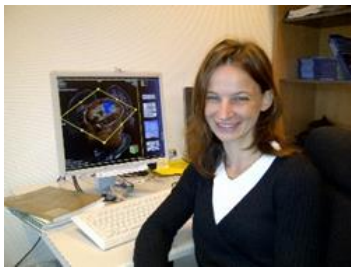


DBE Newsletter

March 2018

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Success



PD Dr. Cristina Granziera joined the DBE in 2017 and now attracted the second professorship funded by the Swiss National Science Foundation at our department. Congratulations to this achievement and success!

Cristina is a neurologist MD PhD, who studied medicine at University of Padova Medical School (Italy) and obtained a PhD in neuroscience and the Swiss Neurology Board in Lausanne (Switzerland). She has worked as a group leader and senior lecturer at University of Lausanne (2011-2014) and as assistant professor in Radiology at the Martinos Center for Biomedical Imaging of Massachusetts General Hospital and Harvard Medical School (2014-2017). Since end 2017, she is heading the Translational Imaging in Neurology (ThINk) Basel group.

Despite significant progress in multiple sclerosis (MS) diagnosis and treatment, there remains the need to understand the interplay between axonal damage and repair in the brain of MS patients, which ultimately influence MS evolution and the accrual of disability. INSIDER (ImagiNg the Interplay between Axonal DamagE and Repair in Multiple Sclerosis) will combine advanced MRI techniques sensitive to axonal structure and organization to gain new insights into axonal damage and repair in MS.

Through machine-learning analysis of multiple advanced MRI data combined with demographic and genetic information, INSIDER will quantify axonal damage and repair both in living patients and in post-mortem samples of MS brains. By doing this, INSIDER will provide new knowledge about the contribution of axonal damage and repair to MS progression and will allow to develop novel surrogate biomarkers to

assess disease evolution and future neuroprotective and regenerative treatments.



Dr. Vanessa Leung and PD Dr. Roman Schmied of the Human Optics Lab (HOL) have successfully obtained a bilateral [bridging grant](#) with China, with a project entitled "Wearable Technology-Driven Study of Short-sightedness in Chinese Children". The 25'000 CHF grant is funded by the State Secretariat for Education, Research and Innovation (SERI) and executed by ETH Global, the Leading House for the Bilateral Science and Technology Cooperation Programme with Asia. This year 68 applications from 27 Swiss institutions were received, of which 9 projects were funded.

The goal of the collaborative project is to apply wearable technology to characterize the visual behaviors of school children at risk of developing myopia. In collaboration with Dr. Chea-su Kee of the School of Optometry at the Hong Kong Polytechnic University, the HOL will execute a multi-stage clinical study on the development of myopia in Chinese schoolchildren starting this Fall.

We wish them best success!



Congratulation to Prof. Dr. Georg Rauter and his student Fabian Just! Their talk on "*Pilot Study: Effects of Arm Weight Compensation with the Rehabilitation Robot ARMin*" (Fabian Just, Verena Klamroth-Marganska, Georg Rauter and Robert Riener), won the 1st price for the best paper award at the AUTOMED 2018! AUTOMED is a joint expert committee of the VDI / VDE Gesellschaft Mess- und Automatisierungstechnik (GMA) and the Deutsche Gesellschaft für Biomedizinische Technik (DGBMT).



The BRIDGE Proof-of-Concept project led by Dr. Tino Töpfer makes promising progress: the project aims for dielectric elastomer sensors (DES) operated at battery voltages. The capacitive sensor is based on a polydimethylsiloxane (PDMS) elastomer layer covered by flexible electrodes. The high-vacuum-based thin-film technology reliably enables the fabrication of sub-micrometer-thin elastomer and nanometer-thin conducting films.

Fabricated on flexible polymer substrates the DES can be directly attached to the skin or implant surface for monitoring with millisecond response. In particular, the project team is going to integrate the DES to an artificial muscle implant for incontinence treatments, which is under development at the Wayne State University in Detroit,

Michigan. The project members envision a reliable force feedback for a substantially improved and biomimetic urinary incontinence treatment.

Announcements

DBE Research Day 2018

This year's Research Day takes place on September 5, 2018. Please save the date and reserve it in your calendar!

General

Newsletter

Please send all news-relevant topics to news-dbe@unibas.ch.

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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