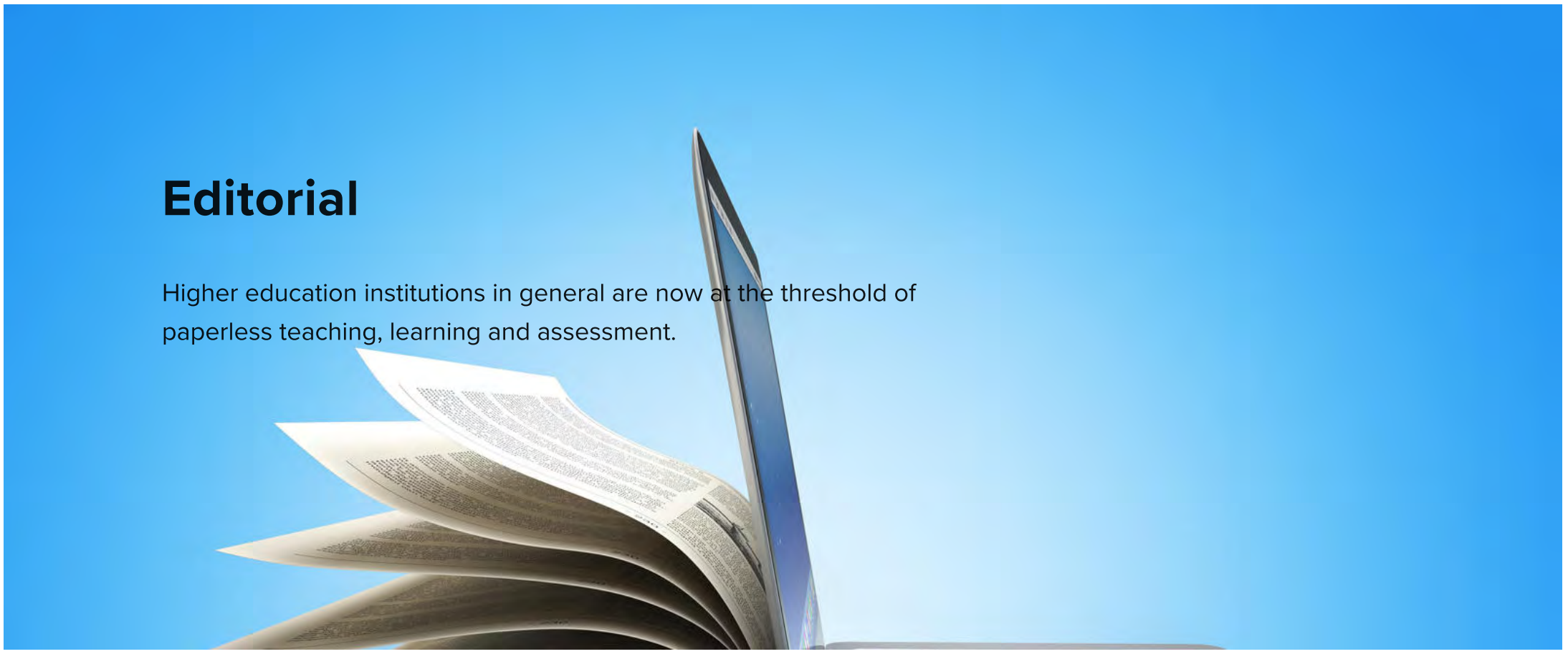

# Editorial

Higher education institutions in general are now at the threshold of paperless teaching, learning and assessment.

**Text:** Prof. Dr. phil. Sissel Guttormsen Schär, 12.04.2019

2018

In 2018 the IML moved to a new location at Mittelstrasse 43, into the beautifully renovated and monumental building, the former headquarter of the Swiss Federal Railway company (SBB). After having spent many years scattered over various places, it is a true joy now working all together in a university environment, along with more than 10 other institutes and institutions. At the new site, the IML is a part of a medical cluster from the Bern medical faculty, with the Institute of Social and Preventive Medicine (ISPM), the institute of family Medicine (BIHAM), the Clinical trial unit (CTU) and also the offices of the Graduate schools (GCB and GHS) are now next door. This is an enrichment for cooperation and efficient work. Within the new setting, one tradition remains: The IML is again located at the roof floor, with an astonishing view of the city and the Alps. Unfortunately, the view comes with the cost of blazing heated offices in the warm months of the year.

As the IML is an accentuated interdisciplinary institution, reflecting the field of ‘medical education’, we can now work with our team of physicians, social scientists, computer scientists, technicians, administrative staff and apprentices under one roof. The contiguity between application and research is both a characteristic and a requirement in the field of medical education, which is also reflected in our activities as a functional balance between delivering multiple services for assessment and teaching and as well as a broad range of research activities.

In 2018 both the faculty of medicine in Bern and the federal exam commission for human medicine decided to deliver all exams fully computerised in the near future. The implementation of this shift is an overarching process for our institute, not limited to assessment. Higher education institutions in general are now at the threshold of paperless teaching, learning and assessment. It is astonishing, that this shift has taken so many years, knowing that computers are a normal part of our lives since many decades. The IML has been preparing this shift intensively over the last years. In our activities, the digital transformation is reflected in new work processes, tighter data security regulations have impact on our organisation and data handling, expectations towards accessibility of systems and functions are increasing, tolerance for interruptions is decreasing. Processes are becoming more complex and the transparency for all stakeholders is inevitably decreasing. This is a challenging but necessary shift, in which the full realisation of the opportunities will still continue to evolve.

Another challenge in 2018 was the preparation and inauguration of a 2500 m2 new skills lab and a learning centre at the former Ziegler-Hospital for all practical clinical learning purposes of the medical faculty in Bern. Both facilities are operated by the IML in the name of the medical faculty. By way of example, modern video equipment was installed in more than 40 rooms to enable students and tutors to record or watch trainings and other activities. Students can manage and access their own videos from trainings, and give access to other peers and tutors for feedback purposes.

In the ongoing processes, it is inspiring to see that the new generation, our students, act as a relevant force in pushing innovation, challenging traditional teaching, and proactively suggesting changes. In my experience, our students are open to (technical) innovations related to medical education. With a steady increase of students to educate - the increase of “+100” students in Bern entered the curriculum in 2018 - the balance between what must be- and should be done in order to provide optimal educational conditions remains a challenge.

