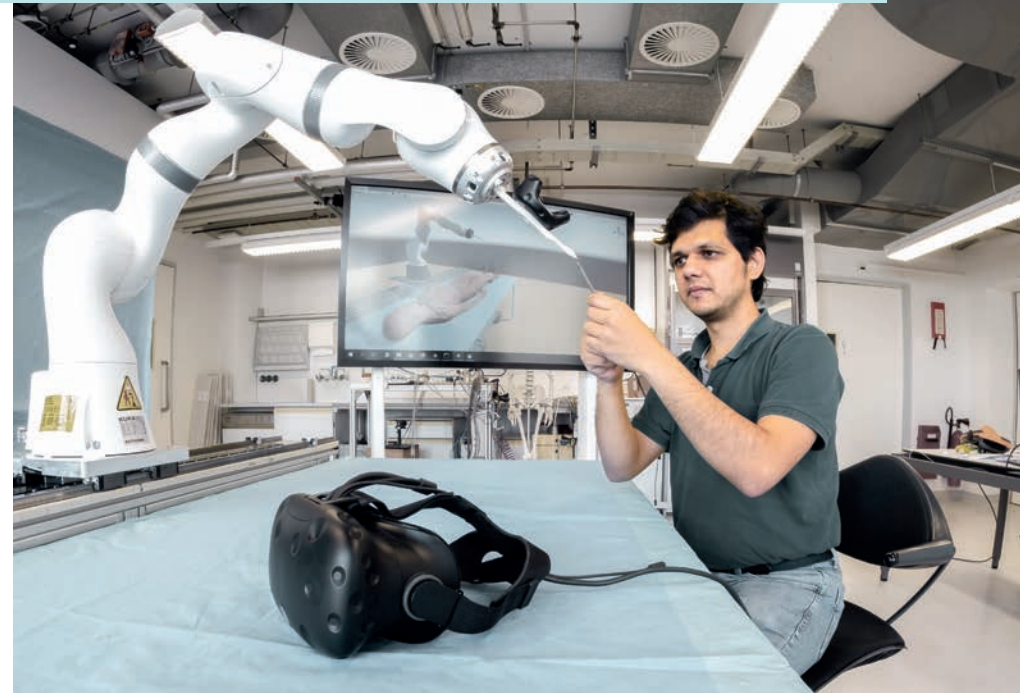




Universität  
Basel

Department of  
Biomedical Engineering



# 6<sup>th</sup> DBE Research Day

The Department of Biomedical Engineering –  
innovative research from bench to bedside



Tuesday, 8 September 2020  
Zentrum für Lehre und Forschung Hebelstrasse 20,  
CH-4031 Basel  
Register now: [dbe-events.dbe.unibas.ch](https://dbe-events.dbe.unibas.ch)

## Contact

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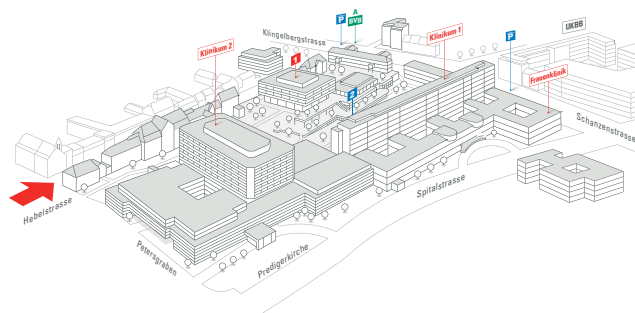
# Dear Guests and Colleagues

The Department of Biomedical Engineering is a joint venture of the University of Basel, the University Hospital Basel and the University Children's Hospital Basel and is associated with researchers from the University Center for Dental Medicine Basel.

Since its foundation, the DBE aims to develop effective technical solutions for clinical problems and to put them right into the hands of clinicians. In order to be able to go all the way from the clinical problem to its actual solution, the DBE not only conducts high-level research, but also encourages and institutionalises fruitful exchange between researchers, clinicians and both young and established companies.

