



University
of Basel

Department of
Biomedical Engineering

DBE Newsletter

November 2018

Events



SWITZERLAND
INNOVATION
PARK BASEL AREA

Networking Apéro CONNECT – 15 November 2018, 5pm

The Swiss Innovation Park Basel Area and the Innovation Office of the University jointly invite to an informal apéro on the 15th November starting at 5pm: Gewerbestrasse 24, 2nd floor.

Grab free drinks and snacks, learn the latest news and get to know the community in Allschwil and beyond. No need for registration.



With great pleasure Professor Dr. Hans-Florian Zeilhofer from University Basel (Innovation Space Basel) and Professor Dr. Jan Keunen from the Radboud University Medical Center Nijmegen (Netherlands) invite you to join a two-day workshop by the Dutch artists Hans Aarsman and Roy Villevoeye – an immersive experience into the world of non-protocol diagnostic methods. The non-protocol approach calls for inventiveness and enjoyment of your profession. Taking into consideration what participants in previous workshops in the Netherlands tell, participating helps to be a better doctor.

Date: 8.+9. December 2018 (Saturday & Sunday, all day)
Registration fees: free of charge, food and drinks included
Registration: katalin.bohner@unibas.ch
Meeting point: University Hospital Basel / Ground floor / Spitalstrasse 21, 4156 Basel



Invitation to join the seminar series at the Institute of Forensic Medicine:

Mo, 19. November 2018, 16.00 - 17.15
„Die Bedeutung der Obduktion als Qualitätssicherungsmaßnahme in Spitälern“
Prof. Alexandar Tzankov, Institut für Pathologie, Universitätsspital Basel

Mo, 10. Dezember 2018, 16.00 - 17.15
"Automatisierte Schätzung des biologischen und chronologischen Alters mittels MRI"
Dr. Martin Urschler, Ludwig Boltzmann Institut für Klinisch-Forensische Bildgebung, Graz

Location: library of the institute, Pestalozzistr. 22, 4056 Basel

INSIDE MOTION

Medicine in the Fourth Dimension

Exhibition of DBE project at Pharmaziemuseum Basel – save the date: 27 April – 1 June 2019

The exhibition “[Inside Motion. The Fourth Dimension of Medicine](#)” invites visitors to change place with surgeons inside a virtual operation theatre and to learn about organ motion, real time tracking and new treatment measures. The exhibition, generously funded by the Swiss National Science Foundation, is designed in cooperation with media artists and designers of the Academy of Art and Design Basel.

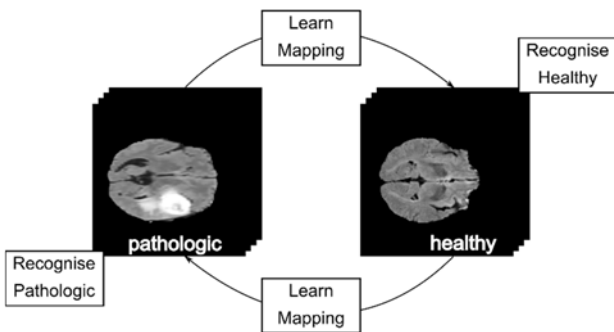
Education



Interested in going to South Korea?

ETH Zurich and the Korean National Research Foundation (NRF) have together established an instrument for funding the exchange of young scientists between South Korea and Switzerland. Doctoral students and young postdocs/researchers at all Swiss institutions from all scientific fields can apply for stays of 3 months in Korea. [The third call for proposals](#) is now open with a deadline for the submission of applications until 30 November 2018.

Research

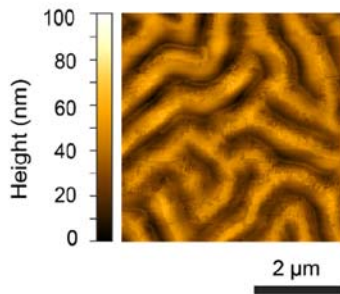


New project in deep learning

Uniscientia, a Liechtenstein based foundation, supports the project „Pathology Segmentation Learned from Weakly Annotated Medical Images” of Philippe Cattin and his medical collaborator Raphael Guzman (USB and UKBB).