Sissel Guttormsen

**Prof. Dr. phil. Sissel Guttormsen Schär**
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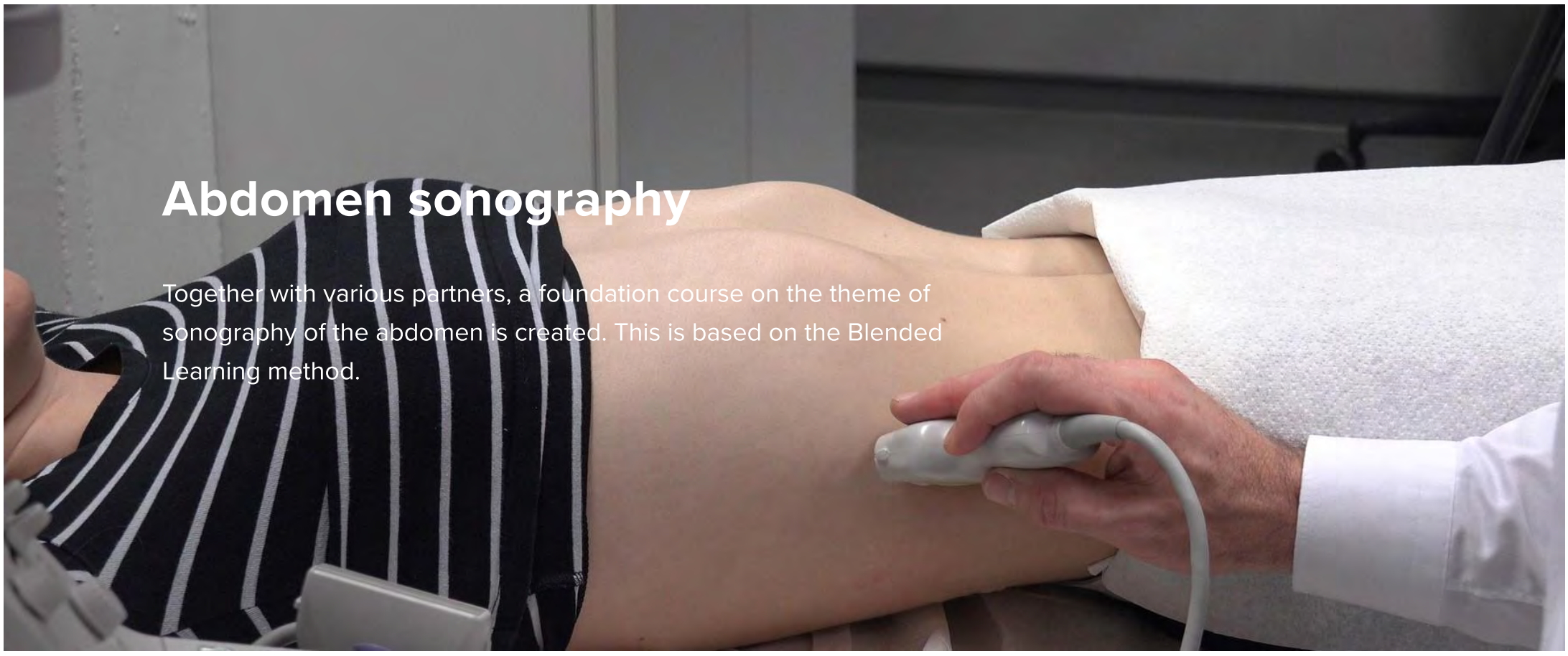

# Abdomen sonography

Together with various partners, a foundation course on the theme of sonography of the abdomen is created. This is based on the Blended Learning method.

2017 2018 Teaching Further training

The department for Education and Media (AUM) at the IML regularly produces videos for student teaching. Thanks to this specific know-how, the IML is a valued partner in various projects, for instance in the realization of a basic course on sonography of the abdomen (ultrasound examination of the stomach area).

The BIHAM (Bern Institute of Primary Health Care), together with various clinics at the Bern University Hospital and the group of Young Sonographers of the SGUM (Swiss Society for Ultrasound in Medicine), is creating this basic course, which is based on the blended learning method. The practical courses will be provided by peer tutors. In parallel, online learning modules will be developed for the purpose of preparation and repetition. The AUM will provide didactical advice for this project, and for the e-learning part will produce videos for a total of 12 modules.

The project is supported by the University of Bern as part of the Promotion of Innovative Teaching (FIL).

**Objective**

On the one hand, the course should enable all students to reach the learning goals defined in PROFILES (Principal Relevant Objectives and Framework for Integrative Learning and Education in Switzerland) (EPA 2u, SSP 167). On the other hand, interested students will be able to achieve the basic certificate of the SGUM.

**Partners**

**Bern Institute of Primary Health Care** (lead project)

**Swiss Society for Ultrasound in Medicine**

**Institute for Medical Education (IML)**
Giovanni Ferrieri
Dr. med. et MME Ulrich Woermann

**Project information**

**Running time:** Oct. 2017 – Dec. 2018

**Dr. med. et MME Ulrich Woermann-Walthert**
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# Acceptance of simulated physicians in communication training with SPs

Change of sides in communication training: from standardized/simulated patient to physician.

2018 | 2019 | Service | Further training

Within communication training in the 6th year of study, the handover is practiced with the so-called SBAR-schema – a concept for the standardization of the patient handover.

In this course, SPs (standardized/simulated patients) play the role of physicians. Through student surveys, the aim of this study is to determine how students experience this SP role-play and how authentic they deem the situation to be.

**Partner**

Dr. med. et MME Sonja Lüer
Senior Physician, University Children's Hospital of Bern

**Objective**

Publication

**Team**

Dr. med. et MME Ulrich Woermann
Dr. phil. Felix Schmitz
Prof. Dr. phil. Sissel Guttormsen

**Project information**

**Running time:** Feb. 2018 – June 2019

**Dr. med. et MME Ulrich Woermann-Walthert**
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# Accompanying research to support the “Mistake of the Week”

Since Spring 2018, we have been supporting the project “Mistake of the Week” of the Medical Clinics of the Klinikum Konstanz (Chief Physician Prof. H.-J. Kabitz and Prof. M. Schuchmann) through accompanying research.


2018 2019 Research

The project focuses on improving how to deal with own mistakes in the clinic, in order to learn as much as possible and draw meaningful conclusions from them.

**Objective**

Using focus groups of the involved parties, we investigate what influence this project has, and how its potential might be exploited even further.

**Partners**

Prof. H.-J. Kabitz et MME (Bern), Chief Physician, 2nd Medical Clinic, Klinikum Konstanz
Dr. med. F. Ulmer., Senior Physician, Intensive Medicine, Children’s Hospital of Bern

**Team**

Dr. phil. Rabea Krings
Prof. Dr. Dr. med. et MME Sören Huwendiek

**Project information**

**Running time:** 2018-2019

**Prof. Dr. Dr. med. et MME Sören Huwendiek**
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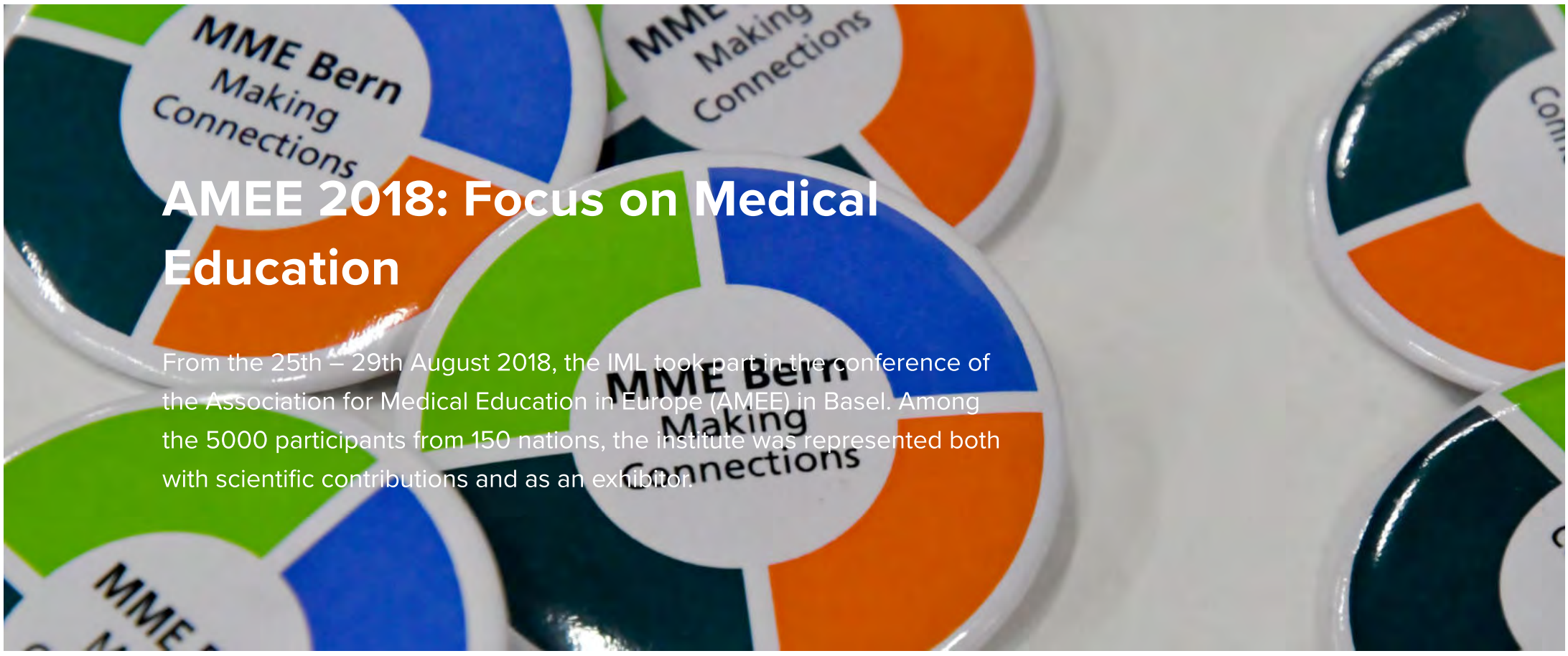



# AMEE 2018: Focus on Medical Education

From the 25th – 29th August 2018, the IML took part in the conference of the Association for Medical Education in Europe (AMEE) in Basel. Among the 5000 participants from 150 nations, the institute was represented both with scientific contributions and as an exhibitor.

