



Faculty of Science Day

July 1, 2026

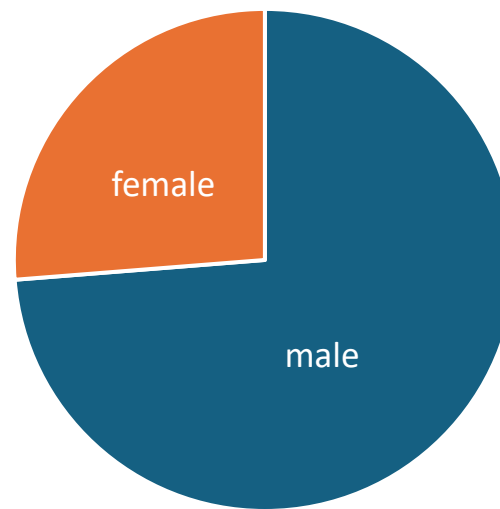
Program

- Report by the Dean
- Introduction of New Faculty Members
- Dedicated Educator Award
- PI Innovation Award
- Poster Session and Catering

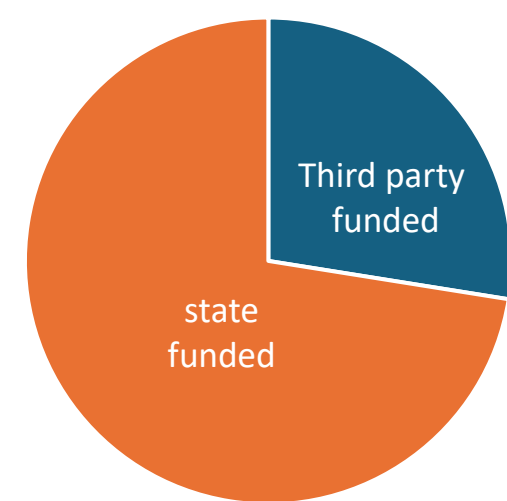
Faculty in Numbers

Staff (April 2026)

Professors (W1, W2, W3)
n=179



Total staff
n=3.118



percentage of women
among all staff
40,80 %

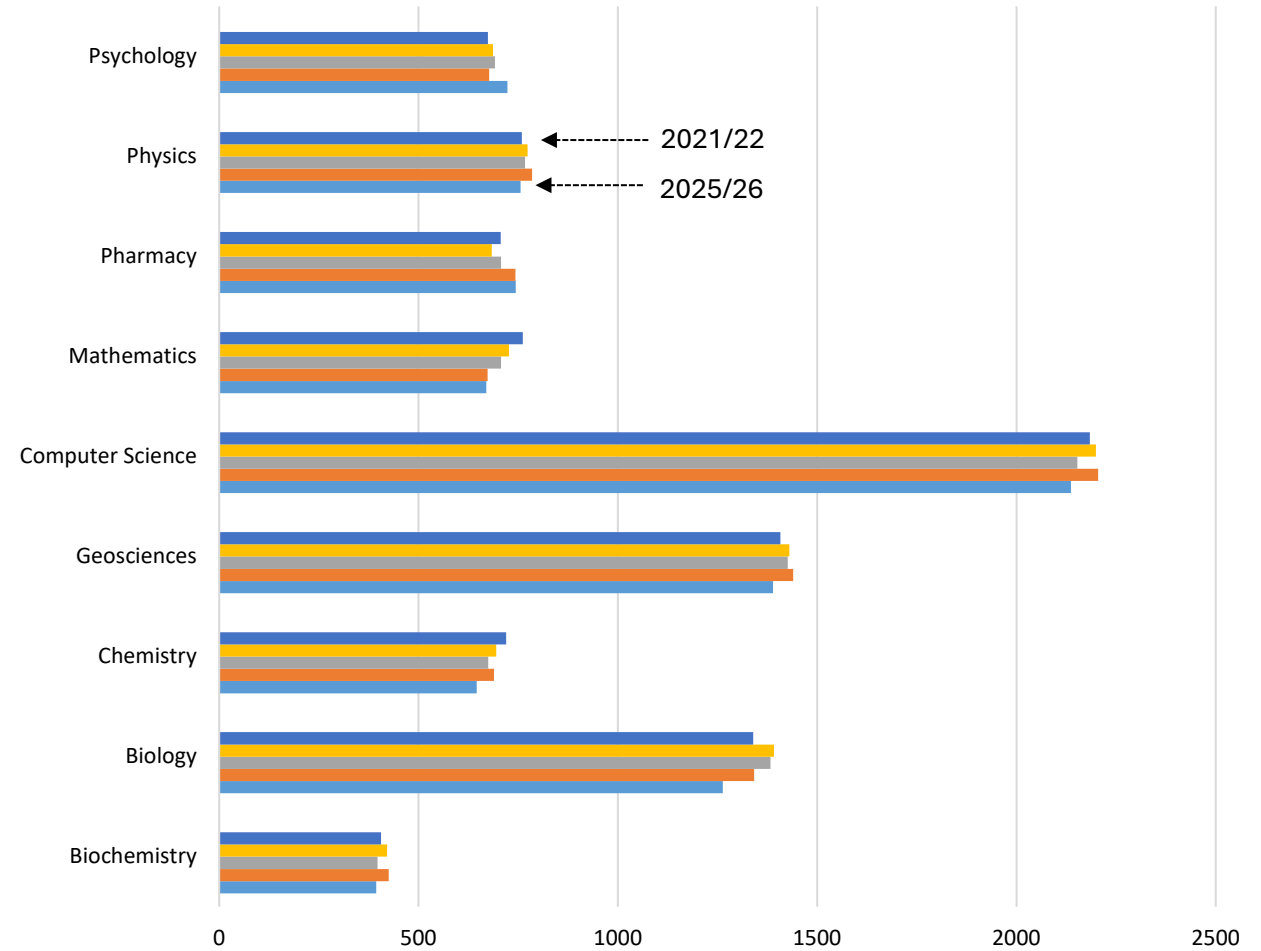
Faculty in Numbers

Students

winter term 2021/22 – 2025/26 (case numbers)

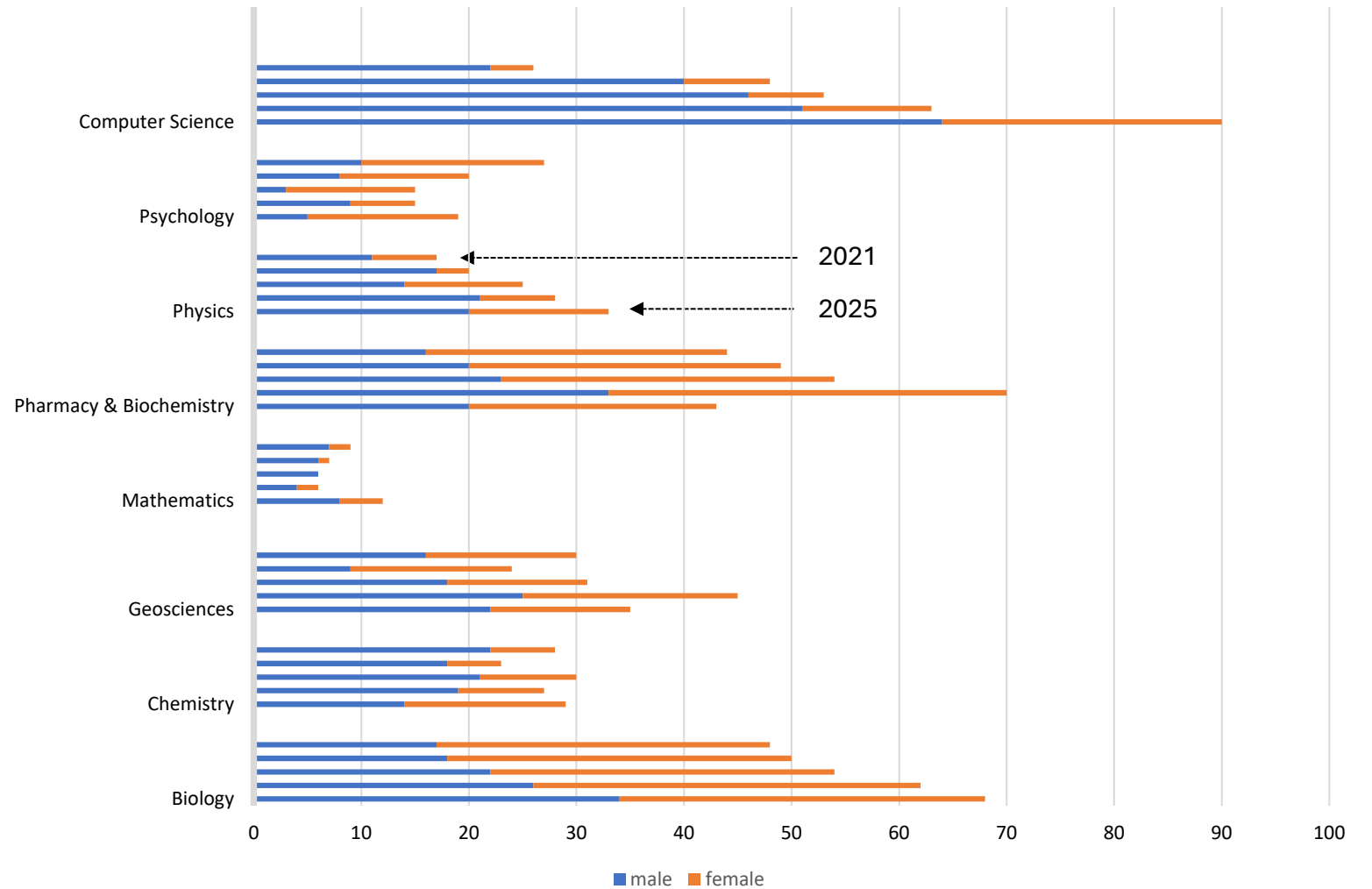
total number
of students
2025/26:
9,984

international
students:
19%



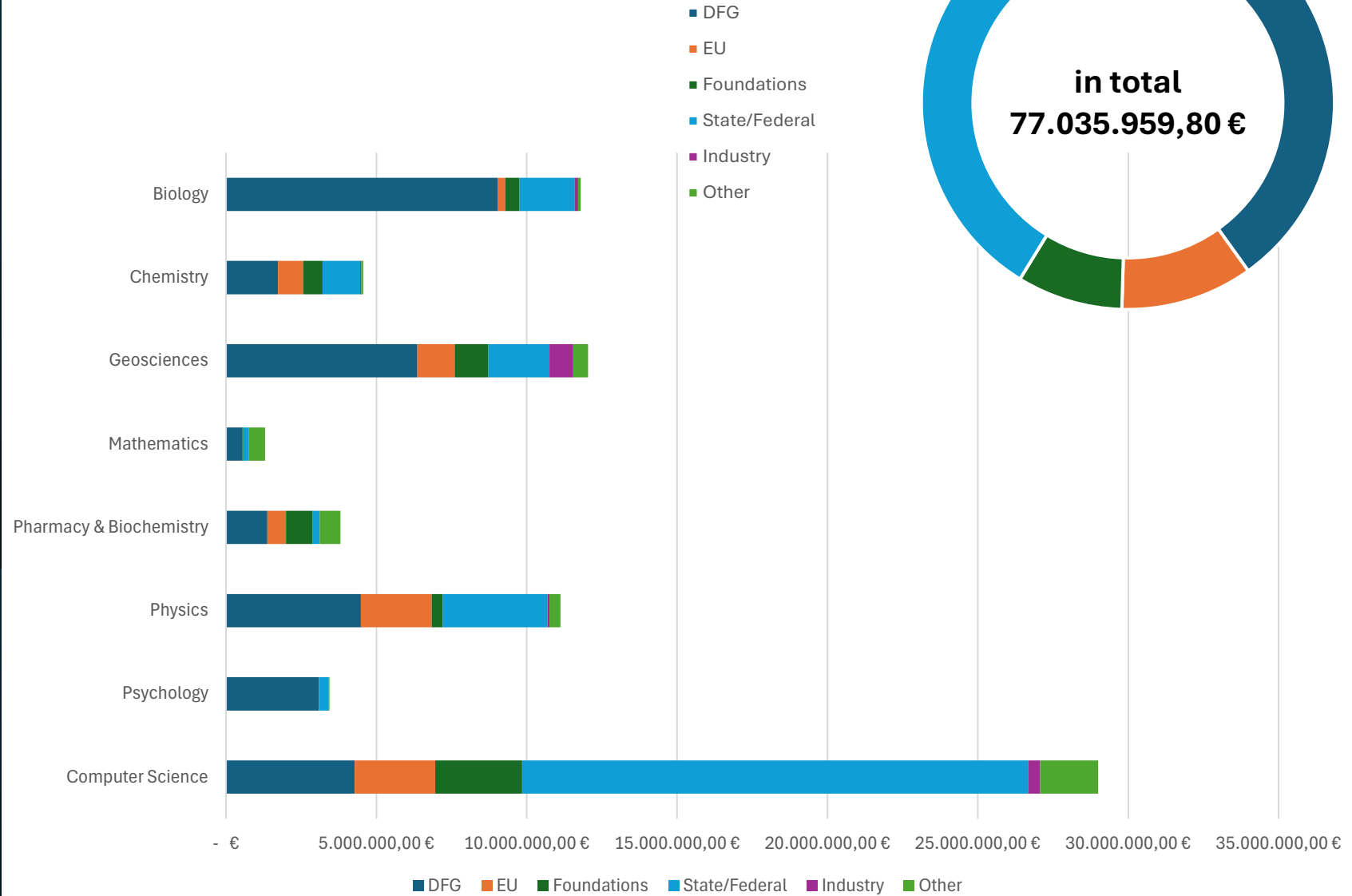
Faculty in Numbers

Completed doctorates (2021 – 2025)



Faculty in Numbers

Third party funding 2025



Highlights of the academic year



Honors and Awards

ERC Synergy Grant

Prof. Dr. **Thorsten Stafforst** (IFIB),
Prof. Dr. Mathias Heikenwälder (iFIT),
Prof. Erez Levanon (Bar-Ilan-University, Israel)
„HepaModulatoR“

ERC Consolidator Grant

Jun.-Prof. Dr. **Ana Rita Brochado**
„BacImmune-Decode“

Prof. Dr.-Ing. **Andreas Geiger**
„CASIDO“

ERC Starting Grant

Dr. **Clémence Marchal** (ZMBP)
„CooPAIRation“

Highlights of the academic year

Honors and Awards



**Südwestmetall Employers'
Association Incentive Award**

Dr. Amirhossein Ershadi
(Geosciences)



Federal Cross of Merit
(Bundesverdienstkreuz)

Prof. Dr. Gerhard Huisken
(Mathematics)



**Fellow of the International
Society for General Relativity
and Gravitation**

Prof. Dr. Kostas Kokkotas
(Physics)



Emmy-Noether-Group

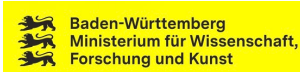
Dr. Juan Carlos de la Concepcion
(ZMBP, Biology)



**Reutlingen Chamber of
Commerce and Industry
Technology Transfer Award**

Prof. Dr. Thorsten Stafforst
(Biochemistry)

Highlights of the academic year



State Research Award 2026
(Landesforschungspreis)

Prof. Dr. Lars Angenent



**University Teaching Award
2026**

Dr. Frank Papenmeier, Dr. Tjark Müller,
Dr. Tobias Rebholz, Gerrit Anders



**Ars legendi Faculty Award
2026**

Prof. Dr. Walther Paravicini
„Gamification“



**Young Researchers' Award for
Science Communication 2026**

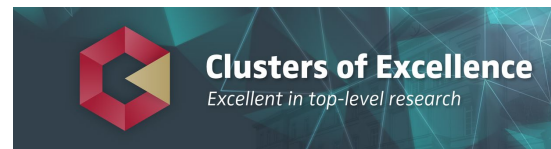
Dr. Rachel L. Gunn (EvE)

- **Event series
„MINT meets Industry“**
 - regional companies introduce themselves
 - provide students with information about their respective business areas and career opportunities
- **New Vice Dean**

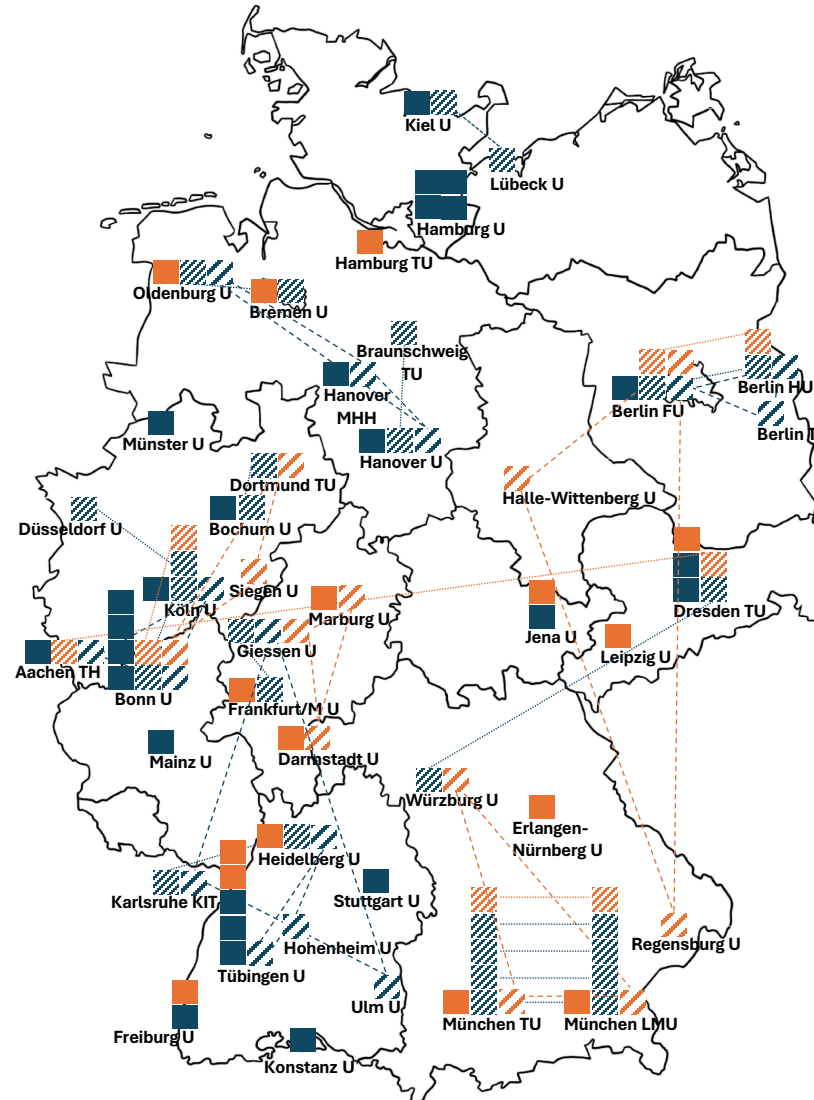
Prof. Dr.-Ing. **Hendrik P. A. Lensch**
to succeed Prof. Dr. **József Fortágh**



Topics that keep us busy...