The research group aims for an approach able to learn on its own how to segment a pathology only on weakly labelled data. This approach would be capable to learn how to segment pathologies from a training set of images with the pathology and a second set of images without the pathology (i.e. healthy subjects). Such data sets are easy to get in contrast to the manually labelled data sets required for the state-of-the-art approaches.

Best wishes for the project!



Nano-engineered neural interfaces – proof of concept support for Bekim Osmani

Currently, the market for neuromodulation devices values USD 3 billion and is expected to reach USD 11 billion by 2024. State-of-the-art modulation devices, however, are still comparable to that of early cardiac pacemakers, leading to fibrotic encapsulation within weeks. This is mainly predicated on the neural probe's mechanical properties, given by the stiff electrodes from semiconductor industry. The approach of [Bekim Osmani](#) (Biomaterials Science Center) and project collaborators is based on hybrid micro/nano-structured polymer pads covered by ultra-thin and soft metal/elastomer electrodes with a total thickness < 100 nm. Together with partners H. Schiff, Polymer Nanotechnology Group at the Paul Scherrer Institute and P.M. Kristiansen at the University of Applied Sciences and Arts Northwestern Switzerland in Windisch, Bekim submitted the patent EP 18159592.7: Nano-engineered neural interfaces (NENI), in March this year. The University of Basel/ Unitectra, therefore, funded the manufacturing of an early proof-of-concept prototype to be available by the end of 2018.

Best of luck for the further development!



Sci Five – research blog by the University of Basel

Many interesting projects, particularly by younger researchers in Basel, are published on the University of Basel's English-language blog «Sci Five». Alina Giger, doctoral student with the Department of Biomedical Engineering, published the article [Inside Motion – Or how to track mobile tumors](#) about details on the project «Ultrasound-based Motion Management» at the Center for medical Image Analysis & Navigation » (Center for medical Image Analysis & Navigation).

If you'd like to write about your own research or have a suggestion for an interesting topic, please contact kommunikation@unibas.ch.



Award for research on sleep position and snoring

Together with researchers of ETH Zurich and the "Centre Suisse d'Electronique et de Microtechnique" (CESM), Dr. Nicolas Gerig (Bio-Inspired Robots for Medicine-Laboratory) has won an award for research related to the sleep position and snoring.

Sleep position has been proven to strongly influence snoring activity. The purpose of the KTI supported project was to exploit this principle and to develop an "intelligent" bed to reduce snoring by actively influencing the sleeping posture of the user. Particularly, the bed will be fully autonomous enabling to track snoring in real-time and to react in an interactive way by adapting the mattress shape and providing vibratory stimulation to influence the posture of the user.

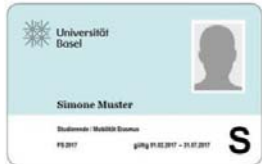
Congratulations to this special project and the award!

Cooperation & Innovation



On 25.10.2018, the [Digital Day](#) took place in Switzerland. More than 70 organizations in twelve cities highlighted multiple perspectives focusing on and beyond the boundaries of digitalisation. The Center for medical Image Analysis & Navigation (CIAN) at the Department of Biomedical Engineering presented its virtual reality software SpectoVR. Hereby, Balazs Faludi, PhD student at DBE, was [interviewed by Swiss television](#) about the purpose and application of SpectoVR. Congratulations to the CIAN group, especially to Balazs!

About Us



Next Wednesday, November 14, the new badge system UNICard will be started at the DBE. All researchers working in Allschwil can pick up their UNICard in the DBE secretariat from 9-12h on every business day. The UNICard is a multifunctional badge, e.g. for entrance to University buildings and cashless payment in the University mensa.

The Department of Biomedical Engineering bridges the gap between natural science and medicine in order to improve procedures and technologies for medical treatment. It is a joint venture of the University of Basel, the University Hospital Basel and the University Children's Hospital Basel.

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