**Text:** Prof. Dr. phil. Sissel Guttormsen Schär, Elisabeth Pacher Wiedmer, 11.04.2019

2018 Service Research Event

The conference was devoted to the theme of «Educating the future healthcare professional and the roles of the teacher». This meeting of experts has developed into the world's largest conference on "Medical Education". International experts on teaching in the healthcare and medical professions exchanged their ideas within scientific lectures, workshops, symposia and posters.

The participants from the IML presented current findings on various themes of teaching and assessment, which we have researched or developed within internal projects or in collaboration with our partners.

In total, 1 symposium, 2 pre-conference workshops, 1 workshop, 5 short communications and 3 posters were led, introduced and presented.

The contributions illuminated important success factors, current trends and developments in medical education as well as clinical training. A further focus was on quality assurance, development and innovation in assessment for education and further training. The numerous contributions provided differentiated and diverse insights both for teaching and for assessment. You can find an overview of all contributions here.

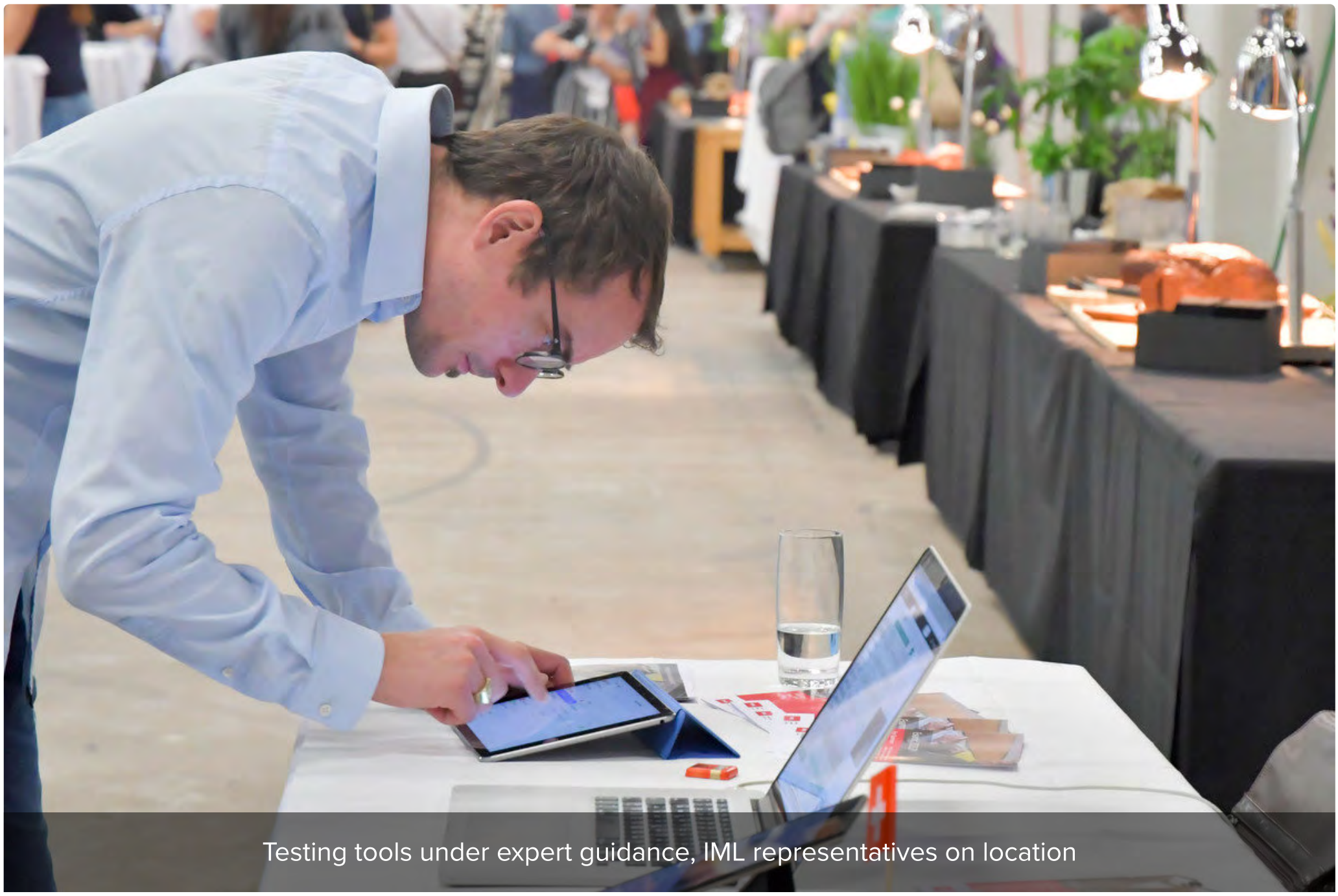
All participants had the opportunity to gather feedback from an international audience. «Exchanging views and information with an internationally recognized expert from the area of entrustable professional activities for an hour during the lunch break provided me with deeper insights than would be gained from reading research articles on the subject.» reported one IML participant of the conference.

**MME program Bern and Examic® Tools**


Sandra Trachsel (MME program director) in discussion


MME-buttons

Central to our exhibitions were the MME program and the Examic® Assessment Suite. As a means of identification, past and present MME participants, graduates and MME lecturers wore a special button marked with «MME-Bern Making Connections». The idea behind this was to spark conversation with interested parties and answer their questions on the program. The button also helped MME Bern alumni, students and lecturers to identify each other and network. The next MME program begins in February 2020. The deadline for applications is 31st October 2019.



