

# BME NEWS



## Biomedical Engineering Day 2011

The industry, medical doctors, and engineers meet for the Biomedical Engineering Day at the Inselspital in Bern with great success.



On May 13, the Biomedical Engineering Day took place in the auditorium Ettore Rossi at the Inselspital in Bern. This event was organized for the third time by the Master in Biomedical Engineering program of the University of Bern and its alumni association, the Biomedical Engineering Club.

The event is an efficient platform in Switzerland for networking of Master and PhD graduates and Swiss and international medical technology companies. This year's companies introduced themselves through oral presentations and gave insight into their commercial activities and their company philosophies as well as showed their demands on junior employees. Students thus had the opportunity to get to know potential future employers and contact them directly. This was made possible between the sessions in personal conversations and at the exhibitors' booths. This year a broad spectrum was

covered as presenters came from large concerns operating globally up to young start-ups from the University of Bern.

The BME Day offered great opportunities for the Bernese biomedical researchers, too. The ARTorg Center for Biomedical Engineering Research and the Institute for Surgical Technologies and Biomechanics as well as the Bern University of Applied Sciences, a partner within the Master program, used the possibility of presenting current research projects to over 300 participants. Interestingly, Master and PhD students play an important role in many of these projects. Thereby, this event was a demonstration of scientific achievements, too.

Besides company representatives, scientists, researchers, and young academics, many medical doctors participated in this year's event as they had the chance for intensive communication with the biomedical en-

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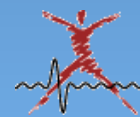
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### Calendar



Swiss IEEE EMBS Chapter  
[www.biomedeng.org](http://www.biomedeng.org)

Check out the IEEE web page for information about their guest lecture series. [www.biomedeng.org](http://www.biomedeng.org)



Visit the SSBE website for current activities and [www.ssbe.ch](http://www.ssbe.ch)

### Get connected



"Those were good times,  
the years in Bern."

Albert Einstein

## Biomedical Engineering Day 2010 ctd.

gineers.

One highlight of the day was the successful live cardiac intervention by Professor Dr. Bernhard Meier, Director Department of Cardiology, Inselspital Bern. Illustrative explanations in the auditorium were given by Professor Dr. Rolf Vogel, ARTorg Center for Biomedical Engineering Research.

The presentation "An Inside Track to Entrepreneurship" by Ulf Claesson, serial entrepreneur was perceived very well. Eloquently and humorously he talked about the challenges when founding a company and gave insight into entrepreneurship from unexpected angles. Founding their own company might be an attractive professional perspective for many participants.

In connection with translational medical technology research, strategic and direct innovation promotion is very important from a political point of view. The Minister of Economic Affairs of the Canton of Bern, Andreas Rickenbacher, introduced the manifold activities of the Cantonal innovation promotion to the audience.

At the end of the day, three awards for excellent academic achievements in the field of Biomedical Engineering at the University of Bern were pre-

sented. Patrik Stirnimann received the Medical Cluster Award 2011 for the best Master thesis. His work "Determinants of the mechanical response of trabecular bone-cement composite" has been accepted for publication in a journal and the results of his thesis have already been incorporated into a new diagnostic simulation software.

The Medical Cluster Award 2011 for the best PhD thesis was given to Matthias Peterhans for his work "Ultrasound-based non-invasive referencing of anatomical structures for computer-assisted soft tissue surgery". His thesis is another example of successful translation of biomedical research into a commercially useful product.

The NCCR Co-Me Poster Award 2011 was given to Khadija M'Rabet Bensalah. Her poster "Multiscale hemodynamic modeling of the intrarenal circulation using the COMSOL multiphysics software" convinced the jury.

Nina Ruef, BME Master student in her first year, was the lucky draw winner of an iPad sponsored by Ypsomed.

*Text: Julia Spyra  
Photos: Tom de Bruyne*

### Gallery of Excellence



Patrik Stirnimann,

MC Award 2011, Master



Matthias Peterhans,

MC Award 2011, PhD



Khadija M'Rabet Bensalah,

NCCR Co-Me Poster Award 2011



## Needles and Pins at the BME Day

"Needles and pins" – who doesn't know the famous song by Smokie and its cover versions? But did you know that we do have BME Club pins now as well? All our members that attended the BME Day had the honor to receive one. That was a great visual statement! The pins were so appealing that we had a few sign-ups on the spot.

*Text: Julia Spyra  
Photo: Lukas Bösch*

## Bern Grand Prix 2011 - wetsuits wanted!



### Congratulations!

Dream team 10 miles (left):

*Lukas Kohler, Christian Gloor, Patrick Roth, Daniel Lachner, Matthias Peterhans*

Dream tem 4.7 km (right):

*Tom de Bruyne, Jorge Sague, Constanze Hofmann, Christian Güder*

Bern, May 14th 2011, 1.30 p.m. : cloudy, dry. Team for the 4.7 km Altstadt-GP gets a perfect warm-up from Patrick Roth. 2.20 p.m. waiting for the start at 2.30 p.m.: dark clouds, rain, thunderstorm. 2.30 p.m: yippeeh, starting signal, too many people trying to start running at the same time, walking, running, clothes soaking wet. Crazy rain loving spectators on the sidewalk cheering untiringly. Finally around 3 p.m the finish line, finisher medal, isostar bottle, banana and a happy but soaking wet BME Club Team. Some time later the almost same procedure for the 10 miles GP Team. Thanks to Julia Spyra for the organization and Patrick Roth for the warm-up. We had a fun time!