The Research Day of the DBE is an essential part of this objective. It is the platform for an informal exchange about ongoing research, pressing problems, unused opportunities and crazy ideas. Your contribution is most welcome. So please accept our invitation to the 6th DBE Research Day at the «Zentrum für Lehre und Forschung» of the University of Basel.

Prof. Dr Philippe C. Cattin  
Department Head



- 1 Zentrum für Lehre und Forschung (ZLF), Hebelstrasse 20
- 2 Ausgang Hebelstrasse, Universitätsspital Basel und ZLF
- P City Parking Einfahrt Schanzenstrasse oder Einfahrt Klingelbergstrasse
- A Bus 31, 33, 34, 36, 38 – Universitätsspital

# Agenda 8 September 2020

8.45	<b>Dr Werner Kübler &amp; Prof. Philippe Cattin</b>	<b>Welcome to the DBE Research Day</b>
8.55	<b>Session 1: Rising Stars</b>	<b>Chair: Prof. Ivan Martin</b>
8.55	PD Dr Florian Thieringer	The digital (r)evolution in cranio-maxillofacial surgery – from bench to bedside
9.10	Prof. Mathieu Sarraacanie	Quantitative MRI for very low field
9.25	Prof. Anne Mündermann	In vivo human models for articular cartilage mechanobiology research
9.40	Prof. Arnaud Scherberich	Adipose-derived cells for bone regeneration: generation of bone germs, developmental engineering and use of nanoparticles
10.00	<b>Poster Session with Coffee</b>	
11.30	<b>Session 2: Speed Pitches</b>	<b>Chair: Prof. Eva Scheurer</b>
	- Dr Katja Mercer-Chalmers-Bender	Bridging the knowledge gap in forensic toxicology with applied research
	- Dr Francesco Santini	Muscle MRI: structure and function
	- Dr Jens Würfel	Neuroimaging in cohorts
	- Dr Bekim Osmani	Hierarchically structured polymer thin-films for spinal cord implants
	- Dr Claudia Lenz	Postmortem forensic maging
	- Prof. Raphael Guzman	Virtual reality in neurosurgery
	- Dr Edgar Delgado-Eckert	Computational methods in physiology, disease diagnosis, patient phenotyping, and longitudinal disease monitoring
	- Dr Daniel Studer	Spine Docs with SpineBots
	- Prof. Carlalberta Verna	Orthodontic biomechanics - from simulation to clinical applications
	- PD Dr Nadja Rohr	Clinic-laboratory-interface
	- Mia Caspar	Touchless monitoring of pulse rate and respiratory rate in the emergency department
12.30	<b>Poster Session with Lunch</b>	<b>Sandwiches will be offered</b>
14.00	<b>Session 3: Evaluated Groups</b>	<b>Chairs: Prof. Cristina Granziera, Prof. Carol Hasler, Prof. Alexander Navarini</b>
14.00	Prof. Pablo Sinues	Translational breath research for clinical diagnosis and therapeutic monitoring
14.10	Dr Kapil Dev Singh	Personalized therapeutic management of epileptic patients guided by pathway-driven breath metabolomics
14.20	Kim Arnold	Real-time in vitro metabolomics of bacterial pathogens
14.30	Breath Research Group	Discussion
14.40	Prof. Georg Rauter	MIRACLE puzzle pieces and their first assembly
14.50	Manuela Eugster	A super-accurate miniature-robot for minimally invasive interventions
15.00	Murali Krishna Karnam/ Marek Zelechowski	Controlling a medical robot intuitively using VR
15.10	BIROMED-Group	Discussion
15.20	Prof. Azhar Zam	Light-based smart technologies for diagnostic tools and therapy monitoring
15.30	Hamed Abbasi	Real-time optical feedback for smart laserosteotomy: miniaturization and closed-loop operation
15.40	Hervé Nguendon	Real-time optoacoustical feedback for smart laserosteotomy: miniaturization and nerve detection
15.50	BLOG-Group	Discussion
16.00	<b>Prof. Bert Müller</b>	<b>Closing remarks</b>
16.15	<b>Poster Awards</b>	<b>Committee: Dr Reina Ayde, Dr Antal Horvath, Dr Claudia Lenz, Dr Bekim Osmani, Dr Muhamed Barakovic</b>