Testing tools under expert guidance, IML representatives on location

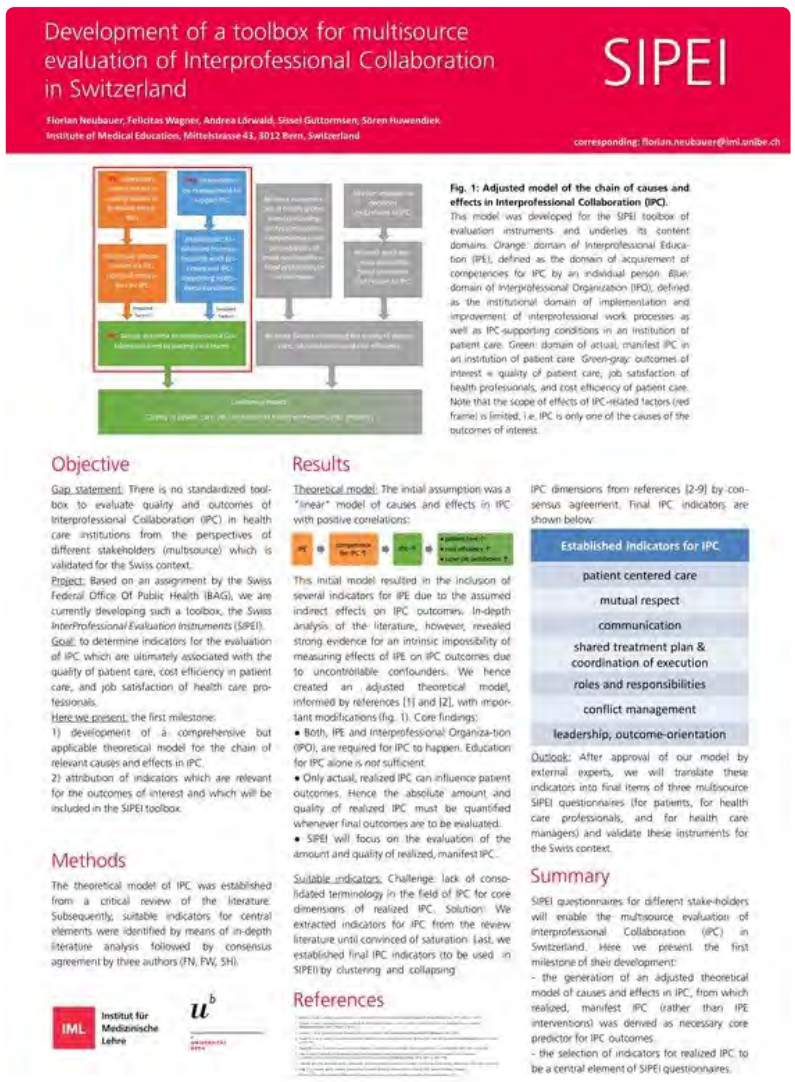

IML-booth


IML representative on the spot: Philippe Zimmermann, Elisabeth Pacher

The exams of our partners and clients are processed worldwide with the Examic® software, which was especially developed by the IML. The offer encompasses the Measured® products for written exams and EOSCE® for oral and practical exams.

At the information stand, interested parties were able to test the tools and consult with Philippe Zimmermann, the Head of the Software Development, Usability Consulting and IT Infrastructure Unit (ASCII). Information about further services of the institute, such as exam support, E-learning or usability, was also provided here.

# Examples of poster presentations



Development of a toolbox for multisource evaluation of Interprofessional Collaboration in Switzerland

SIPEI

Florian Neubauer, Felicitas Wagner, Andrea Lörwald, Sissel Guttormsen, Sören Huwendiek
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**Fig. 1: Adjusted model of the chain of causes and effects in Interprofessional Collaboration (IPC).**
This model was developed for the SIPEI toolbox of evaluation instruments and underlies its content domains. Orange: domain of Interprofessional Education (IPE), defined as the domain of acquirement of competencies for IPC by an individual person. Blue: domain of Interprofessional Organization (IPO), defined as the institutional domain of implementation and improvement of interprofessional work processes as well as IPC-supporting conditions in an institution of patient care. Green: domain of actual, manifest IPC in an institution of patient care. Green-gray: outcomes of interest = quality of patient care, job satisfaction of health professionals, and cost efficiency of patient care. Note that the scope of effects of IPC-related factors (red frame) is limited, i.e. IPC is only one of the causes of the outcomes of interest.

## Objective

Gap statement: There is no standardized toolbox to evaluate quality and outcomes of Interprofessional Collaboration (IPC) in health care institutions from the perspectives of different stakeholders (multisource) which is validated for the Swiss context.

Project: Based on an assignment by the Swiss Federal Office Of Public Health (BAG), we are currently developing such a toolbox, the *Swiss InterProfessional Evaluation Instruments* (SIPEI).

Goal: to determine indicators for the evaluation of IPC which are ultimately associated with the quality of patient care, cost efficiency in patient care, and job satisfaction of health care professionals.

Here we present: the first milestone:
1) development of a comprehensive but applicable theoretical model for the chain of relevant causes and effects in IPC.
2) attribution of indicators which are relevant for the outcomes of interest and which will be included in the SIPEI toolbox.

## Methods

The theoretical model of IPC was established from a critical review of the literature. Subsequently, suitable indicators for central elements were identified by means of in-depth literature analysis followed by consensus agreement by three authors (FN, FW, SH).

## Results

Theoretical model: The initial assumption was a "linear" model of causes and effects in IPC with positive correlations:

This initial model resulted in the inclusion of several indicators for IPE due to the assumed indirect effects on IPC outcomes. In-depth analysis of the literature, however, revealed strong evidence for an intrinsic impossibility of measuring effects of IPE on IPC outcomes due to uncontrollable confounders. We hence created an adjusted theoretical model, informed by references [1] and [2], with important modifications (fig. 1). Core findings:

- Both, IPE and Interprofessional Organiza-tion (IPO), are required for IPC to happen. Education for IPC alone is *not* sufficient.
- Only actual, realized IPC can influence patient outcomes. Hence the absolute amount and quality of realized IPC must be quantified whenever final outcomes are to be evaluated.
- SIPEI will focus on the evaluation of the amount and quality of realized, manifest IPC.

Suitable indicators: Challenge: lack of consolidated terminology in the field of IPC for core dimensions of realized IPC. Solution: We extracted indicators for IPC from the review literature until convinced of saturation. Last, we established final IPC indicators (to be used in SIPEI) by clustering and collapsing IPC dimensions from references [2-9] by consensus agreement. Final IPC indicators are shown below:

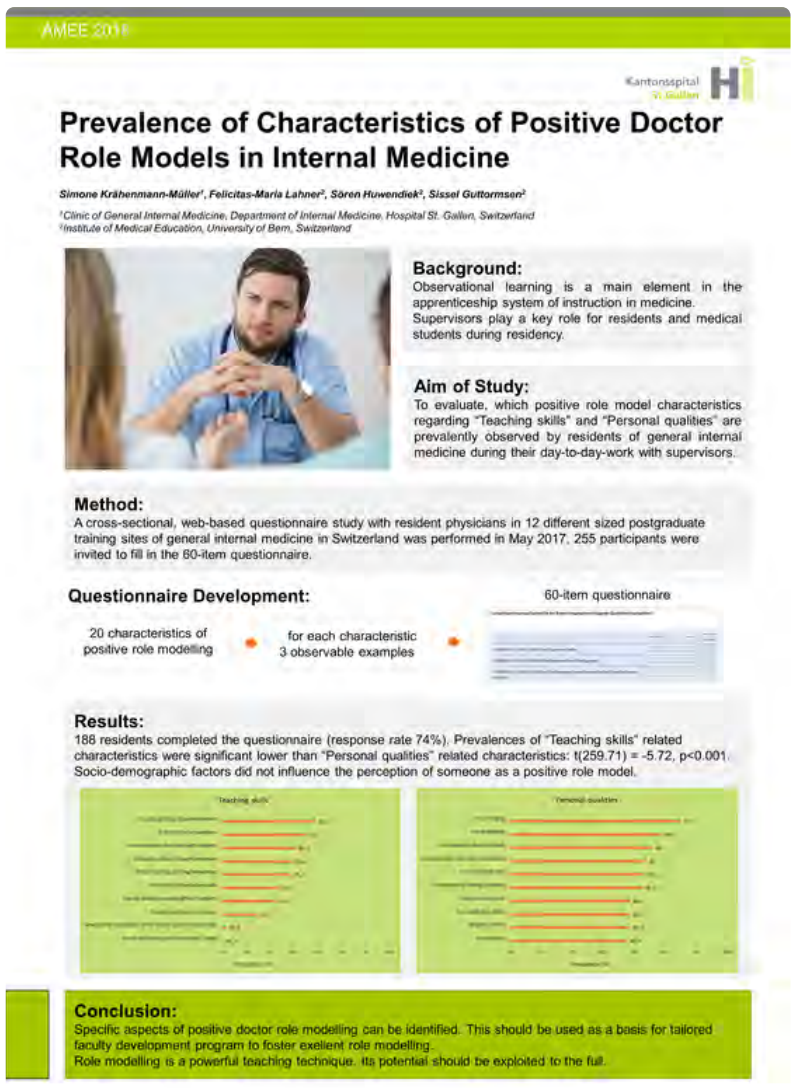
| Established indicators for IPC |
| --- |
| patient centered care |
| mutual respect |
| communication |
| shared treatment plan & coordination of execution |
| roles and responsibilities |
| conflict management |
| leadership, outcome-orientation |

Outlook: After approval of our model by external experts, we will translate these indicators into final items of three multisource SIPEI questionnaires (for patients, for health care professionals, and for health care managers) and validate these instruments for the Swiss context.

