving, open-source, and interoperable solutions across Kenya, Senegal, Ethiopia, Nigeria, and the Democratic Republic of Congo.

11.00-12.00

Painting the Blush

Larissa Dätwyler

(Department of Art History, University of Basel)

This input provides some short insights and perspectives on blushing skins in European paintings from 18th to 19th century. A main focus lies in the historical, socially and colonially informed and racialized question on the human ability to blush.

12.00-13.00

Roundtable, Conclusion and Future Plans with Participants