2026 - 2032



New clusters

- EXC 1 university
- ▨ EXC 2 universities
- ▨ EXC 3 universities

Renewed clusters

- EXC 1 university
- ▨ EXC 2 universities
- ▨ EXC 3 universities

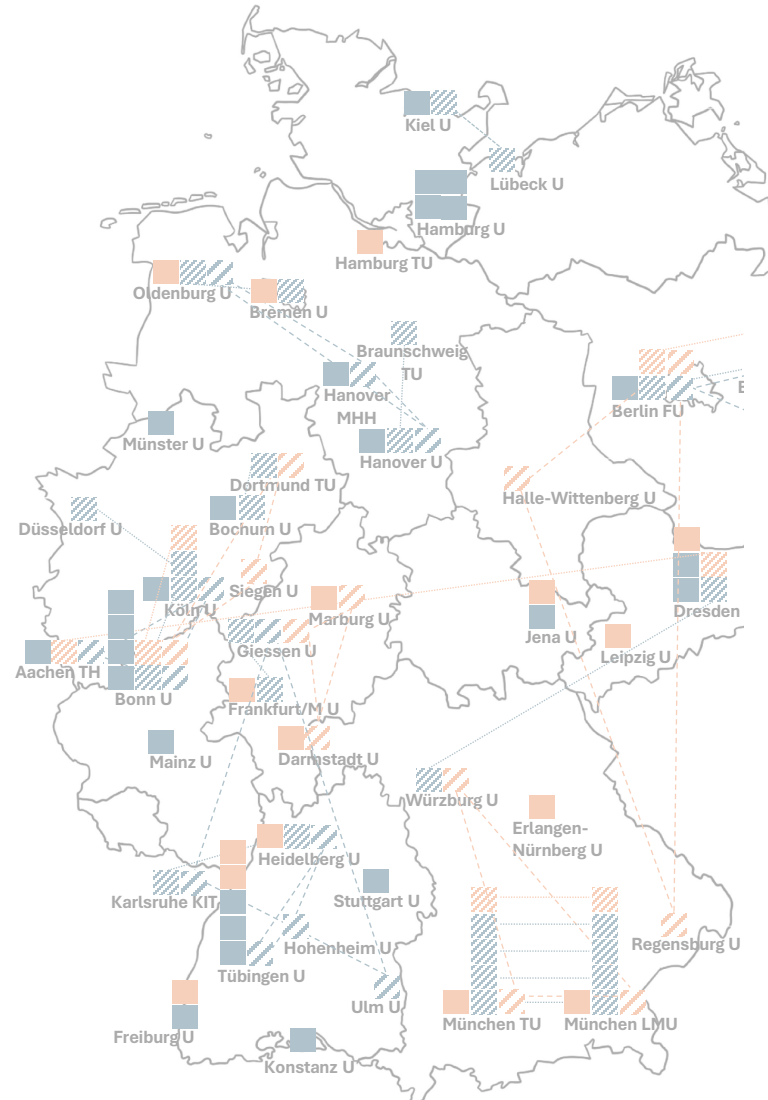
EXC 2064: Machine Learning
New Perspectives for Sciences



EXC 2124: CMFI
Controlling Microbes to Fight Infections



EXC 2180: iFIT
Image-guided and Functionally Instructed Tumor Therapies



EXC 3099: GreenRobust
Understanding Robustness of Plant Systems from Molecules to Ecosystems



EXC 3101: HUMAN ORIGINS
Cluster of Excellence for Integrative Human Origins Studies



EXC 3121: TERRA
Terrestrial Geo-Biosphere Interactions in a Changing World



Current overview of all 12 EXC-Professorships in our clusters

8 on track

1 adjustment

2 deferred

1 eliminated

Current overview of all 12 EXC-Professorships in our clusters

8 on track

1 adjustment

2 deferred

1 eliminated

**Project
Start
01/2026**

**First internal
projects start**

**Central office is
fully staffed**

**New hires
(IJGL, Postdocs, PhD, technicians)**

NEW CLUSTERS

Today

Kick-Off Meetings

**first professorship
interviews**

**Networking
with
partners**

**Fundings for Internal Projects
as well as Young Investigator
Grants**

Meetings with DFG



Other topics that keep us busy...

Chilean Hermit Spider (*Loxosceles laeta*)



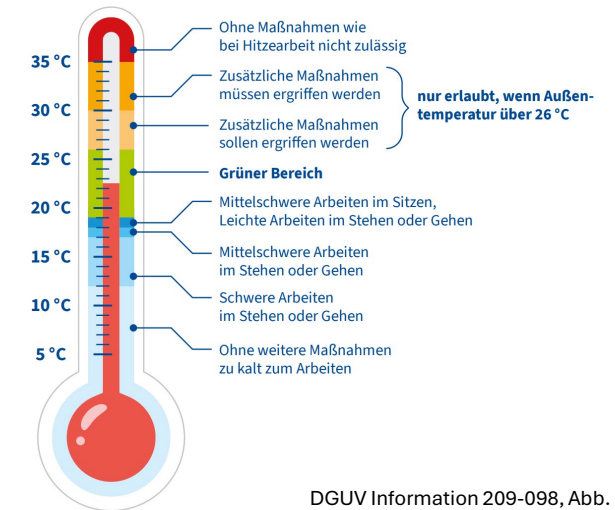
© Hubert Höfer/SMNK/dpa

Universität Tübingen findet chilenische Giftspinnen in Kellern

Die Uni Tübingen hat auf ihrem Campus unerwartete Gäste gefunden. Mehrere Exemplare der Chilenischen Einsiedlerspinne haben sich dort in Kellern eingenistet. Die Spinnenart scheint eine Vorliebe für Museen und Unis zu haben.

18.11.2025, 17.12 Uhr
Spiegel online

Heat Protection Plan

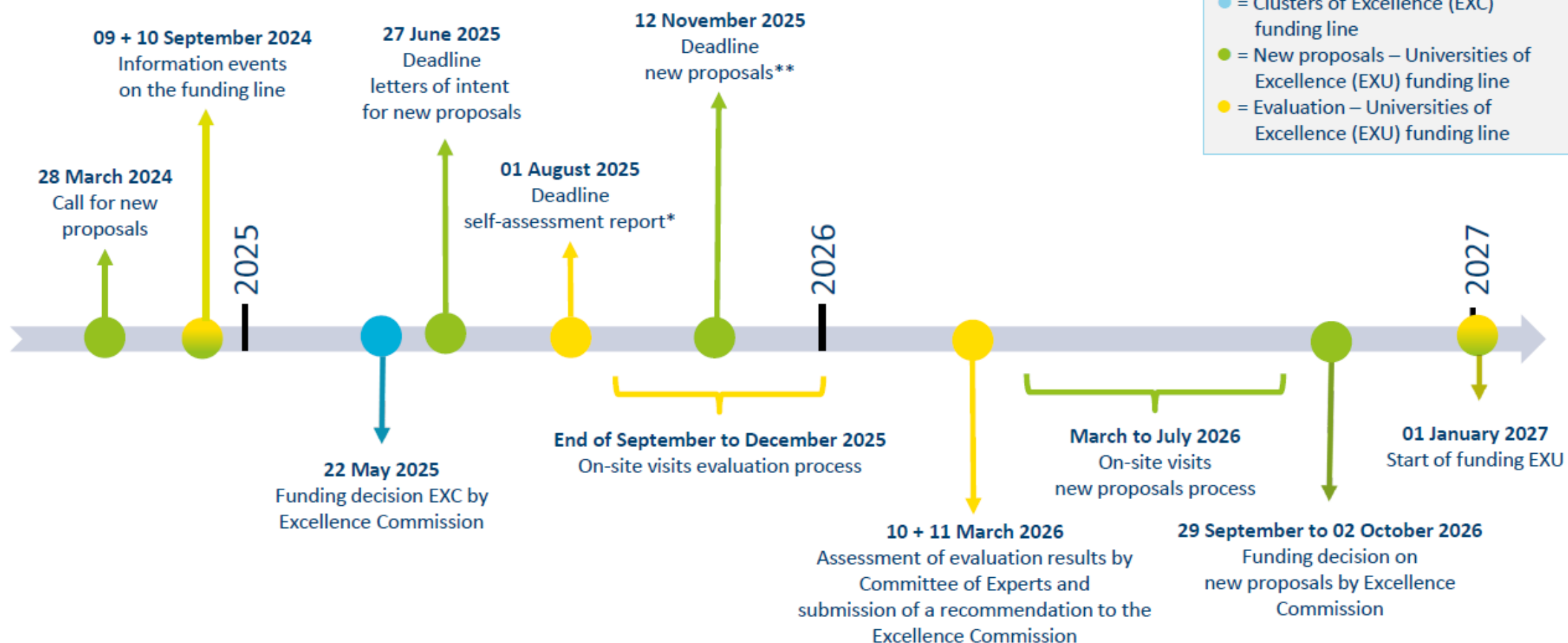


DGUV Information 209-098, Abb. 14



Clusters of Excellence (**EXC**) 2026-2032
Universities of Excellence (**EXU**) 2027-2033

Universities of Excellence funding line



Goals of the University

- Advance Excellence in Research and Education
- Nurture a Collaborative and Inclusive University Environment
- Sustain ChangeAbility
- Enhance Global Awareness and International Connectivity
- Expand Societal Engagement, Innovation, and Co-Creation

**Tübingen once
more selected
as a University of
Excellence**

on March 11, 2026



Newly appointed professors

(winter term 2025/26 –
summer term 2026)

Prof. Dr. Garvin Brod-Denz (Psychology)

Prof. Dr. Miriam Margherita Cortese-Krott (Pharmacy)

Prof. Dr. Sebastian Deindl (Biochemistry)

Jun.-Prof. Dr. Dr. Shahnaz Farhat (Mathematics)

Prof. Dr. Niels Henze (Computer Science)

Prof. Dr. Mario Krenn (Computer Science)

Jun.-Prof. Dr. Manfred Manßen (Chemistry)

Jun.-Prof. Dr. Mariia Nesterkina (Pharmacy)

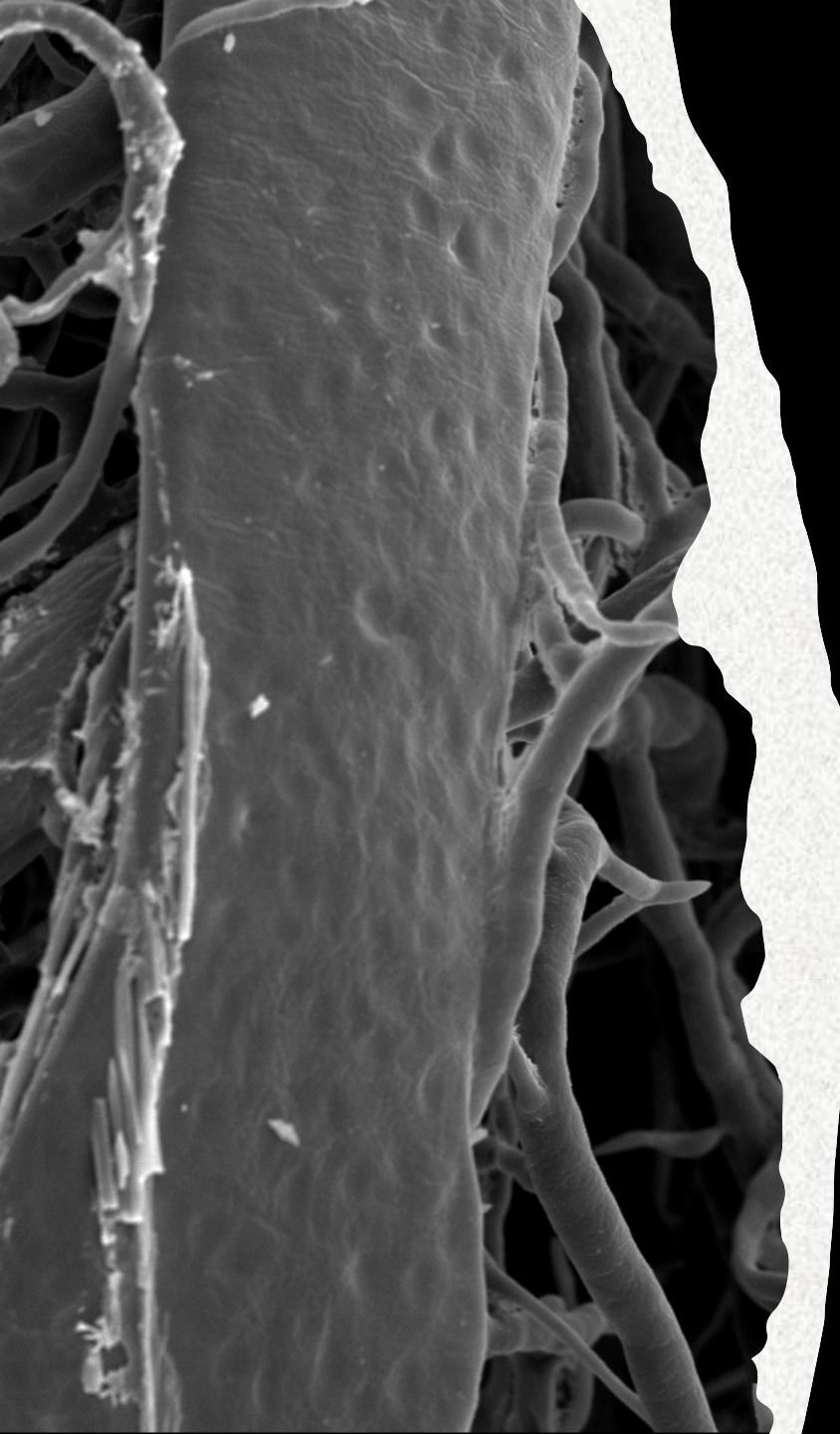
Introduction of newly appointed professors

(winter term 2025/26 –
summer term 2026)

Prof. Dr. rer.nat. Miriam Margherita Cortese-Krott
W3 Professorship in Pharmacology, Pharmacotherapy, and Clinical
Pharmacy

Prof. Dr. Niels Henze
W3 Professorship in Vision & Cognition

Prof. Dr. Mario Krenn
Cluster W3 Professorship “Machine Learning for Science II”

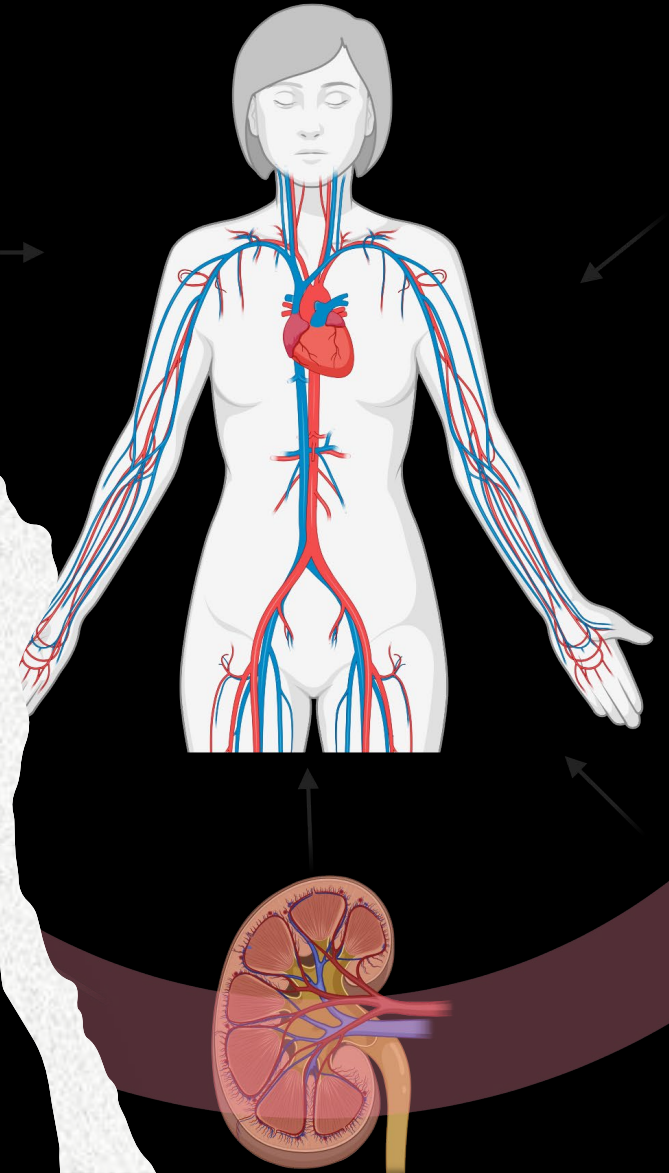


Endothelial Cell Function and Dysfunction: Orchestrating Organ Cross-Talk and Cardiovascular Disease

Univ. –Prof. Dr.rer.nat. Dr. Miriam
M. Cortese-Krott, PhD

Institut für Pharmazie

Pharmakologie,
Pharmakotherapie, klinische
Pharmazie



Endothelial cell heterogeneity

- Endo- as ἔνδον (meaning "inside" or "within")
- thēlē as θηλή metaphorically meaning a thin covering layer
- Wilhelm His, 1865