## Summary

SIPEI questionnaires for different stake-holders will enable the multisource evaluation of interprofessional Collaboration (IPC) in Switzerland. Here we present the first milestone of their development:
- the generation of an adjusted theoretical model of causes and effects in IPC, from which realized, manifest IPC (rather than IPE interventions) was derived as necessary core predictor for IPC outcomes.
- the selection of indicators for realized IPC to be a central element of SIPEI questionnaires.

## References



AMEE 2018

Kantonsspital St. Gallen

Prevalence of Characteristics of Positive Doctor Role Models in Internal Medicine

Simone Krähenmann-Müller[1], Felicitas-Maria Lahner[2], Sören Huwendiek[2], Sissel Guttormsen[2]
[1]Clinic of General Internal Medicine, Department of Internal Medicine, Hospital St. Gallen, Switzerland
[2]Institute of Medical Education, University of Bern, Switzerland

**Background:**
Observational learning is a main element in the apprenticeship system of instruction in medicine. Supervisors play a key role for residents and medical students during residency.

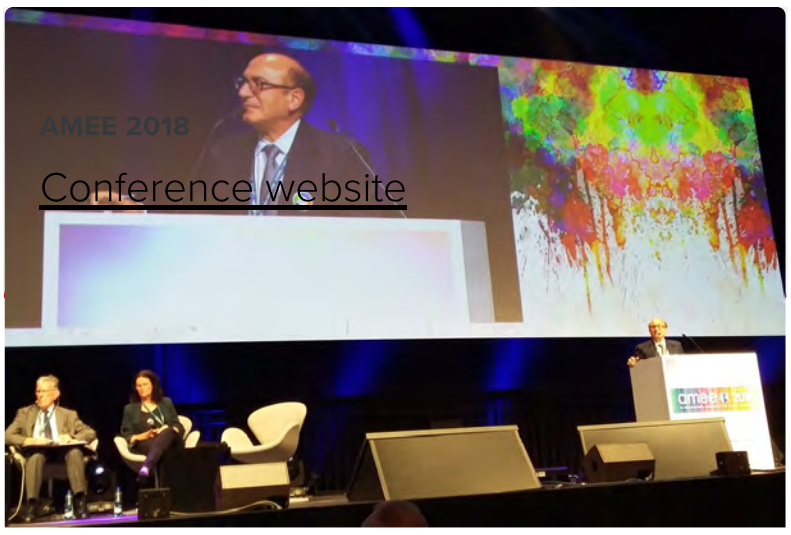
**Aim of Study:**
To evaluate, which positive role model characteristics regarding "Teaching skills" and "Personal qualities" are prevalently observed by residents of general internal medicine during their day-to-day-work with supervisors.

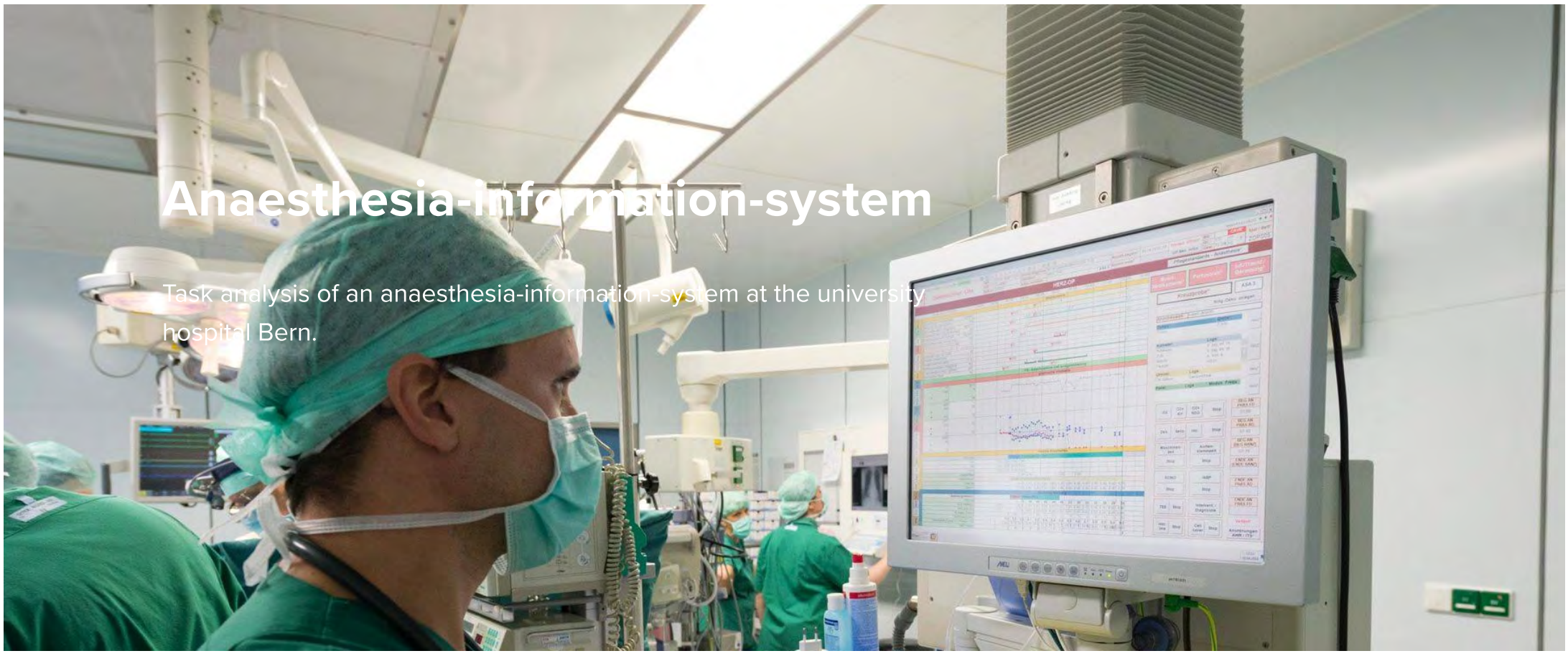
**Method:**
A cross-sectional, web-based questionnaire study with resident physicians in 12 different sized postgraduate training sites of general internal medicine in Switzerland was performed in May 2017. 255 participants were invited to fill in the 60-item questionnaire.

**Questionnaire Development:**
20 characteristics of positive role modelling → for each characteristic 3 observable examples → 60-item questionnaire

**Results:**
188 residents completed the questionnaire (response rate 74%). Prevalences of "Teaching skills" related characteristics were significant lower than "Personal qualities" related characteristics: $t(259.71) = -5.72$, $p<0.001$. Socio-demographic factors did not influence the perception of someone as a positive role model.

**Conclusion:**
Specific aspects of positive doctor role modelling can be identified. This should be used as a basis for tailored faculty development program to foster exellent role modelling.
Role modelling is a powerful teaching technique. Its potential should be exploited to the full.


AMEE 2018
Conference website



# Anaesthesia-information-system

Task analysis of an anaesthesia-information-system at the university hospital Bern.