*Text: Constanze Hofmann  
Photos: Tom de Bruyne*

## Graduation Ceremony, Kultur Casino Bern

At the end of March, the Faculty of Medicine of the University Bern organized the annual diploma- and graduation ceremony for the new alumni and alumnae in the Kultur Casino Bern.

After the opening piece by the Medical Orchestra, Professor Dr. Peter Eggli, Dean of the Medical Faculty, welcomed the graduates and their families. Then, Professor Dr. Thomas Zeltner held a speech titled "The Checklist". He addressed the fresh alumni and asked them to deal with their new rights and obligations in a responsible and deliberate way.

Besides continuous education in expert knowledge, the human factor also plays a key role in daily work, he emphasized. This held especially true in the field of health care. And, therefore, the prospective doctors and scientists should investigate in these skills.

In the end, each graduate was handed his or her diploma. The biomedical engineers received them from Professor Dr.-Ing. Nolte. After the best graduates of the Medical Faculty, one of them a straight 6.0 student, were honored, the lecturer of the year was nominated: Professor Dr. med. Christian Seiler. After about two solemn hours, the ceremony ended with a jolly apéro for all guests.



*Text: Lukas Bösch  
Photo: Salman Chegini*

*From top to bottom, left to right:  
P. Lindenmann, L. Bösch, P. Stirnimann,  
B. Graf, M. Seif, L.-P. Nolte (Program  
Director), T. Steiner, B. von Waldkirch.*



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## BME Lecturers visit Ziemer Ophthalmic Systems!

To make this New Year's event for the lecturers of the Master in Biomedical Engineering Program truly amazing and different from last year, Professor Nolte proposed a visit to the company Ziemer Group in Biel. Should you ever decide to get the feeling for what a bona fide Swiss high precision technology stands for: focused, well defined niche, state of the art technology and products of superb quality, yet outside the famous watch industry, Ziemer Group is your choice. The lecturers were greeted by Mr Ziemer himself, who took the time to explain the foundation and progress of his company, stating the main principles: right focus within the market, uncompromised high quality, with an entire chain of reproducible production under tight control. Ziemer was founded in 1999 and since then excels in ophthalmology products for both diagnostics and surgery. Their R&D evolves around patient needs, where medical approaches combine with cutting edge technological methodologies, and striving for competitiveness while not underestimating the costs. Mr Ziemer emphasized that the goal is not to produce unique perfect product, a sort of "Formula ONE" for ophthalmologists and optometrists, but to be able to ensure reproducible serial production of the perfect "Formula ONE". He explained that his high price politics allows and guarantees high quality products. Collaborations with other companies ensure highest quality components of their products, whose final assembly takes place under the roof of Ziemer Group. After the fascinating introduction, we toured the company. We were shown a digital 3D model of the Femtolaser named FEMTO LDV

(stands for Leonardo da Vinci), which incorporates 1000 pieces including many lenses for focusing, and weighs 250kg. FEMTO LDV replaces microkeratomes preceding the laser treatment of the cornea. Instead of cutting 100microns in the depth of the cornea, FEMTO LDV applies low energy beams to perforates the cornea, producing "cut" surface, which upon lifting allows subsequent application of the Excimer laser for precise cornea treatments. Amazing as it may sound, the whole procedure lasts only 5 minutes! We learnt that each laser is tested on 20 pig eyes, which have to be perfectly cut before the laser can be released to the market. We were next introduced to PASCAL, the new generation of dynamic contour tonometer, which essentially measures intraocular pressure, and is of utter importance for glaucoma patients. Easier to use and more precise compared with the classical device, based on a completely novel technological approach. Our next encounter was with GALILEI, which with extremely high precision measures corneal thickness and provides topographical measurements of the front and rear corneal surfaces. Finally, we had a demonstration of AMADEUS II, advanced automated microkeratome, a viable and dependable alternative to the FEMTO LDV. After refreshments, the respective specialist explained each product in more detail. We were truly impressed! Still contemplating how a successful company built on well-defined values can prosper with such success, we travelled to the restaurant on Biel lake for yet another discovery - the famous "Treberwurst". This special sausage is cooked under the hood during distillation of special

Schnapps. The distiller of the village cooks the sausages for the entire village. And they are seasonal - available only from mid January till the end of February. Thus, we were in luck to taste this speciality of the region, which attracts tourists from afar. Well we understood why! Served with sauerkraut, new potatoes, and sprinkled with even more Schnapps, it tasted simply divine. We had a chance to talk, to discuss, and to laugh - it was a perfect end of a wonderful afternoon - combination of science, entrepreneurship and excellent food! We are looking forward for the next event. And a big thank you to the organizers!



Frank Ziemer discussing with  
BME lecturers

*Text: Dobrila Nesic  
Photo: Prabhitha Urwylker*

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## BME NEWS

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