Morphology



AEC



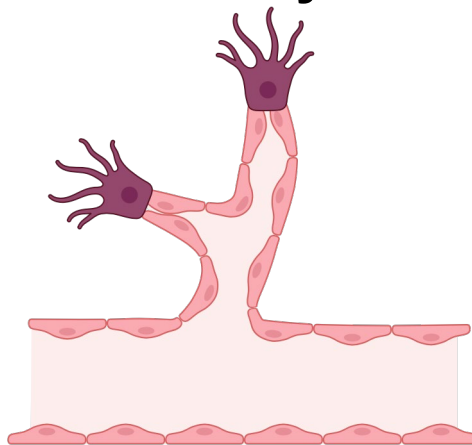
SEC



MVEC

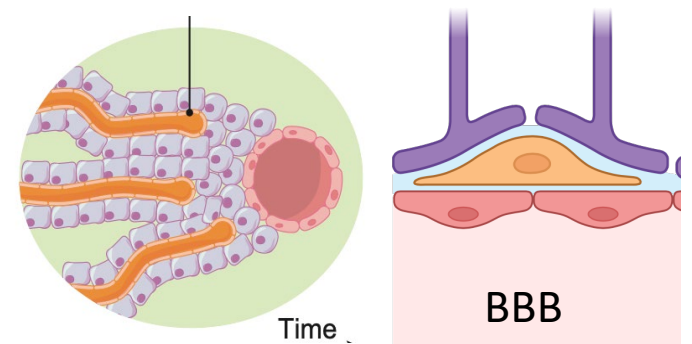
- Flow-dependent
- Tissue specific

Plasticity



- Angiogenesis

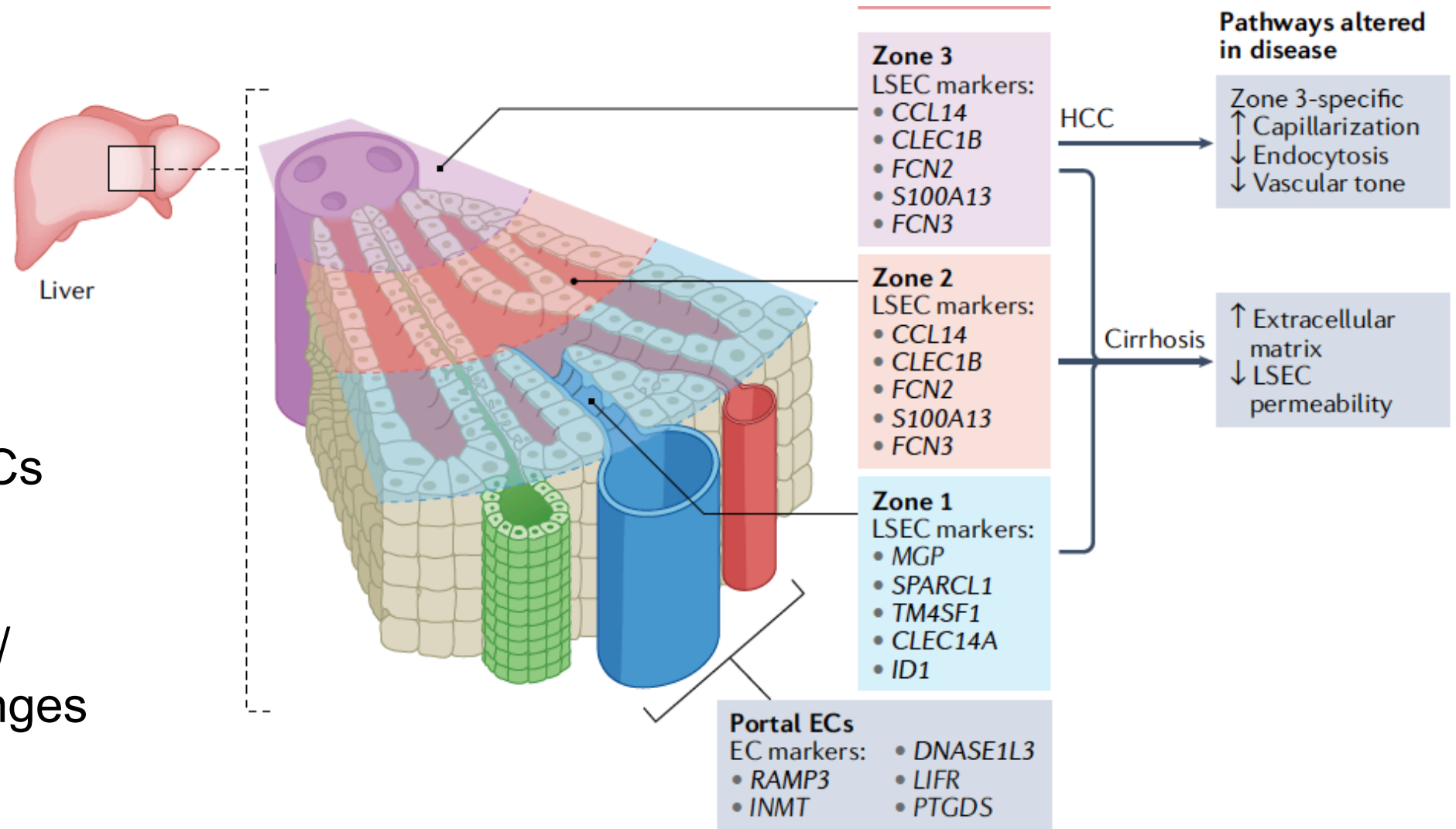
Function



- Filter/Barrier
- Exocrine tissue (paracrine, endocrine)

Endothelial cells heterogeneity in the “omics” era

- Subtypes of ECs in each tissue
- EC Zonation
- EC phenotypic/functional changes in disease

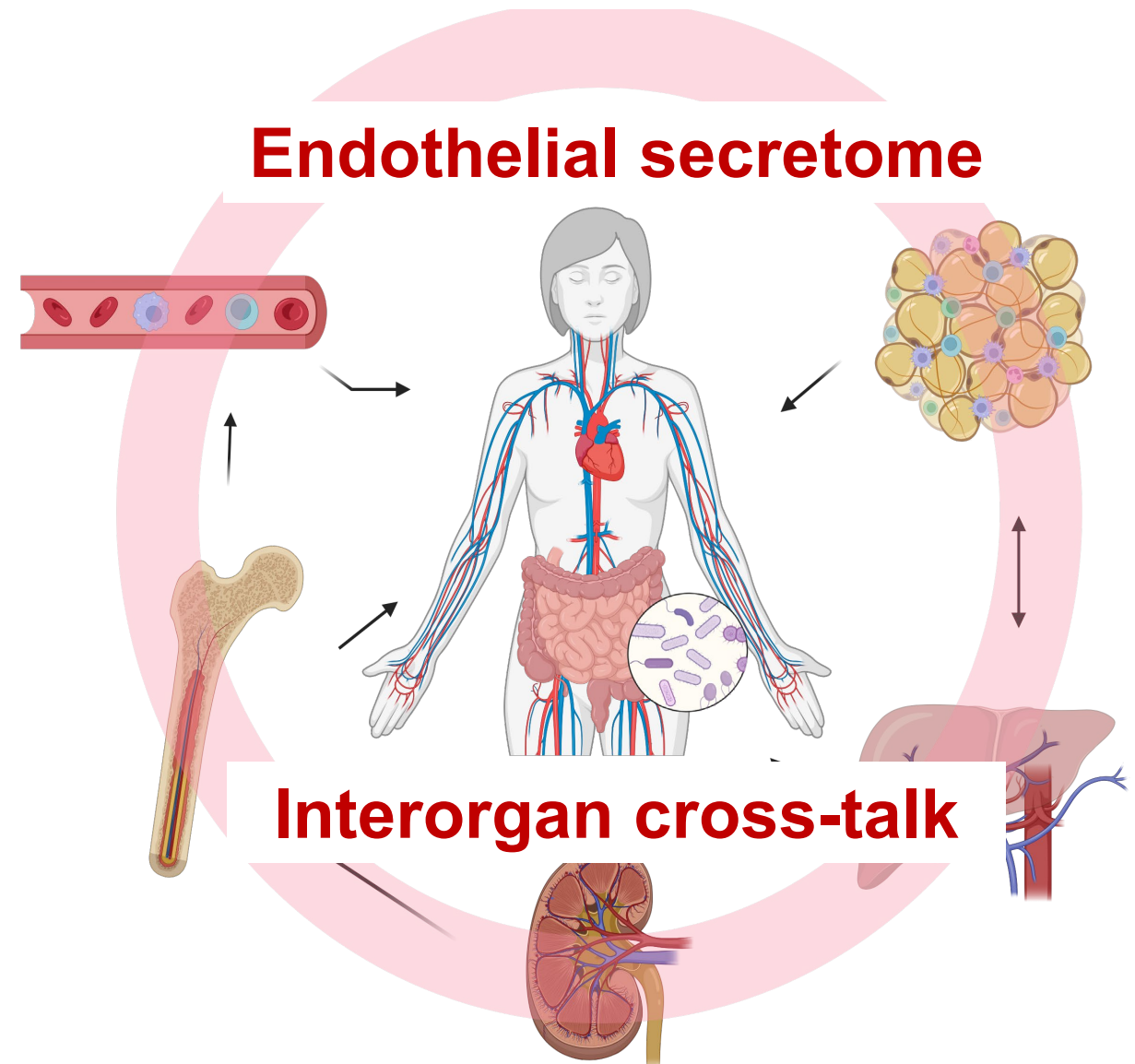


Working hypothesis

Alterations in the metabolism and function of endothelial cell subpopulations in specific organs

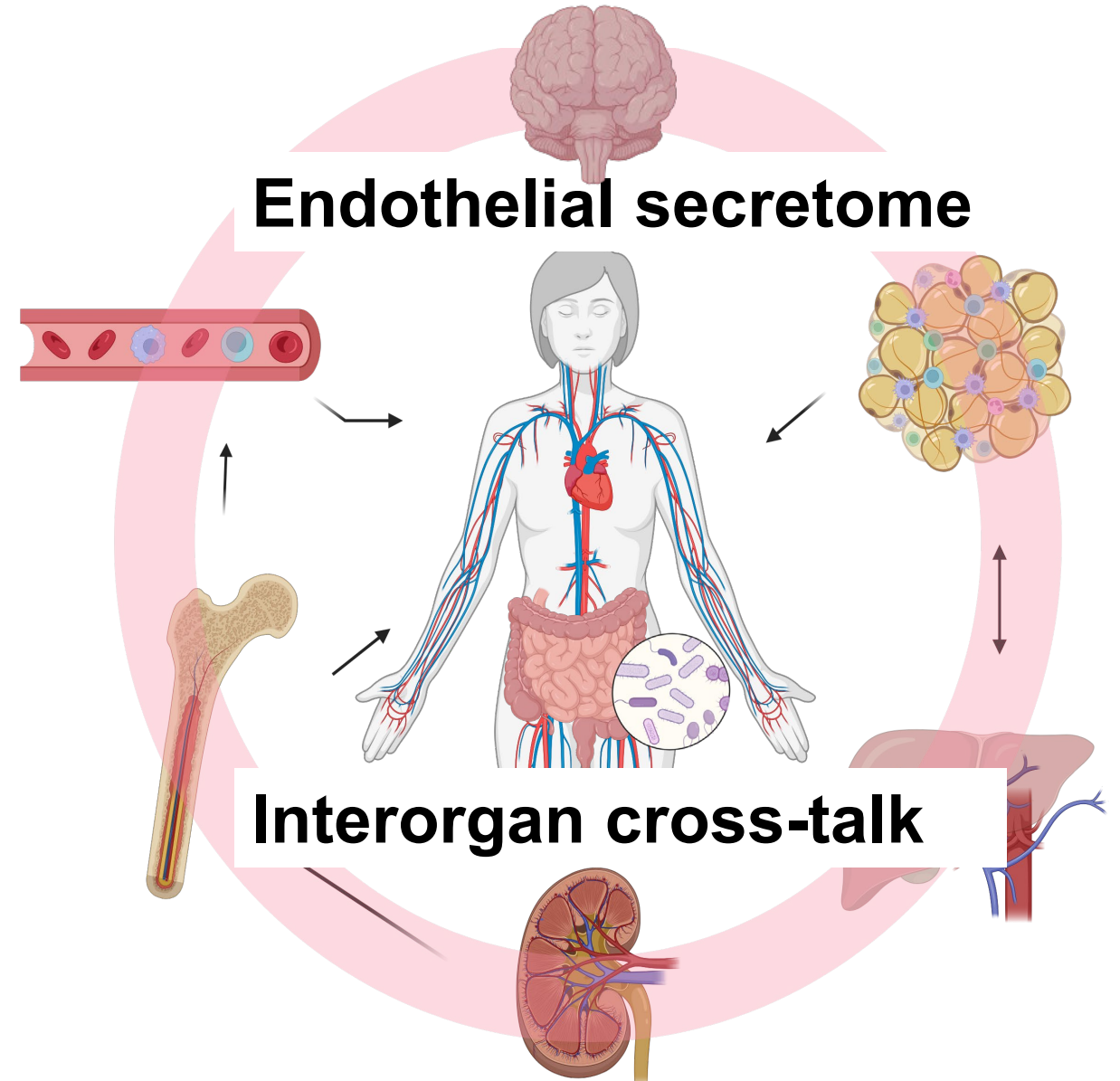
lead to **endocrine** and **paracrine** effects that contribute to **local organ dysfunction**

and induce **systemic effects** contributing to disease progression

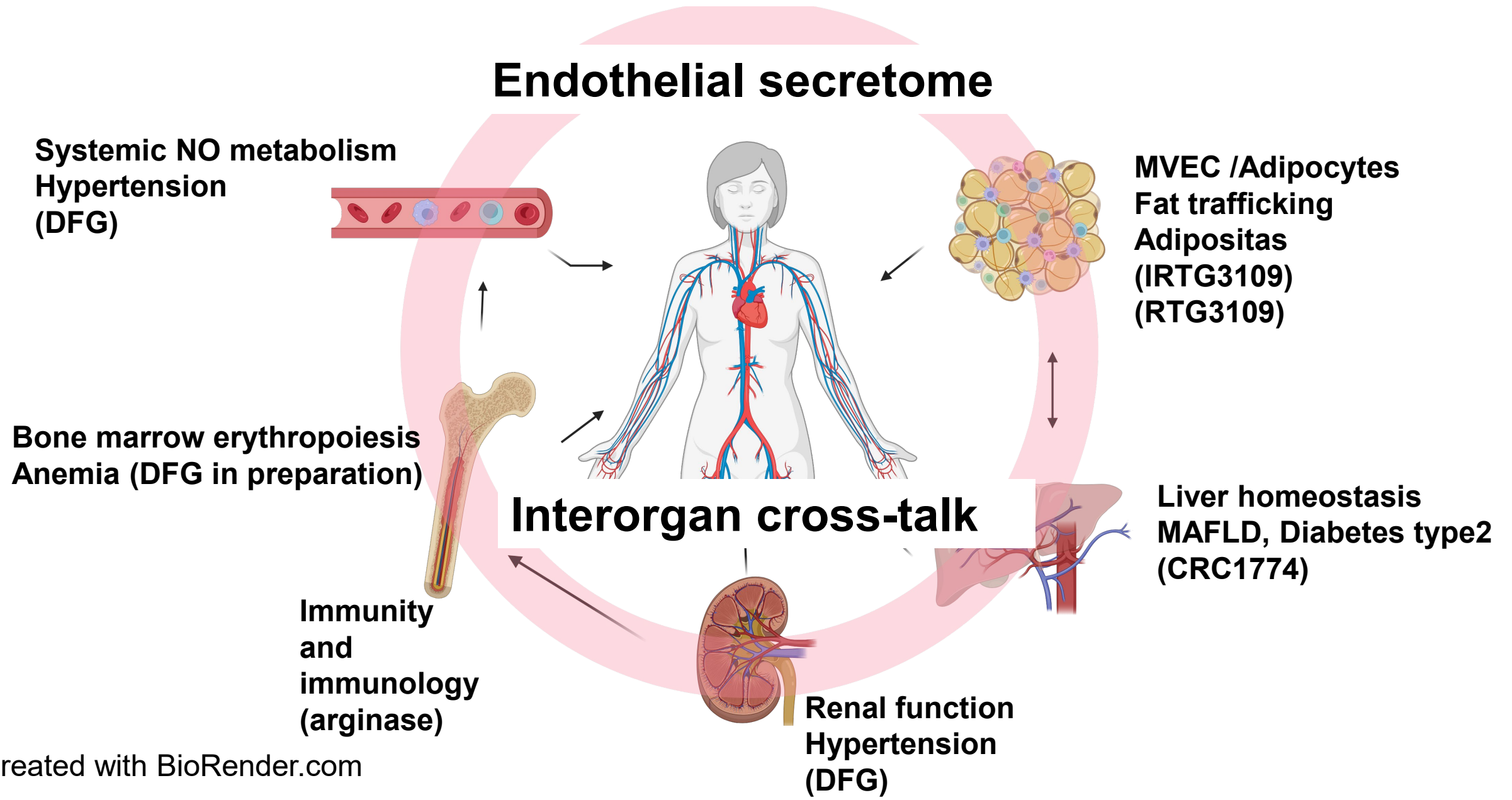


Integration in the MNF

- Cardiovascular research (Pharmacy, Biochemistry)
- Angiogenesis /Tumor research
- Immunology (Bone marrow niche)
- Microbiome (Human/microbes interactions)
- Brain (BBB, Microcirculation)