2017 2018 Service Usability

User of the currently productive anaesthesia-information-system (AIS) at the Inselspital reported different problems in the workflows and the information visualization of the system. Through a task analysis during the use of AIS we were commissioned to optimize the usability of the system in respect to efficiency and effectiveness.

**Aims**

- Detailed analysis of tasks conducted with AIS
- Optimization of the interaction design and information visualization according to ISO 9241-11

**Ordering customer**

Inselspital Bern, Universitätsklinik für Anästhesiologie und Schmerztherapie

**Team**

Felix Schmitz, PhD
Stephan Schallenberger, MAS HCID

**Project information**

**Project period:** 04/2017 - 06/2018

**Stephan Schallenberger**
Interaction designer, Senior usability expert

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# Assessment in Cardiopulmonary Resuscitation Training

PhD regarding “Assessment in Cardiopulmonary Resuscitation Training”.

2017 2018 2019 Assessment Research Further training

The goal of this project (PhD theses) is to improve cardiopulmonary resuscitation training with a special focus on outcome assessment.

This PhD project consists of three studies:

1. The primary aim of the first study is to clarify the maximum number of participants an instructor can oversee without missing serious errors of a single participant.

2. The primary aim of the second study is to find out which variant of summative assessment is better to test the participants’ knowledge and skills of a Life support course.

3. The primary aim of the third study is to find out which variant of summative assessment is perceived by course participants as testing their leadership competency best, immediately after the comparison as well as 1 year later to identify any long-term effects on the students.

**Objective**

The goal of this PhD is to better understand relevant assessment issues regarding undergraduate cardiopulmonary resuscitation training.

**Team**

Sabine Nabecker, MD (PhD-Student)
Prof. Dr. R. Greif (Thesis Advisor)
Prof. Dr. Dr. med et MME S. Huwendiek (Co-Referee)
PD Dr. med. Lorenz Theiler (additional advisor)

**Partner**

Graduate School for Health Sciences

**Project Information**

Project period: 10/2017 - 10/2020

**Prof. Dr. Dr. med. et MME Sören Huwendiek**
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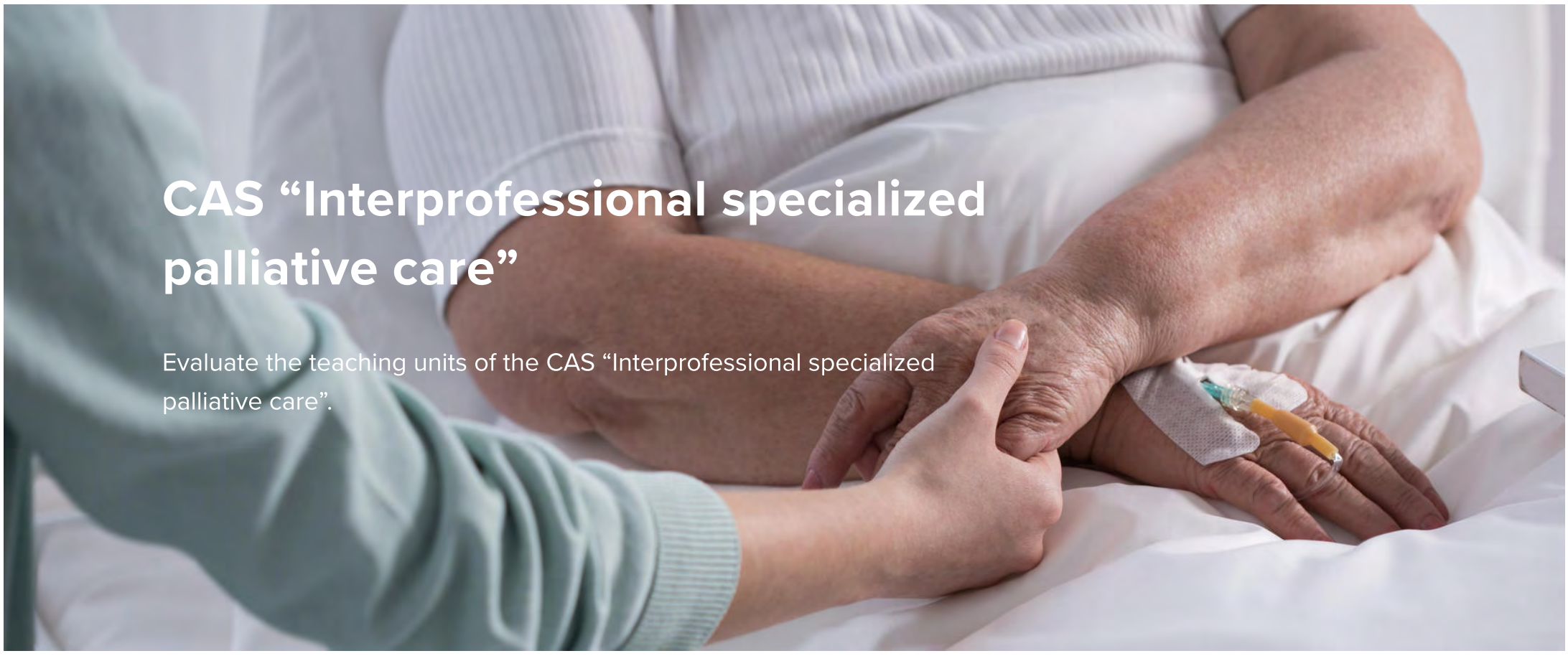

# CAS “Interprofessional specialized palliative care”

Evaluate the teaching units of the CAS “Interprofessional specialized palliative care”.

2018 Service Evaluation

The CAS (Certificate of Advanced Studies) study program “Interprofessional specialized palliative care” is now also offered in Bern (since 2017). To ensure the quality of the training, the individual courses are evaluated by the participants.

**Objective**

The purpose of the evaluation lies in the quality assurance of the CAS study program.

**Ordering customer**

Prof. Dr. med. Steffen Eychmüller, University Center for Palliative Care Inselspital, University Hospital Bern

**Team**

Dr. phil. Felicitas Wagner
Barbara Wirz
Brigitte Faivre

**Project information**

**Running time:** 1/2018 – 12/2018

**Dr. phil. Felicitas Lony Wagner**
Scientific collaborator

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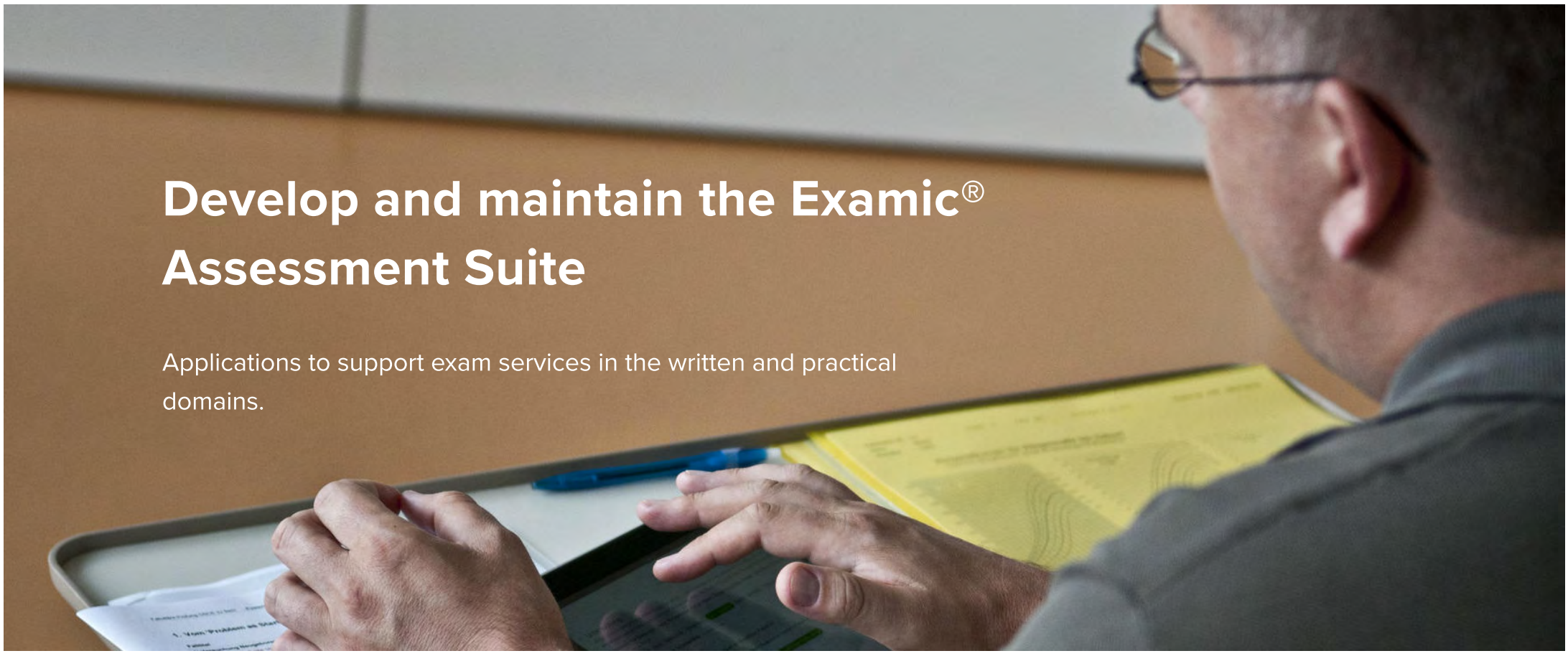

# Develop and maintain the Examic® Assessment Suite

Applications to support exam services in the written and practical domains.

2017 2018 2019 Assessment Service Development Examic

Develop and maintain various applications to support exam services in the written and practical domains. The software package is also used for the Federal Licensing Exams and is implemented in various other exams.

**Objective**

Support the whole assessment cycle for written (Measured®) and practical (*E*OSCE®) exams through user-friendly applications.

**Ordering customer**

Federal Office of Public Health
Faculty of Medicine, University of Bern
Institute for Medical Education
Various other partners

**Team**

Hansmartin Geiser, Jonathon Duss, Stephan Schallenberger (MAS in HCID), Rafael Beck, lic. phil. Lukas Rieder, Kai Gerszewski, Roger Meier, Michael Stämpfli, Samuel Tononi, Raphael Laubscher, Axel Hahn, Daniel Schüler, Dr. sc. ETH Markus Dahinden, Dr. sc. ETH Philippe Zimmermann

**Project information**

Running time: since 2012

**Read more**

Project-Website Examic® Assessment Suite

**Dr. sc. ETH Philippe Zimmermann**
Head of ASCII Department

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# Digitalization of the SP database

The database of standardized/simulated patients (SPs) will be brought up-to-date and will stay abreast of the developments of the program.

2017 2018 Service

As standardized/simulated patients (SPs) are being deployed with increasing frequency for medical assessments and courses, an improved planning of their use in the various projects is necessary.

**Aims**

All paper documents will be digitalized with the FileMaker tool, rendering them accessible to all SP trainers with filter functions, which will enable more efficient operational planning.

**Target group**

SP trainers

**Team**

Dario Zaugg
Adrian Michel
Regina Christen
Dr. med. et MME Beate Brem
Dr. med. Sandra Wüst
Dr. med. et MME Daniel Bauer
Dr. med. et MME Kai Schnabel
Dr. med. et MME Ulrich Woermann

**Project information**

**Running time:** March 2017 - March 2018


# Evaluation to accompany the “Steigbügel” project

Supporting professional reintegration following parental leave.

2017 2018 2019 2020 Service Evaluation Further training

The project aims to support the professional reintegration of physicians who have been away from their profession for a longer period of time for family reasons. Over 12 months, the participants complete a residency program and are supported by various offers (e.g. coaching).

**Objective**

The purpose of the accompanying evaluation is to check the success of the project and to identify factors for success.

**Ordering customer**

medical women Switzerland (mws)

**Team**

Dr. phil. Felicitas Wagner
lic. phil. Barbara Zurbuchen
Prof. Dr. phil. Sissel Guttormsen
Prof. Dr. Dr. med. et MME Sören Huwendiek

**Project information**

**Running time:** 5/2017 – 2/2022

**Dr. phil. Felicitas Lony Wagner**
Scientific collaborator

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# Evaluation tools: Interprofessional undergraduate and postgraduate education

Develop tools to evaluate interprofessional undergraduate and postgraduate education and professional practice on behalf of the Federal Office of Public Health.

2017 2018 2019 Service Development Evaluation Further training

In response to the call from the Federal Office of Public Health (BAG), we were comissioned to examin how relevant effects of interprofessional undergraduate and postgraduate education, as well as interprofessional work practice, can be effectively, efficiently, and economically measured and evaluated in the health care system in Switzerland. To make these measurements possible a toolbox "swiss interprofessional evaluation instrument" (SIPEI) will be developed.

**Objective**

Develop evaluation tools to assess interprofessional undergraduate and postgraduate education and professional practice in the framework of five work packages on behalf of the BAG.

**Team**

Dr. phil. F. Wagner
Dr. med. Dr. phil. F. Neubauer
Prof. Dr. phil. S. Guttormsen
Dr. phil. A. Lörwald
Dr. med. et MME J. Meng
Dr. med. C. Bachmann
lic. phil. B. Zurbuchen
Prof Dr. Dr. med. et MME S. Huwendiek (main applicant)

**Project information**

**Running time:** 2017-2019

Funding program Interprofessionality in the health care system, annual report 2017 (details on the IML project, p. 10; in D)

# Fostering communication skills in health profession students

PhD Thesis about the effectiveness of worked examples and written reflections.

2017 2018 Research

**Objective**

This Thesis examines the learning effects of highly structured demonstrations (worked examples) of communication tasks and written reflections on task-based actions on students' patient-centred communication performances.

**Partner**

Graduate School for Health Sciences

**Team**

Felix Schmitz (PhD student)
Prof. Dr. phil Sissel Guttormsen (Thesis advisor)
Prof. Dr. Jörg Hupfeld-Heinemann (co-advisor)
Further research collaborators of the IML

**Project information**

Running time: 2013 -2018

The thesis has been successfully defended in May.