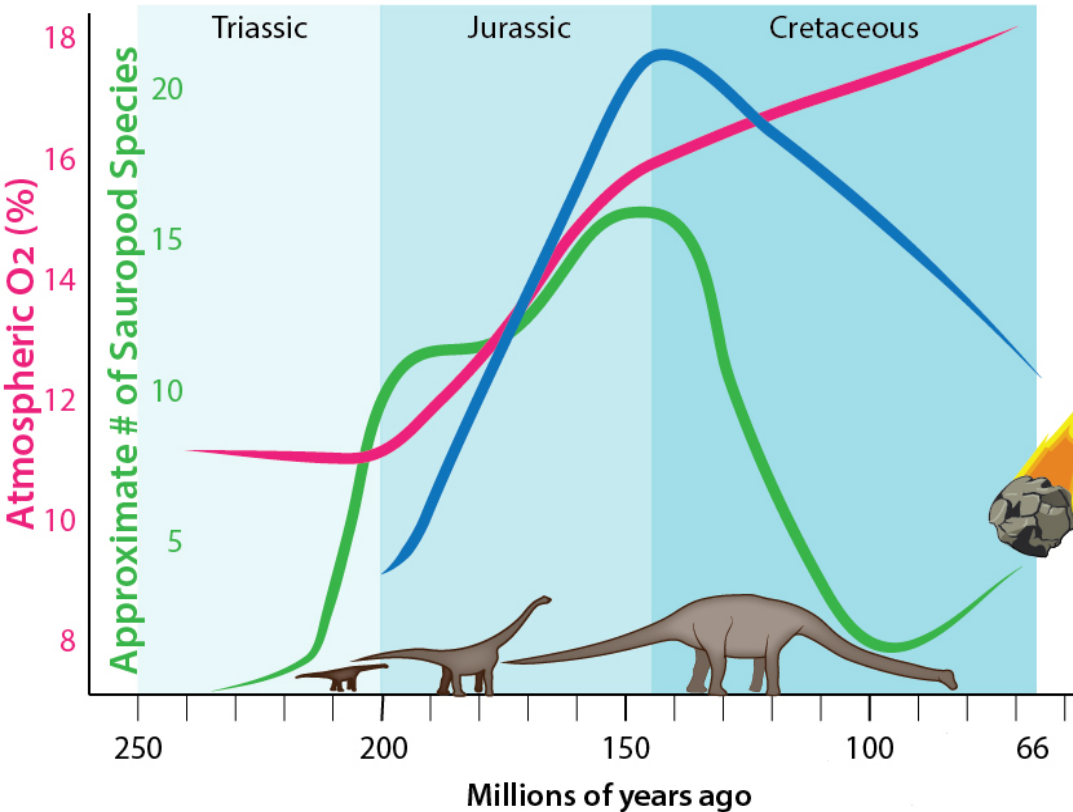
Overview current projects / funding



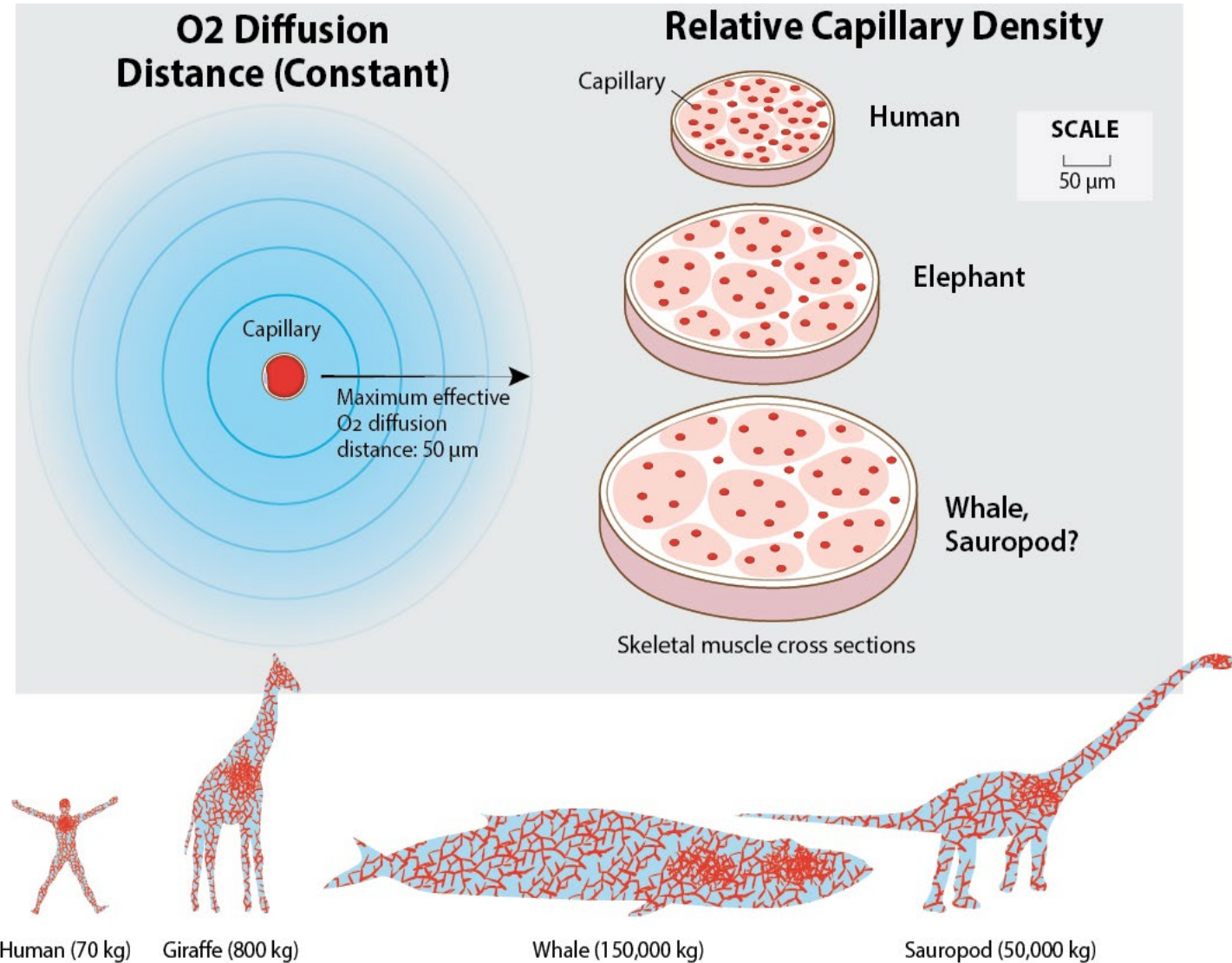
Cardiovascular Physiology of Sauropods

Miriam M. Cortese-Krott¹ and Brant E. Isakson^{2,3}

(*authors are in alphabetic order)

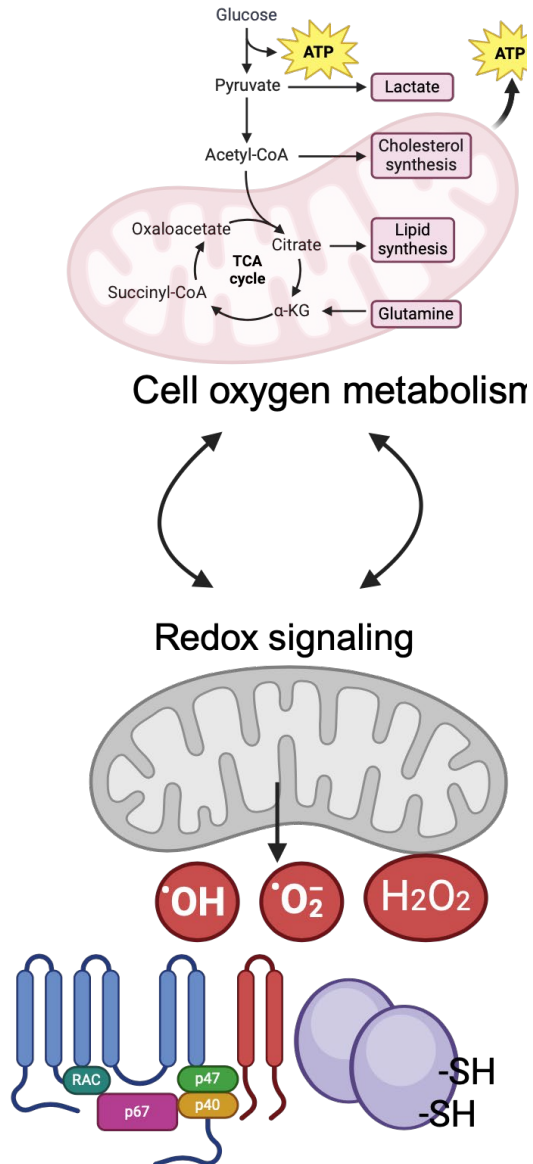


In advanced review for Annual Review
Physiology (IF20.1)



IRTG Initiative with University of Sendai (Japan)

Metabolic Redox Signaling in Cell Reprogramming and Organ Function



- Metabolic reprogramming in inflammation and malignome/Tumors
- Drugs targeting metabolic redox signaling
- Redox regulation of cyclic nucleotide signaling
- Systemic (redox) metabolomics and bioanalytics
- Microbiome and metabolic redox signaling

Acknowledgements



@CorteseKrottlab



@corteseKrottlab



Project number 263779315

Project number 521638178

RTG 2816

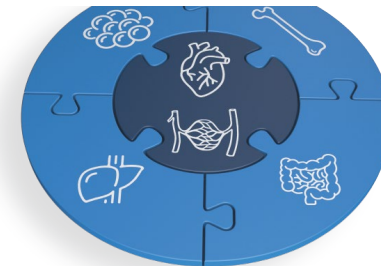
Non-canonical

G protein signaling pathways

IRTG3109

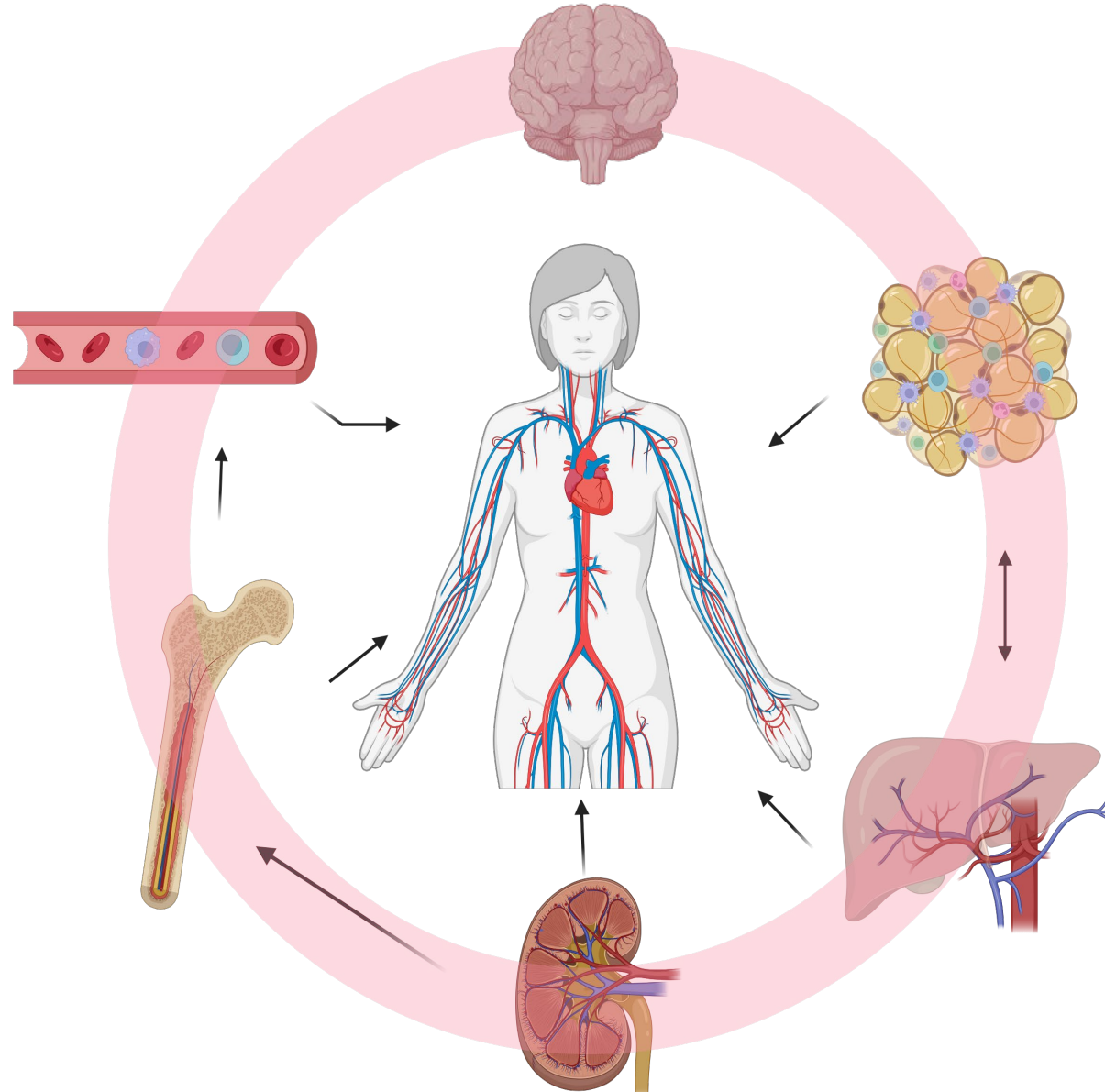


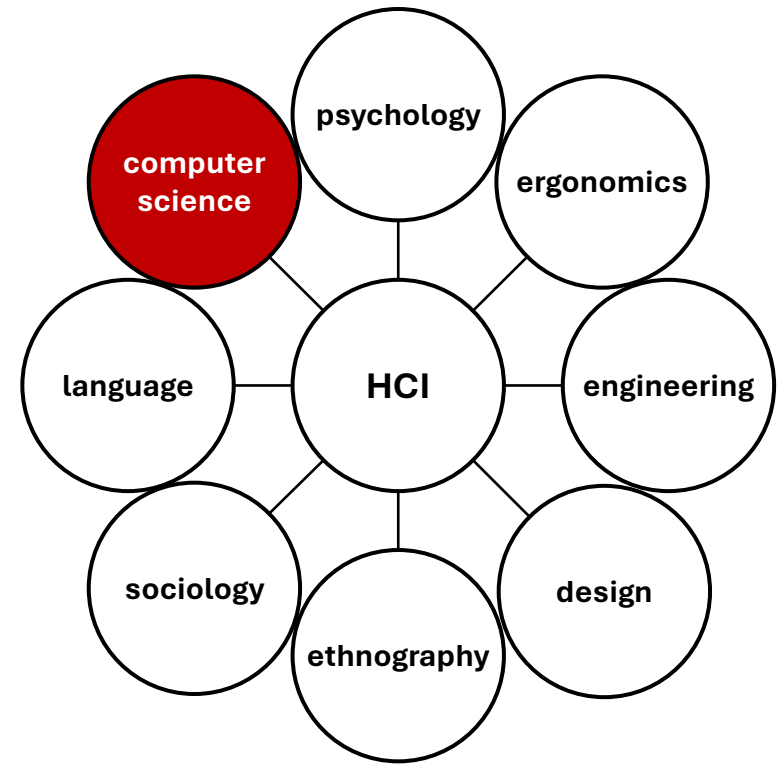
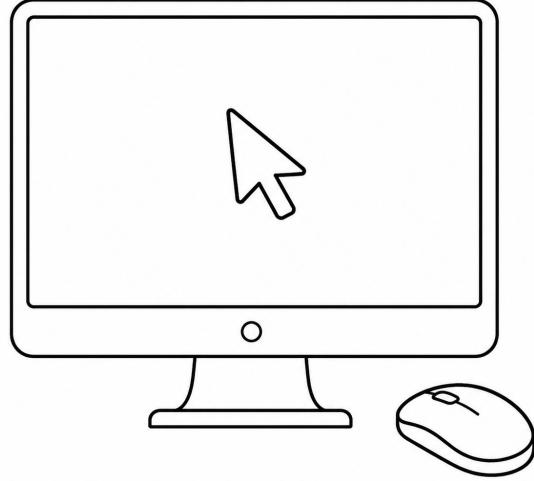
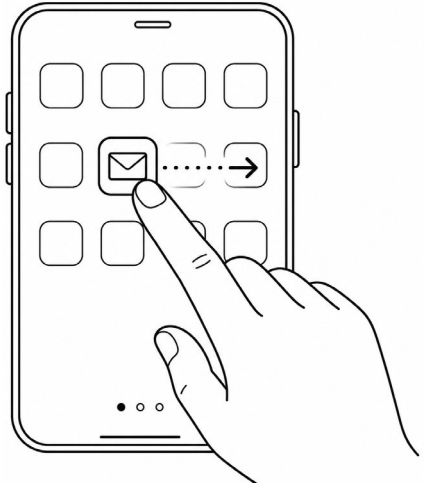
CAR  **IAB**



CRC 1774

Thank you

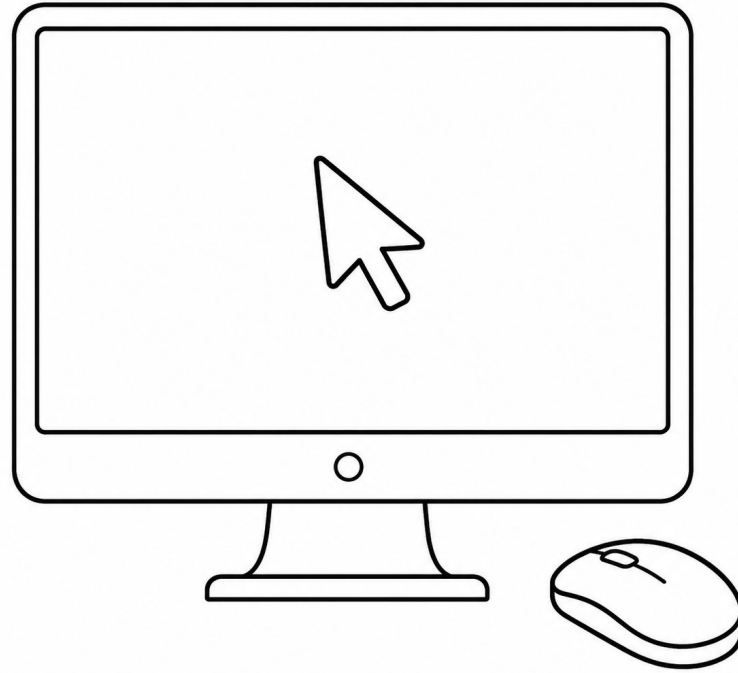
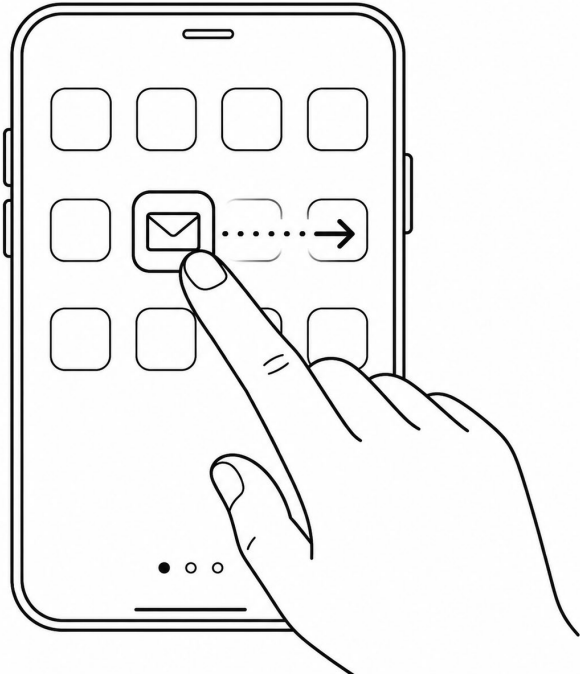




User Representations in Human-Computer Interaction

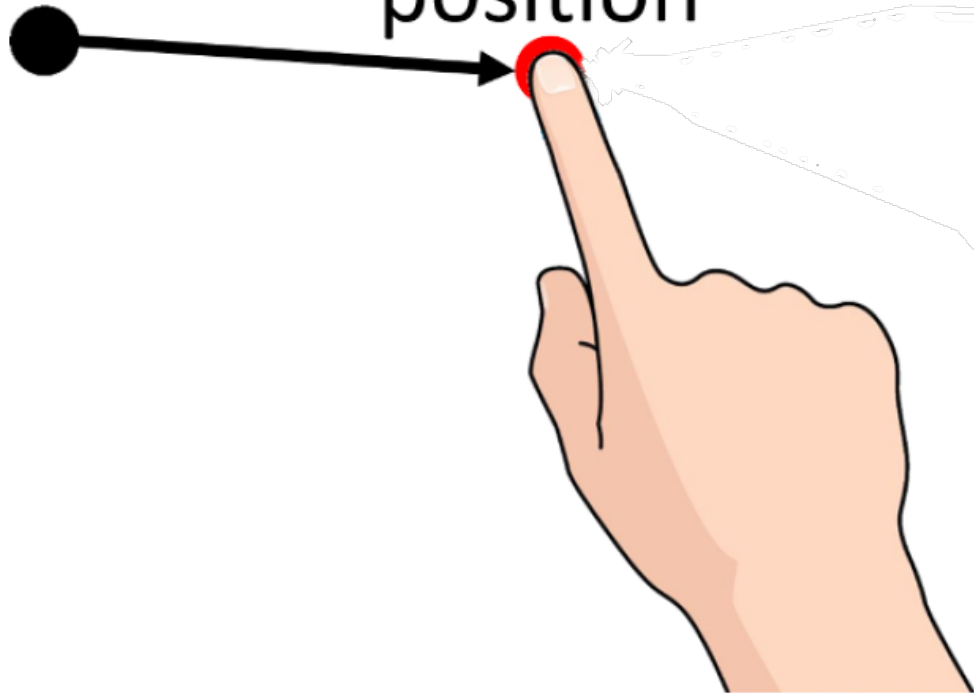
Niels Henze

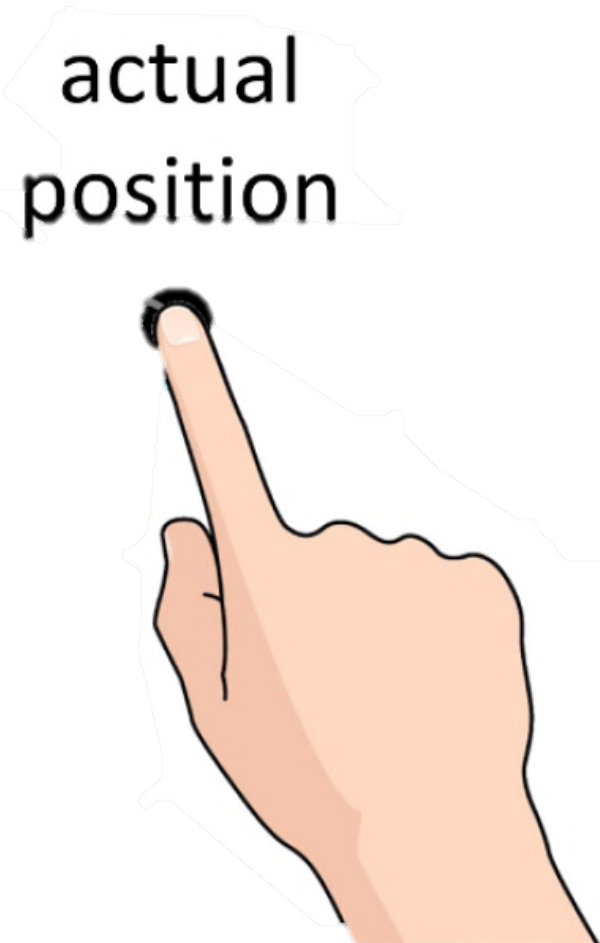
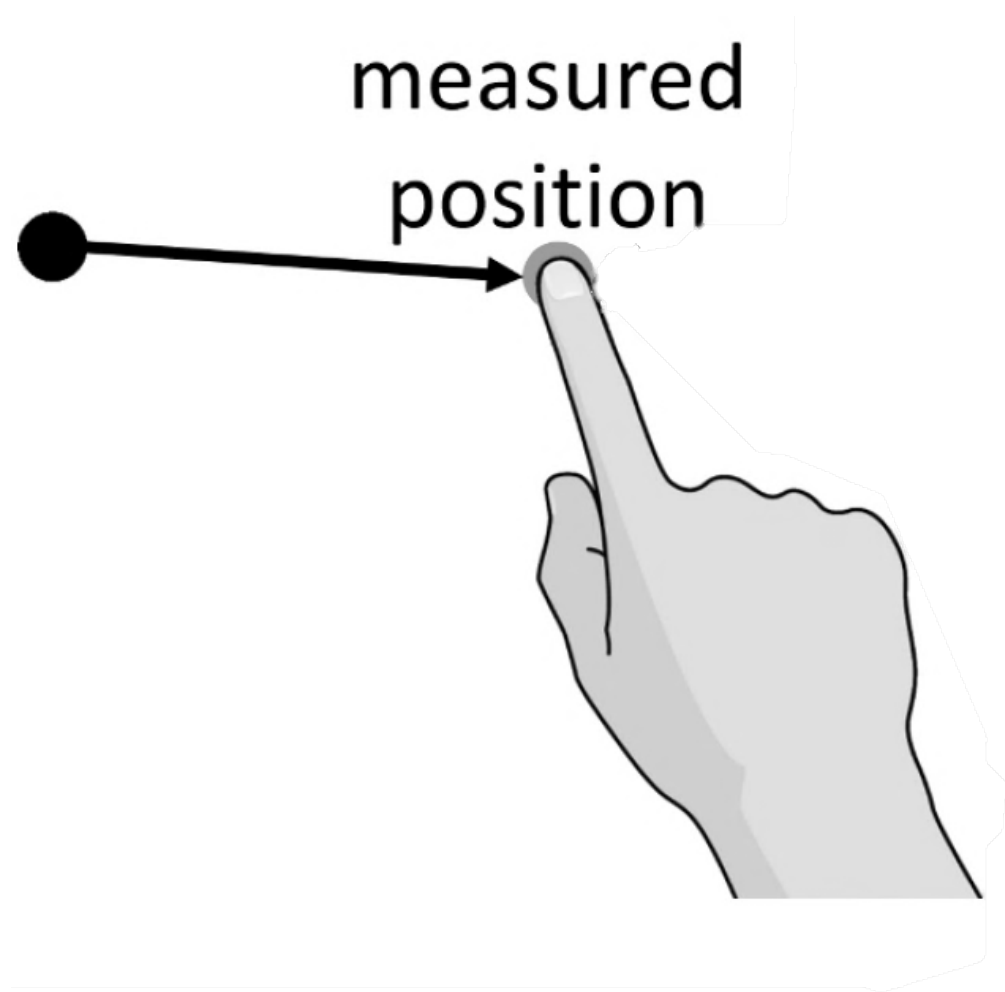
User Representations

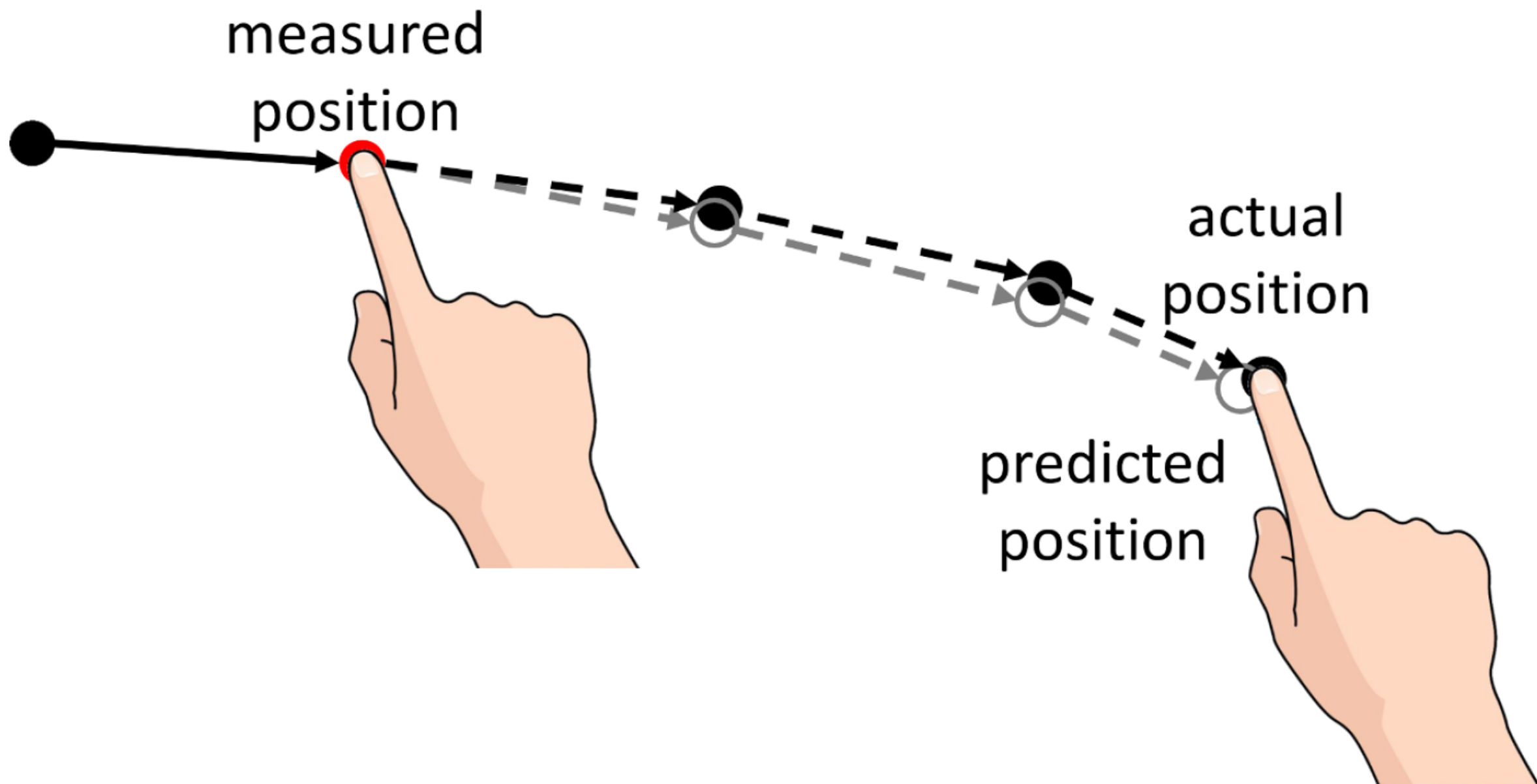


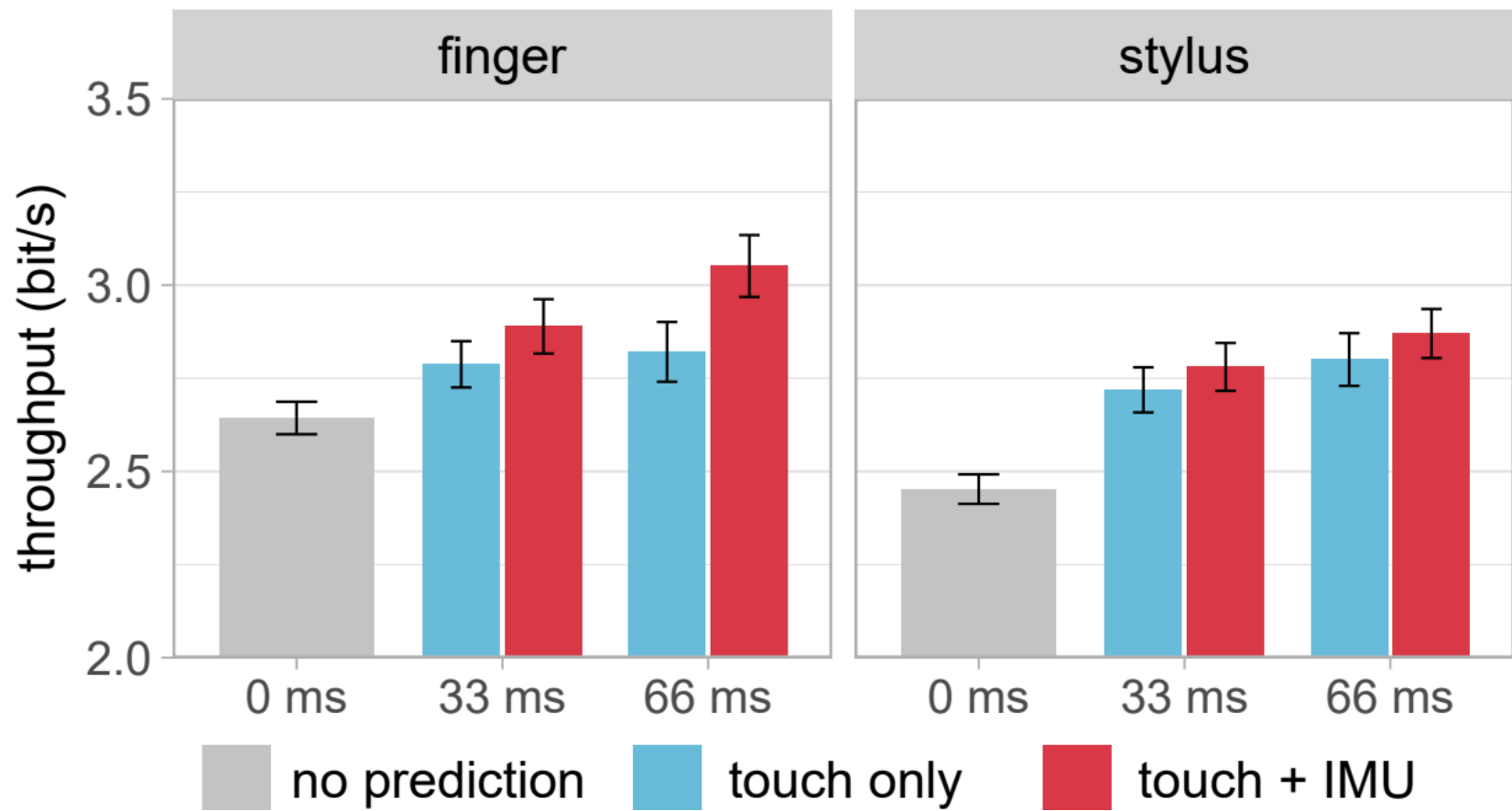
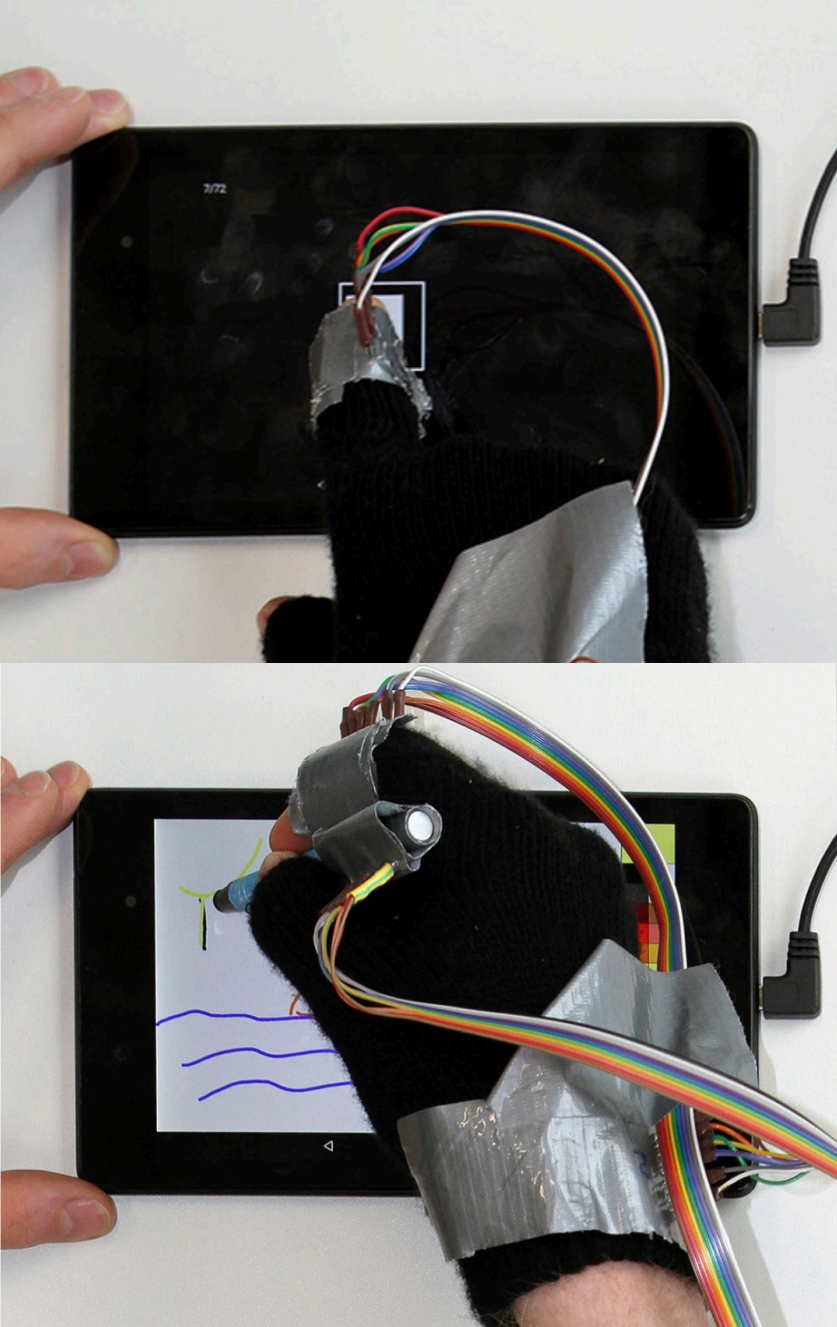


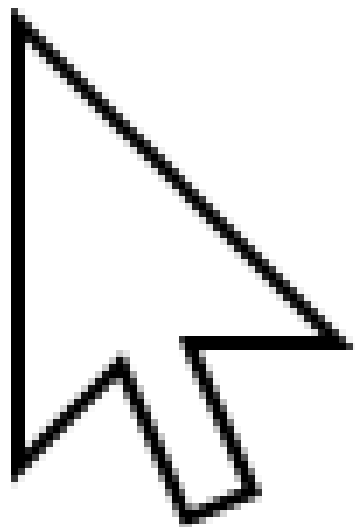
measured
position











overleaf.com/project/6a1eb10435750be380ea5a24

☆🔥🌐📄🗂️👤New Chrome available

File Edit Insert View Format Help

DFG MultiHeart

🔄🗂️🔗Share

File tree

content

images

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01_aux_header.tex

02_literature.bib

03_acronyms.tex

04_starting_point.tex

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07_diversity.tex

08_supplement.tex

09_modules.tex

applicant_work.bib

references.bib

tasks.png

TFs.png

template

ninecolors.sty

tabularray.sty

File outline

Starting Point

State of the art and preliminary work

Code Visual

content > 04_starting_point.tex > Starting Point

how this state is perceived and experienced through
design~\citep{Ali2023that,iodice2019interoceptive,ito2020comparison}. This distinction is important because many systems that ostensibly “display” the heartbeat also alter its interpretation by selecting specific modalities, spatial forms, or temporal mappings~\citep{aspell2013turning,heydrich2018cardio,ito2020comparison}. The state of the art is therefore best understood as an emerging design space in which cardiac feedback is used to shape relations between body, technology, and experience~\citep{chiossi2024physiochi,moge2022shared}.

46

47 \textbf{Design Dimensions of Heartbeat Representation and Manipulation}\

48

49 Previous work studied many forms of heartbeat feedback. Cardiac signals have been presented visually, auditorily, and haptically~\citep{Ali2023that}. Other work manipulated the temporal relation between feedback and physiology through false or stabilized heartbeat signals~\citep{joo2024effects}. Heartbeat feedback can also be placed on different body parts~\citep{Valente2024Modulating} or coupled to a virtual body~\citep{aspell2013turning}. In the following, we discuss four main \textbf{design dimensions}: \textbf{modality}, \textbf{temporal mapping}, \textbf{spatial anchoring}, and \textbf{body coupling}.

50

51 %Previous work studied various forms of heartbeat feedback, focusing on both cardiac signal representation and manipulation. Cardiac signals have been presented

Recompile 42

2 / 36

91%

Previous work studied many forms of heartbeat feedback. Cardiac signals have been presented visually, auditorily, and haptically [Ali et al., 2023]. Other work manipulated the temporal relation between feedback and physiology through false or stabilized heartbeat signals [Joo et al., 2024]. Heartbeat feedback can also be placed on different body parts [Valente et al., 2024] or coupled to a virtual body [Aspell et al., 2013]. In the following, we discuss four main design dimensions: modality, temporal mapping, spatial anchoring, and body coupling.

Modality: Visual, Auditory, Haptic, and Multimodal Feedback:

This is only (?) about work that compares modalities. Thought about first going through the three modalities first and closing with work that compares multiple modalities. Nope, it should also show when heartbeat feedback has been successfully used by each modality in VR and what the feedback had an effect on.

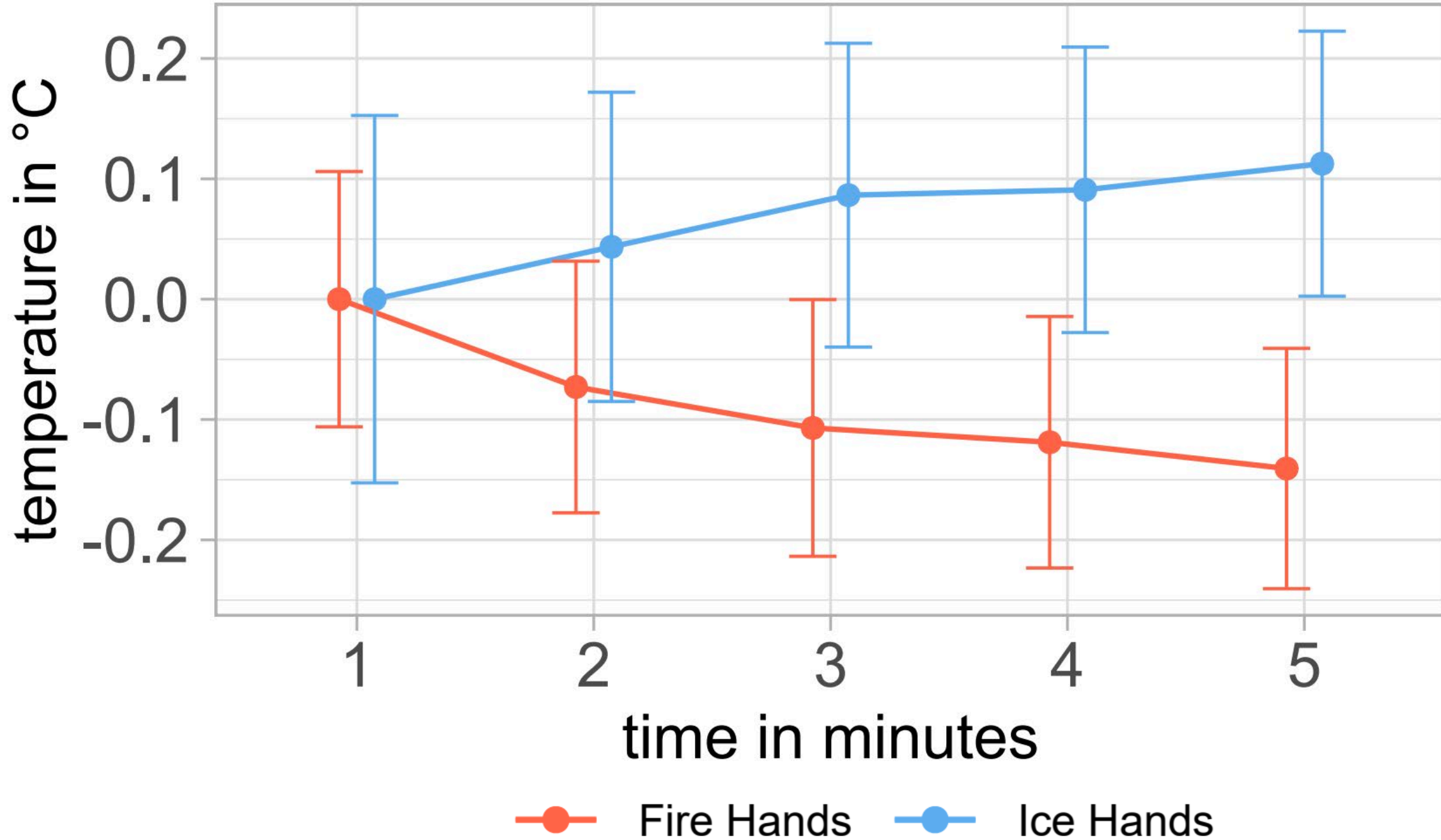
A first key dimension concerns the modality through which the heartbeat is rendered. Comparative work shows that visual, auditory, and haptic feedback are not interchangeable, but differ in their experiential quality and behavioural effects [Dobrushina et al., 2024, Ito et al., 2020]. In a recent randomized study, real-time haptic heartbeat feedback increased interoceptive accuracy and confidence more effectively than visual heartbeat feedback, and was also rated as more pleasant and helpful [Dobrushina et al., 2024]. The authors attribute this difference to higher bodily plausibility, that is, to the fact that haptic feedback more closely resembles the natural phenomenology of the heartbeat.

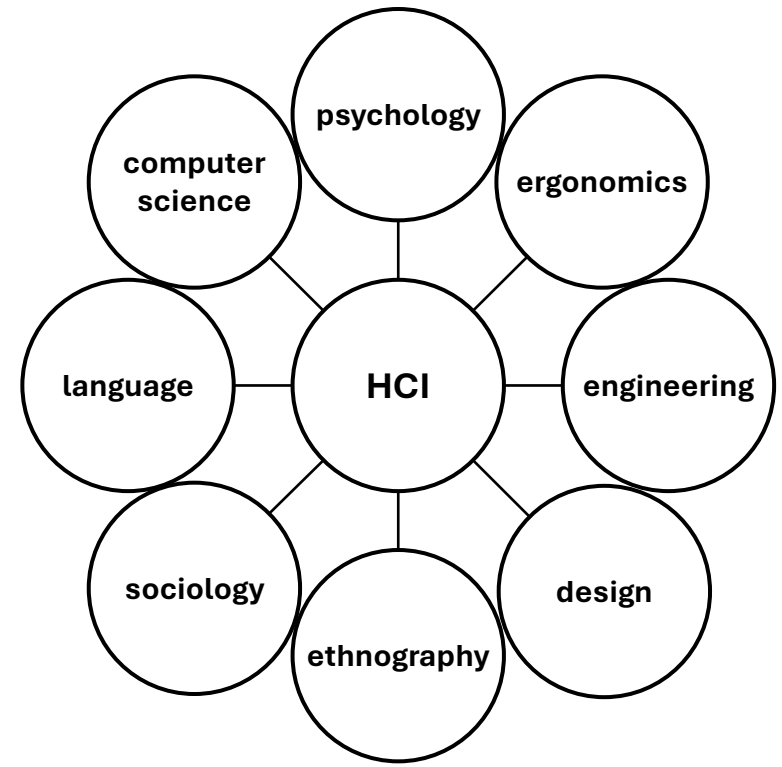
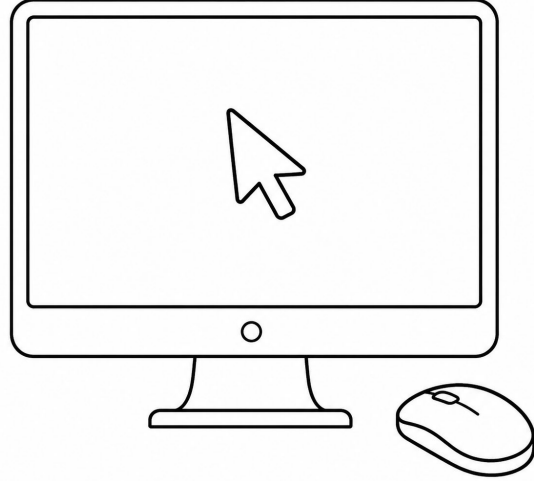
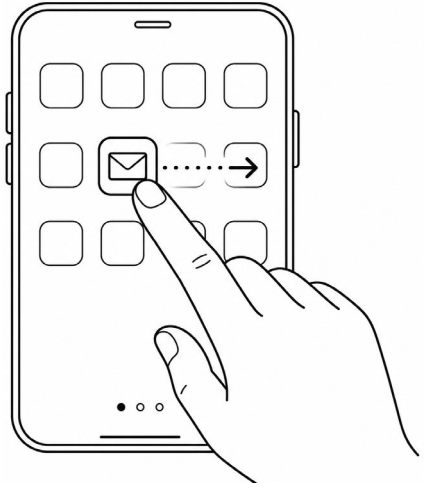
Similar effects appear in regulation-oriented work. Zhou et al. [2020] found that heartbeat-like vibration influenced heart-rate variability and supported physiological relaxation, whereas heartbeat sound alone did not show comparable effects, and T. Azevedo et al. [2017] reported reduced anxiety and arousal for the wrist-worn haptic device Doppel during anticipation of public speaking. At the same time, multimodal representation is not necessarily beneficial: Ito et al. [2020] found that audio-visual false heartbeat feedback did not produce additive benefits over single-modality conditions in a stress task. Modality must therefore be regarded as a substantive design variable rather than as a purely technical implementation choice.

Temporal Mapping: Veridical, Synchronous, Delayed, and False Feedback: What is the difference between Veridical and Synchronous feedback? Isn't everything that is not Veridical/Synchronous false feedback? I find the term false feedback a bit vague. Can we define this? I would prefer to distinguish between modified signals and synthesized feedback. Later is maybe false feedback? A second key dimension

1https://www.playstation.com/de-de/games/resident-evil-7-biohazard/
2https://store.playstation.com/de-de/product/EP1003-CUSA08933_00-SKYRIMVR00000000
3https://www.meta.com/de-de/experiences/moss/1654565391314903







User Representations in Human-Computer Interaction

Niels Henze

Asking new Questions to the Universe with Artificial Intelligence



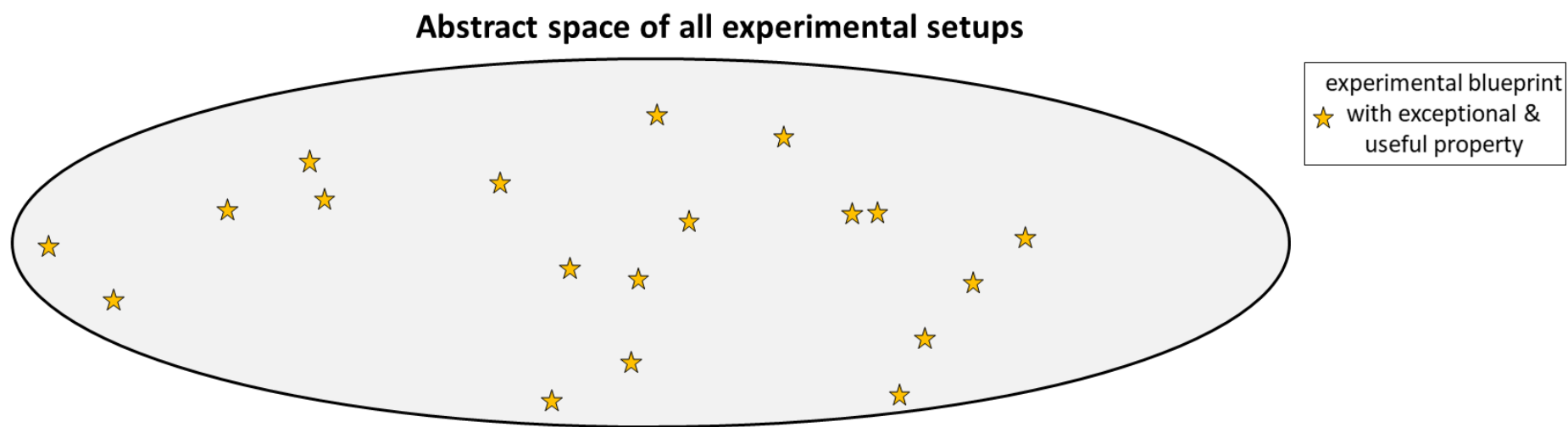
Mario Krenn

Artificial Scientist Lab



EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

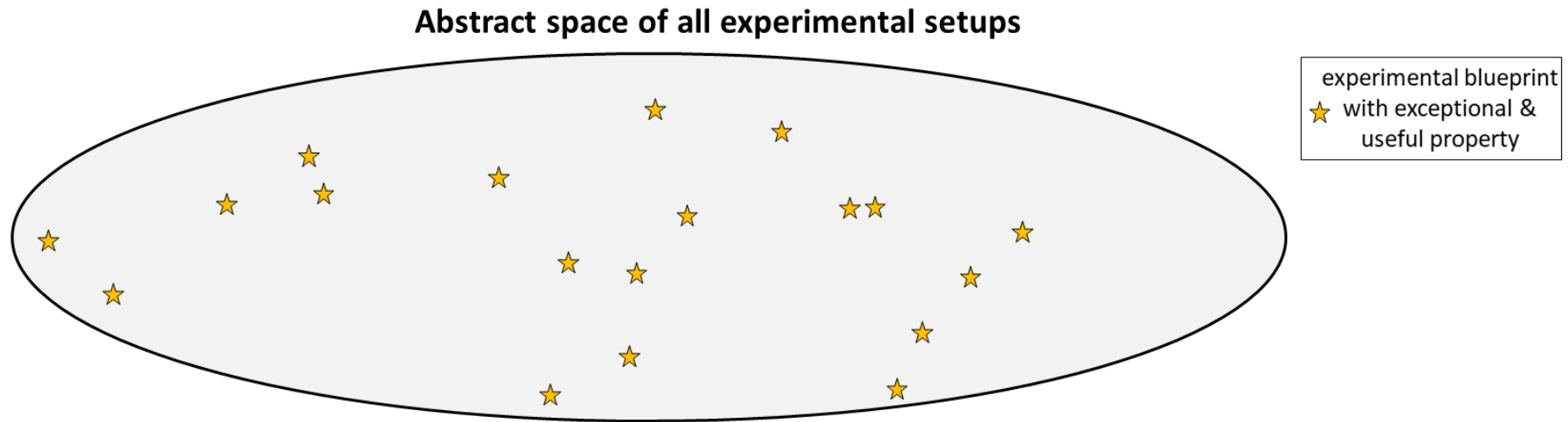




Some examples: (without symmetry)

3 lasers, 3 BS, 3 detectors: 1000 combinations

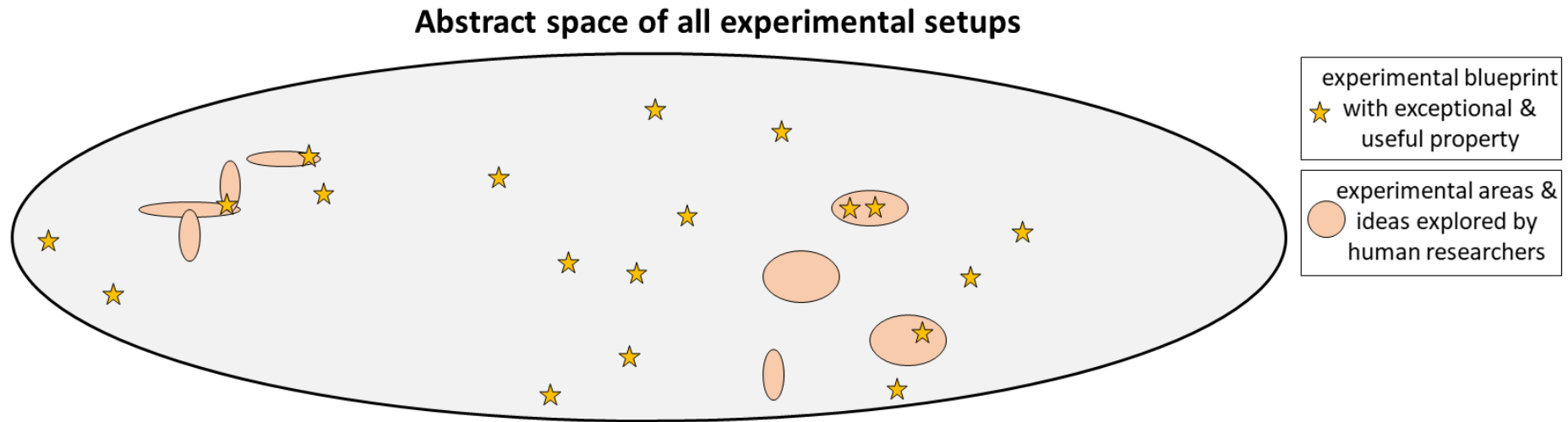
5 lasers, 5 BS, 5 detectors: 81,000 combinations (!)



Some examples: (without symmetry)

3 lasers, 3 BS, 3 detectors: 1000 combinations

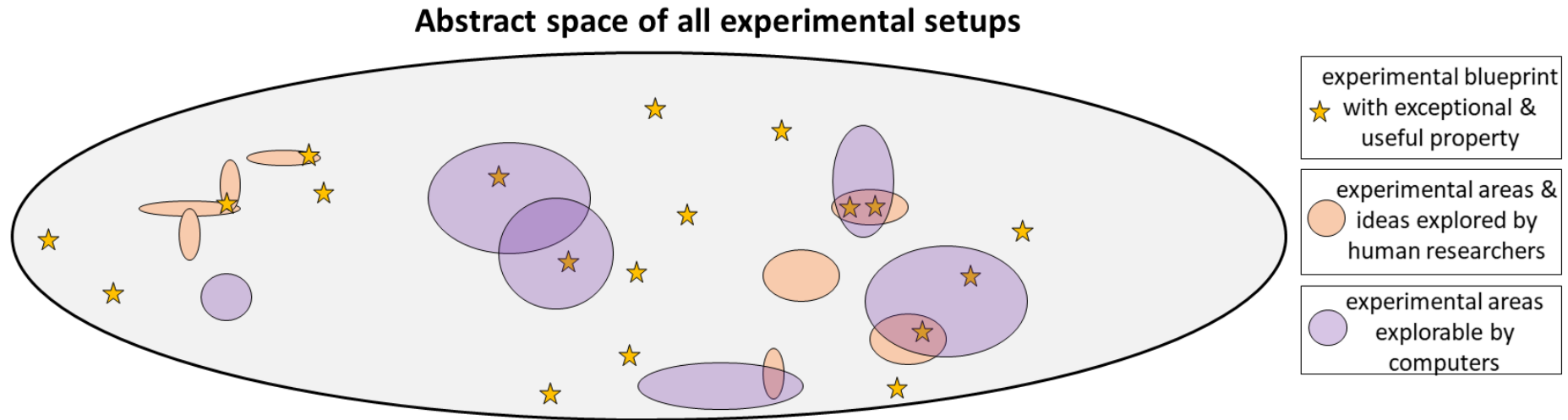
5 lasers, 5 BS, 5 detectors: 81,000 combinations (!)



Some examples: (without symmetry)

3 lasers, 3 BS, 3 detectors: 1000 combinations

5 lasers, 5 BS, 5 detectors: 81,000 combinations (!)

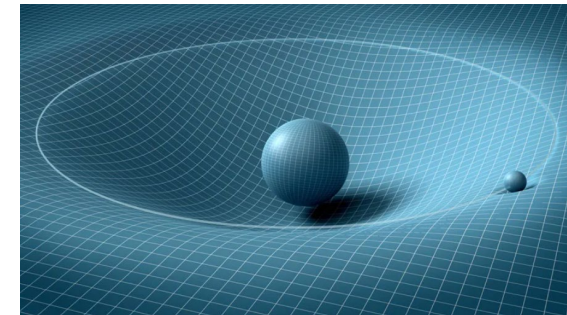


Designing Physics Experiments with Artificial Intelligence

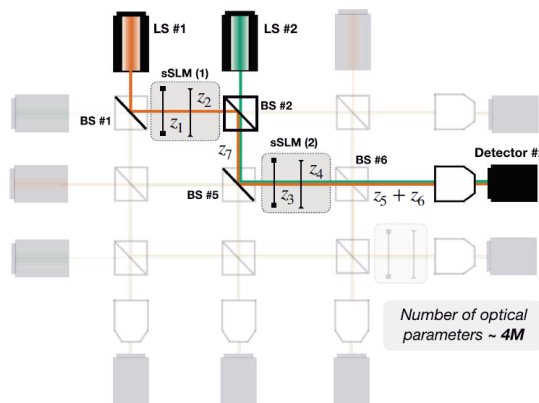


Gravitational wave Detectors
Phys. Rev. X **15**, 021012 (2025)

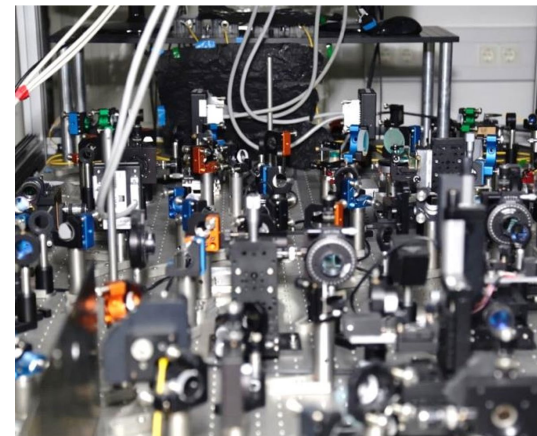
Quantum-Enhanced Telescopes
arXiv:2607.nnnnn



Highly sensitive
Quantum-Tech
for GR Research

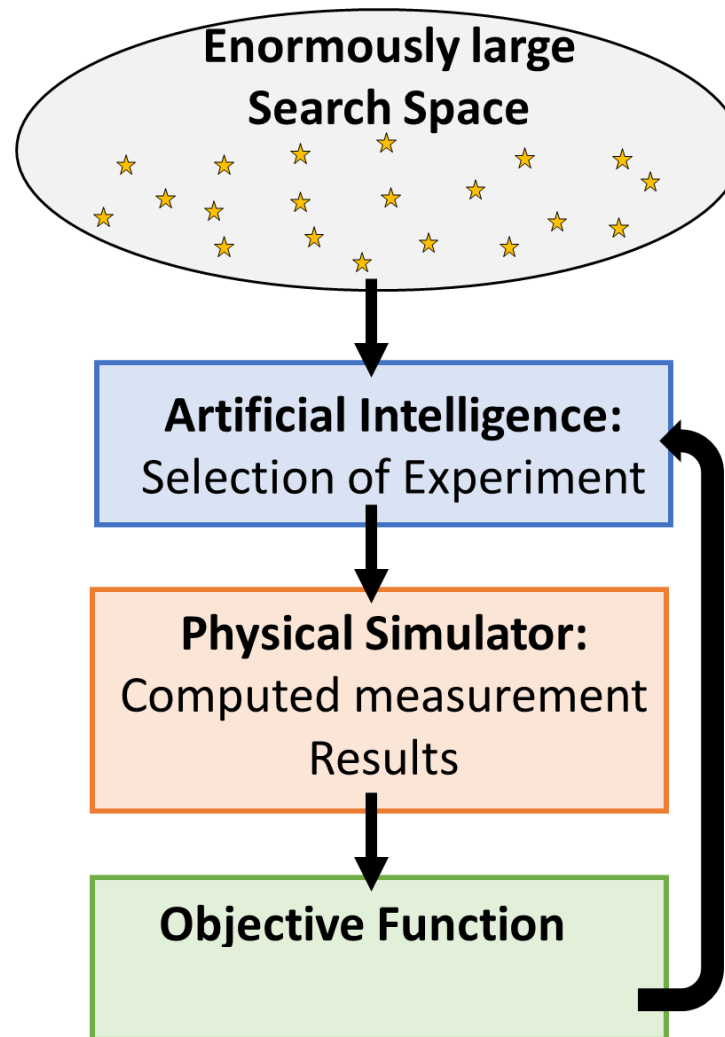


Microscopy
Nat. Comm **15**, 10658 (2024)

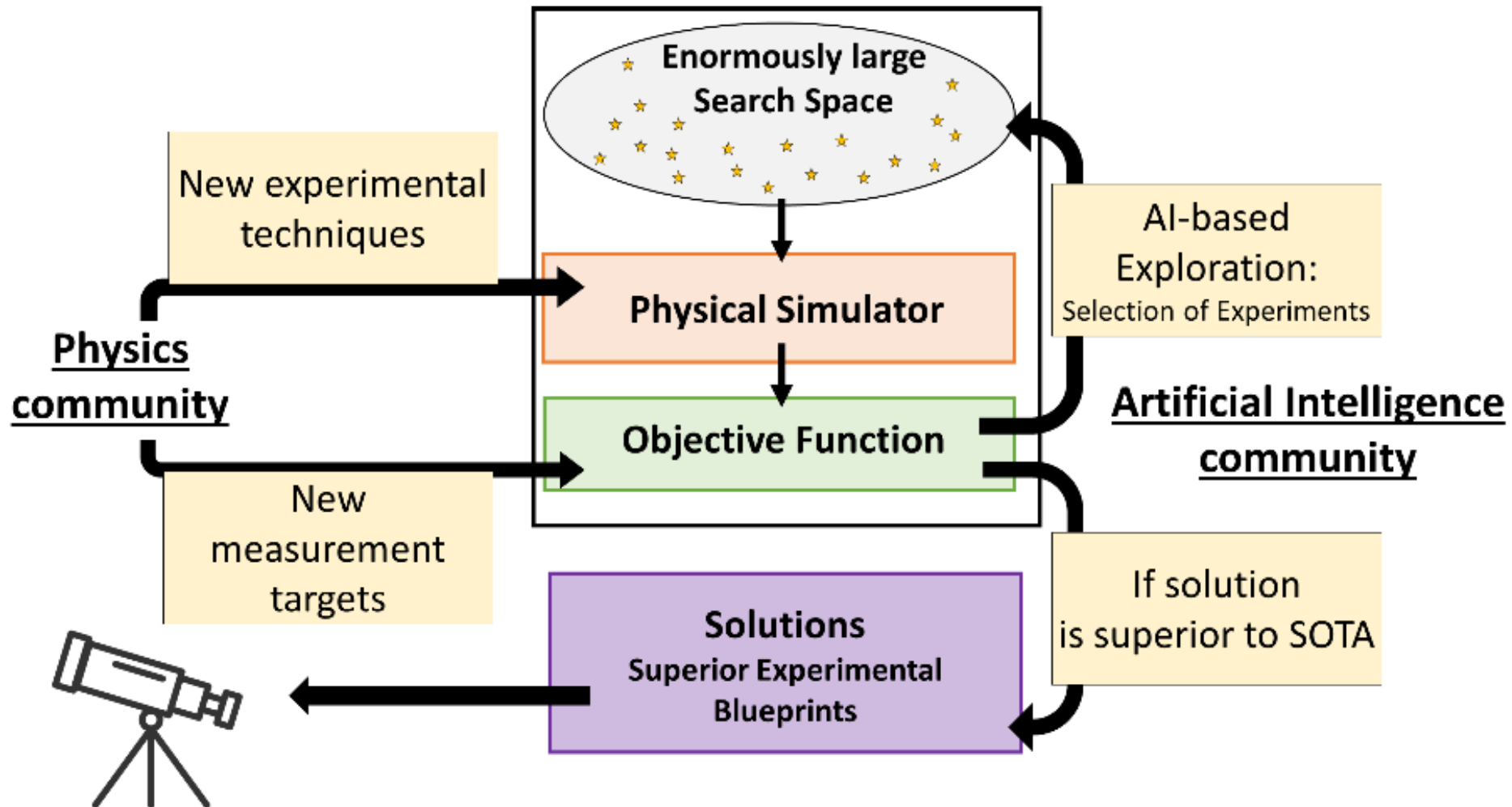


Quantum
Entanglement, Networks

Designing Physics Experiments with Artificial Intelligence



Designing Physics Experiments with Artificial Intelligence





Dedicated Educator Award

Recognition of outstanding commitment to
teaching



EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

DEDICATED EDUCATOR
AWARD

OF THE FACULTY OF SCIENCE

THE DEDICATED EDUCATOR AWARD 2026 IS PRESENTED TO

DR. VERENA SEIBOLD

FOR HER OUTSTANDING DEDICATION TO TEACHING

TÜBINGEN, 01.07.2026


PROF. DR. THILO STEHLE
DEAN


PROF. DR. KAY NIESEL
VICE DEAN FOR STUDIES



EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

DEDICATED EDUCATOR
AWARD

OF THE FACULTY OF SCIENCE

THE DEDICATED EDUCATOR AWARD 2026 IS PRESENTED TO

DR. NILS ANTHER

FOR HIS OUTSTANDING DEDICATION TO TEACHING

TÜBINGEN, 01.07.2026


PROF. DR. THILO STEHLE
DEAN


PROF. DR. KAY NIESEL
VICE DEAN FOR STUDIES



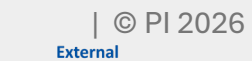
PHYSIK INSTRUMENTE

Innovation Award
2026

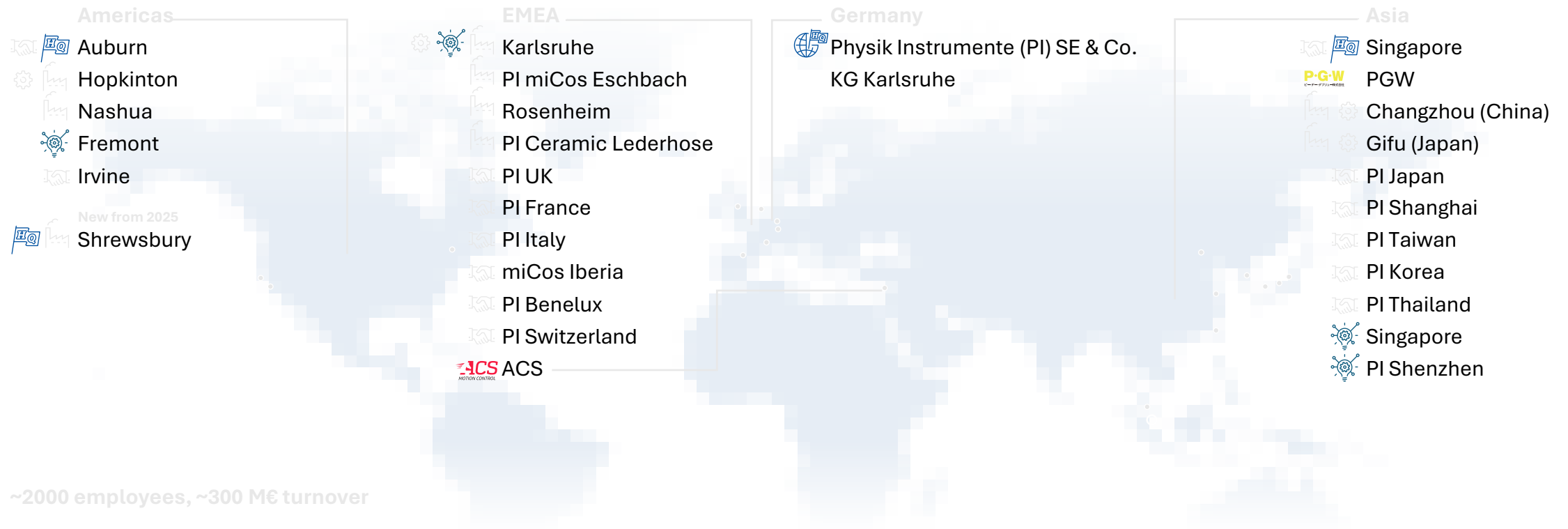
Eberhard Karls
Universität
Tübingen

INNOVATION
DRIVES THE WORLD.

WE DRIVE
INNOVATION.



The PI Group



9

Production sites
across the world



32,000 m²

of production area for
individual to mass production



380 m²

of ISO class 6 cleanrooms



415 m²

of ISO class 5 cleanrooms

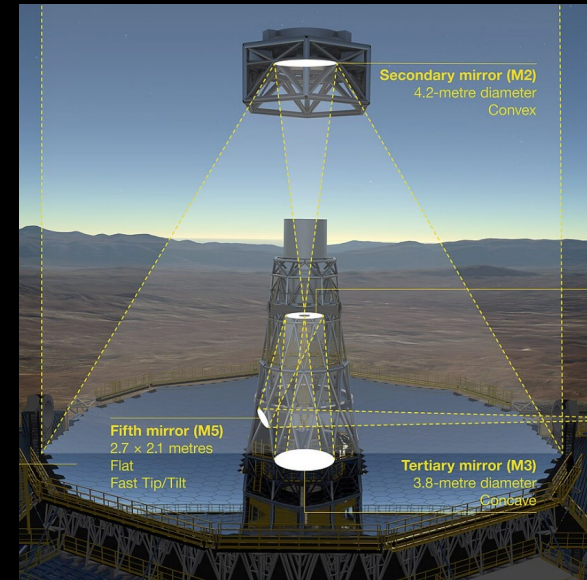
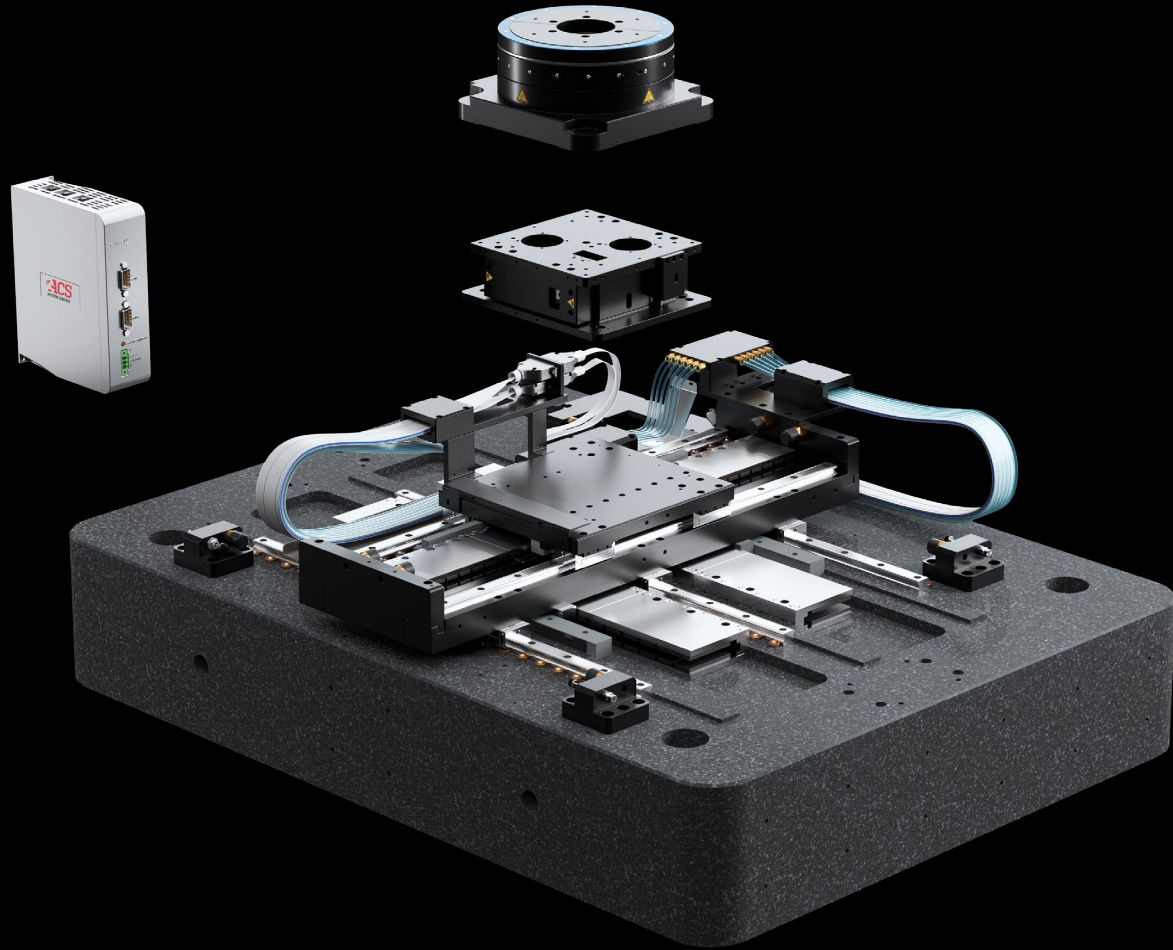


Scalable units

Small series to
semi-automated



Image: ESO



The optical system of the ELT showing the location of the mirrors | ESO

The background of the entire page is a stylized image of the Earth from space, showing continents and oceans in shades of blue. Overlaid on this is a complex network of white lines and dots, resembling a global communication or data network. The lines connect various points across the globe, creating a web-like structure. The overall aesthetic is high-tech and futuristic.

PI

PI // INNOVATION AWARD

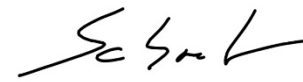
Der PI Innovation Award 2026
wird vergeben an

Dr. Maria-Paola Forte

für ihre herausragende Dissertation
mit hohem Innovationspotential:

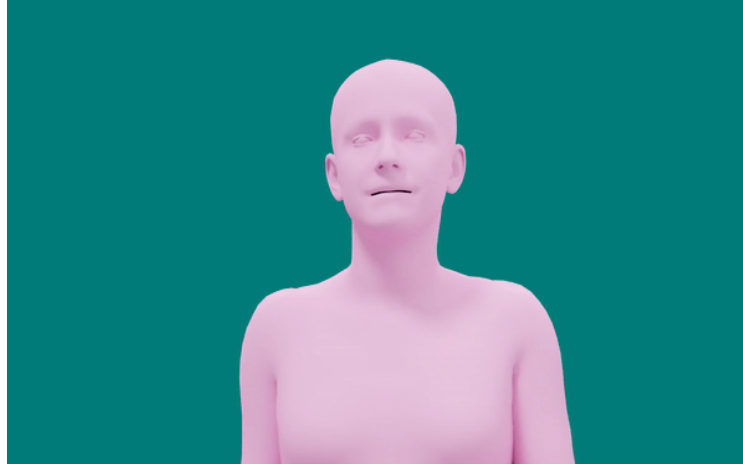
„An Interdisciplinary Approach to Human Pose Estimation:
Application to Sign Language“

Karlsruhe, 01.07.2026

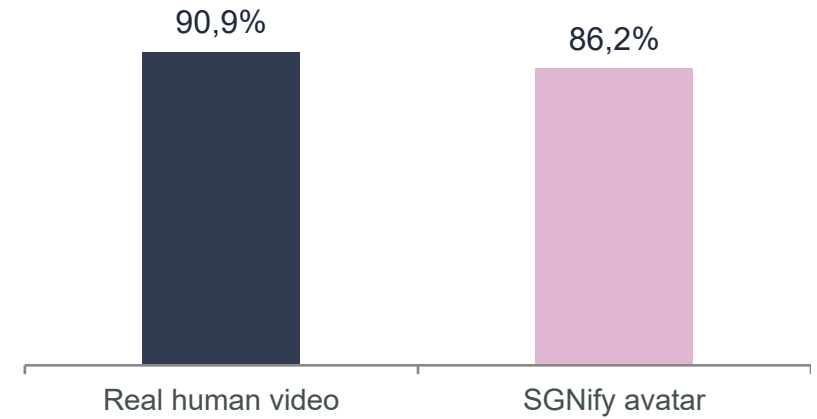
A handwritten signature in black ink, appearing to read 'Schreiber', written over a horizontal line.

Dr. Steffen Schreiber,
Director Global Innovation
& Scouting Global, PI

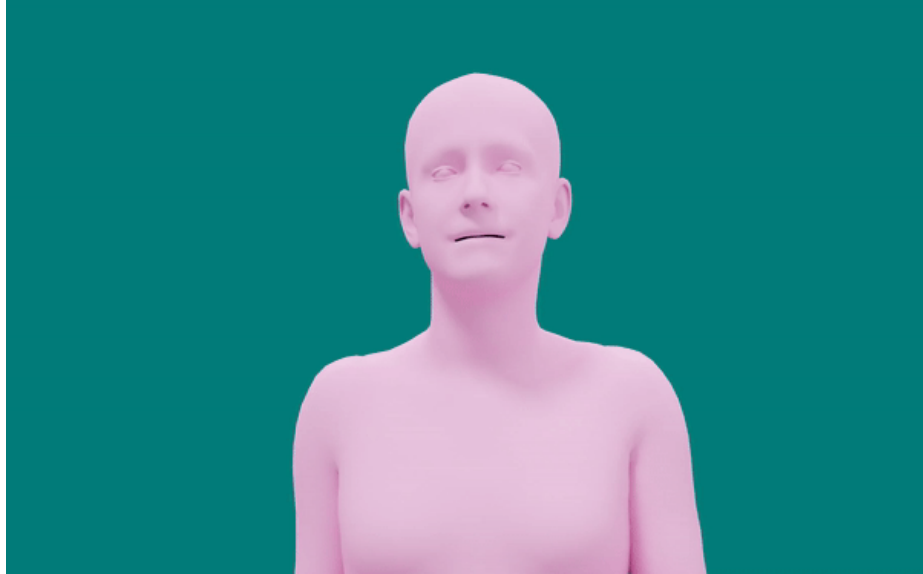




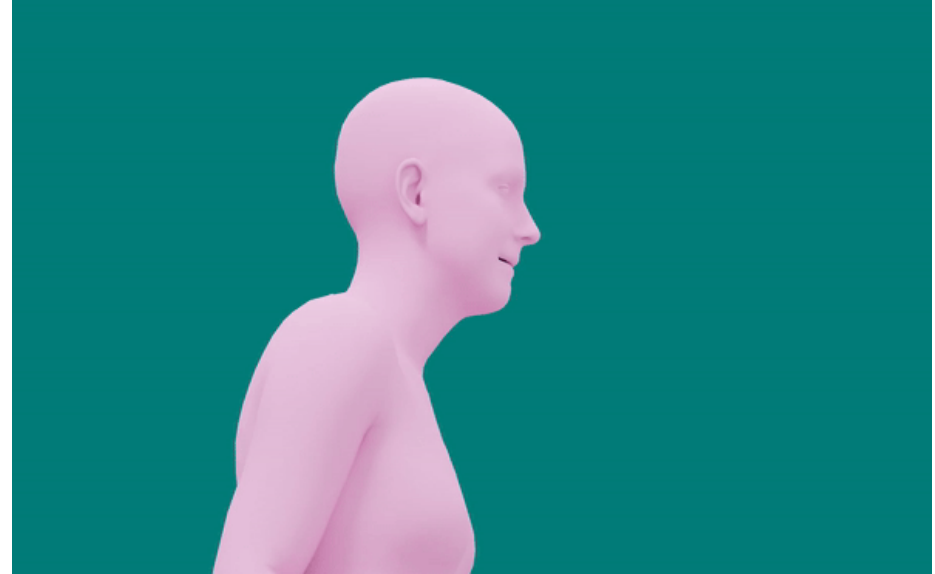
SGNify



Reconstructed signing avatars are understood almost as well as real video
86% vs 91%, the first method to come this close



Frontal reconstruction: it reads as contact



Rotated: the hand is nowhere near

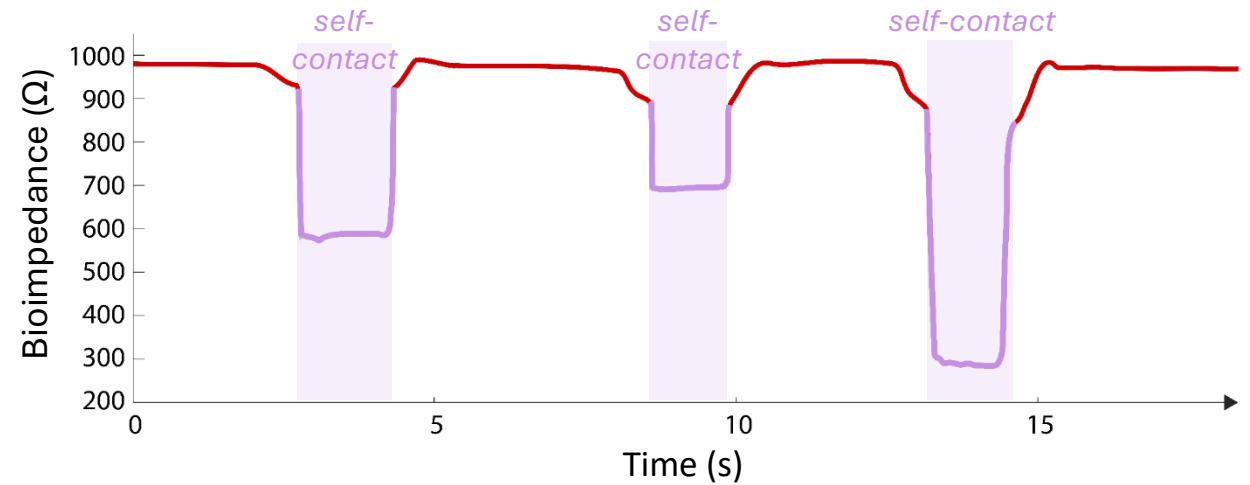
A different signal is needed to capture what cameras miss →

First systematic study of how self-contact affects bioimpedance

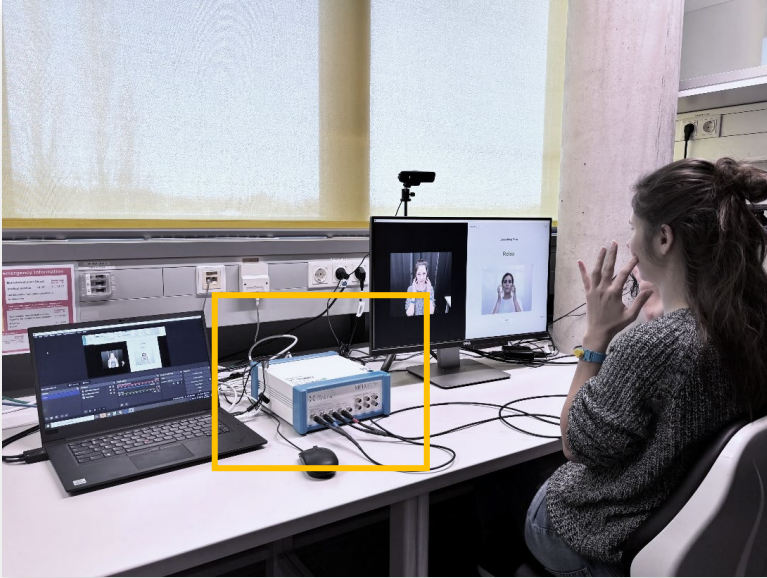
Skin-to-skin self-contact detected across high frequencies

237.8 kHz – 4.1 MHz

using the magnitude of the signal

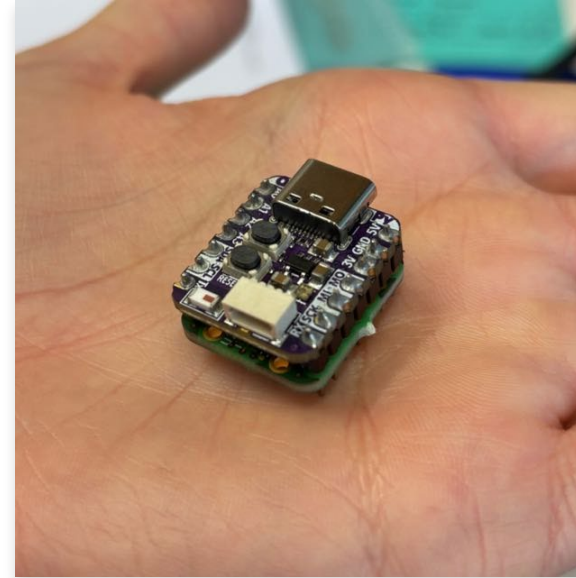
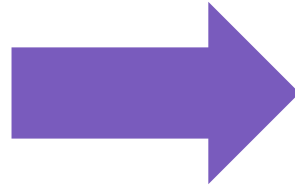


Self-contact shows up as a clear drop in the bioimpedance signal



Lab reference instrument

€15,000 · 4 kg



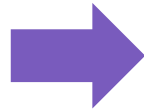
Wearable sensor

€20 · 20 g · 2 cm

~750× cheaper

~200× lighter

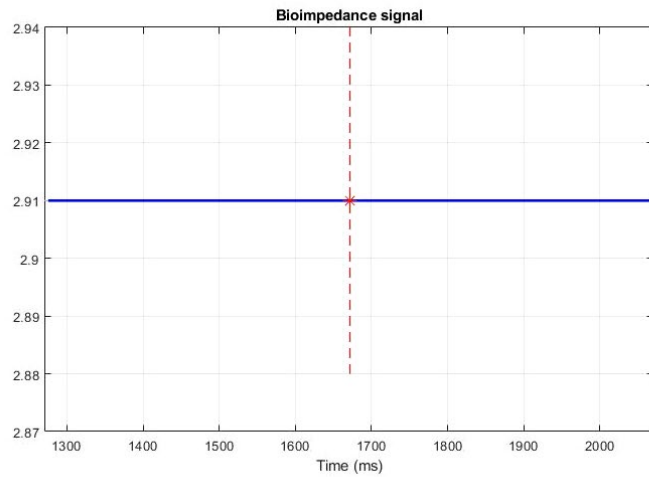
Pinpointing the requirements made the sensor miniaturizable



SGNify



SGNify + BioTUCH (with the sensor)



SEVERAL APPLICATION FIELDS



Motion capture & VFX

Contact-aware motion capture for film, games, XR, and virtual production



Mental-health biomarker

Face-touching frequency can quantify anxiety, stress, and cognitive load



Assistive communication

Forceless, always-available input for people with severe motor impairment

ALREADY MOVING OUT OF THE LAB



Protected

German provisional patent filed; PCT application under examination



Supported

Max Planck Foundation supporting commercialization



Demonstrated

Live demo at the 75th Lindau Nobel Laureate Meeting and at EuroHaptics

Today
!



Get together with Poster Session & Catering

Innovative Teaching in Times of Generative AI

- Teaching in the Age of AI at the Faculty of Science (Vice Dean for Studies)
- Learning with AI in Introductory Physics: Harnessing the Potential – Reflecting on the Limits (Physics)
- Development of an AI-powered feedback tool for training basic therapeutic skills in the new interdisciplinary Bachelor's program in Psychology and the Master's program in Clinical Psychology and Psychotherapy (Psychology)
- AI in Education - AI Tutor (Computer Science)
- Integration of Artificial Intelligence in Pharmaceutical Education (Pharmacy)
- Programs to support researchers in transferring innovative scientific findings into practical applications (Startup Center)
- AI Tutors and individualized feedback through AI in OMIAS (Mathematics)