**Dr. phil. Felix Schmitz**
Scientific collaborator

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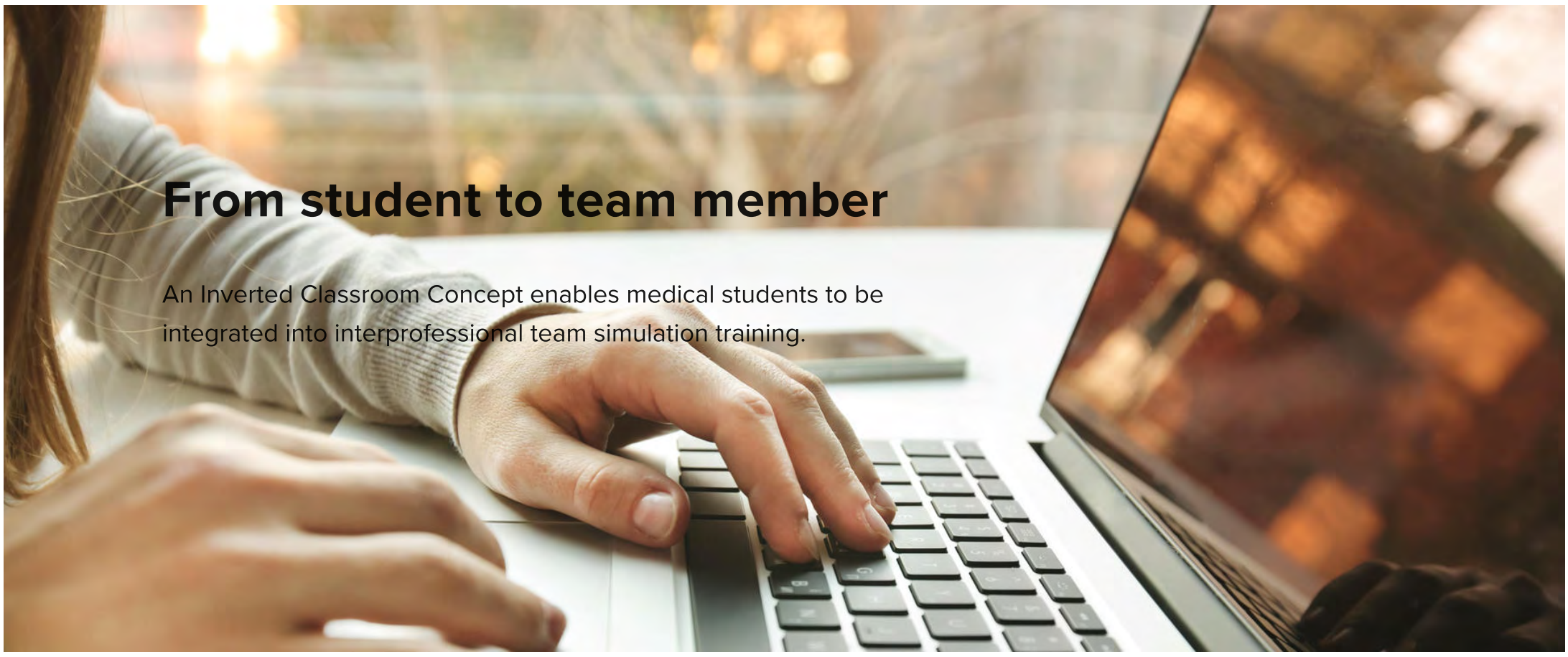

# From student to team member

An Inverted Classroom Concept enables medical students to be integrated into interprofessional team simulation training.

2018 | Service | Further training

In this  project, the team simulation event is adapted for undergraduate medical students applying the principles of the Inverted Classroom Method (ICM) to perform better as a team in the emergency room  situation.

In the ICM, knowledge acquisition is carried out independently by the students with support from online tool, offering preparation materials. In the subsequent attendance phase, the application of knowledge is formatively evaluated, a discussion of what has been learned is moderated, and misunderstood concepts and principles are corrected if necessary. Among other things, the learning outcomes from the reference work Swiss Catalogue of Learning Objectives are addressed (teamwork, communication).

**Objective**

An efficient acquisition of non-technical competences and improved integration of students into interprofessional team (physiciens & nurses) simulations in emergency medicine.

**Partner**

Department of Anesthesiology and Pain Therapy (Bern University Hospital)

**Funding**

University of Bern, Promotion of innovative teaching (FIL)

**Team**

Dr. med. et MME Daniel Bauer
Dr. med. et MME Kai Schnabel
Dr. med. Thomas Sauter
PD Dr. med. Wolf Hautz

**Project information**

Running time: Jan. - Dec. 2018


# Ilias Learning Management System

Usability evaluation of the Ilias Learning Management System.

2017 2018 Service Usability

The University of Bern is integrating its medical faculty curriculum into the central curriculum IT infrastructure and has commissioned major changes to the Ilias LMS. We evaluated the usability of a first version of the extended Ilias with 10 students and lecturers.

**Aims**

- Test the usability of the new features of Ilias
- Proof of concept if the major use-cases of students and lecturers of the medical faculty are feasible

**Ordering customer**

University of Bern

**Team**

Stephan Schallenberger, MAS HCID
Dr. sc. ETH Philippe Zimmermann

**Project information**

**Project period:** 12.2017 - 02.2018

**Dr. sc. ETH Philippe Zimmermann**
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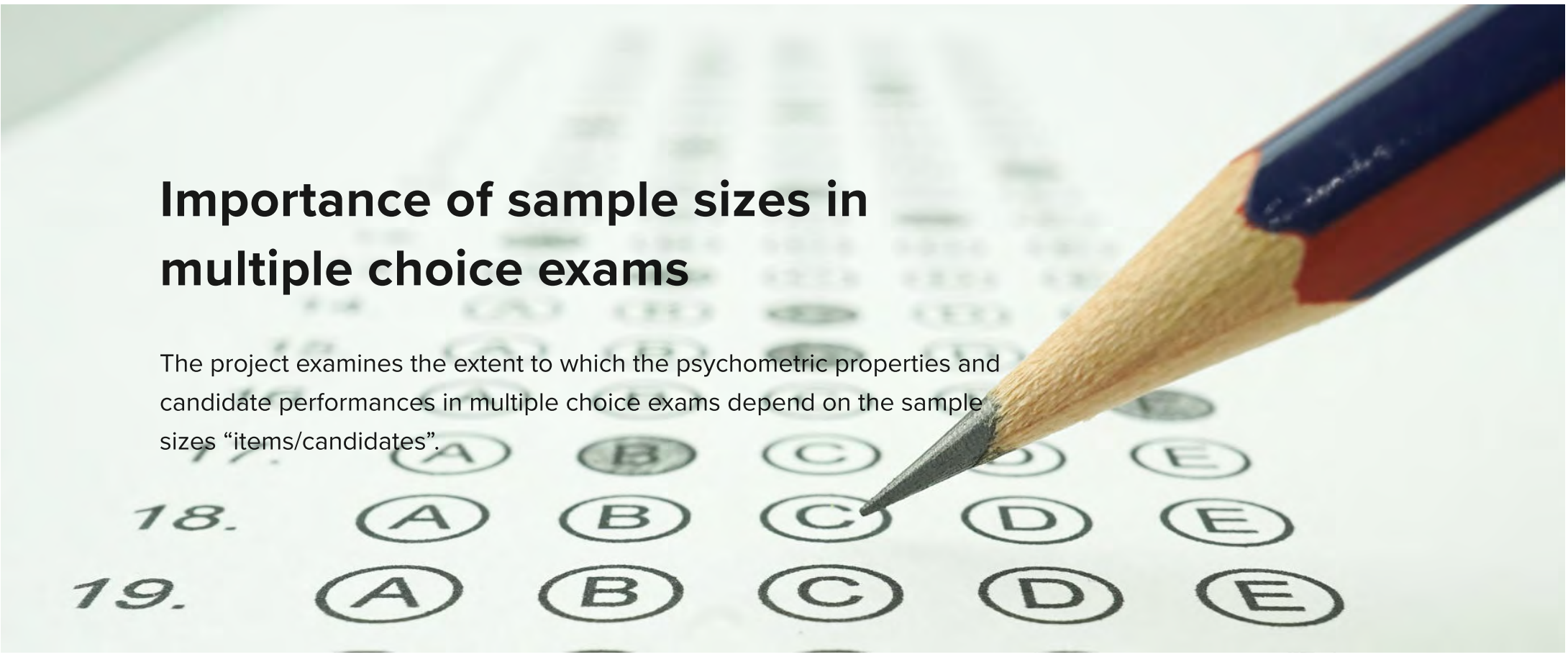


# Importance of sample sizes in multiple choice exams

The project examines the extent to which the psychometric properties and candidate performances in multiple choice exams depend on the sample sizes “items/candidates”.

2016 2017 2018 Assessment Service Research

In exam analyses with a small number of candidates and/or items, the validity of the psychometric properties and/or of candidate performances in terms of interpretation is at times not sufficiently considered. By means of bootstrapping, we therefore address the question of from what number of candidates/items the psychometric properties/performances can be seen as reliable.

**Objective**

The results should form the basis for a discussion of the minimum number of candidates/items from which interpretations in multiple choice exams are permissible.

**First results**

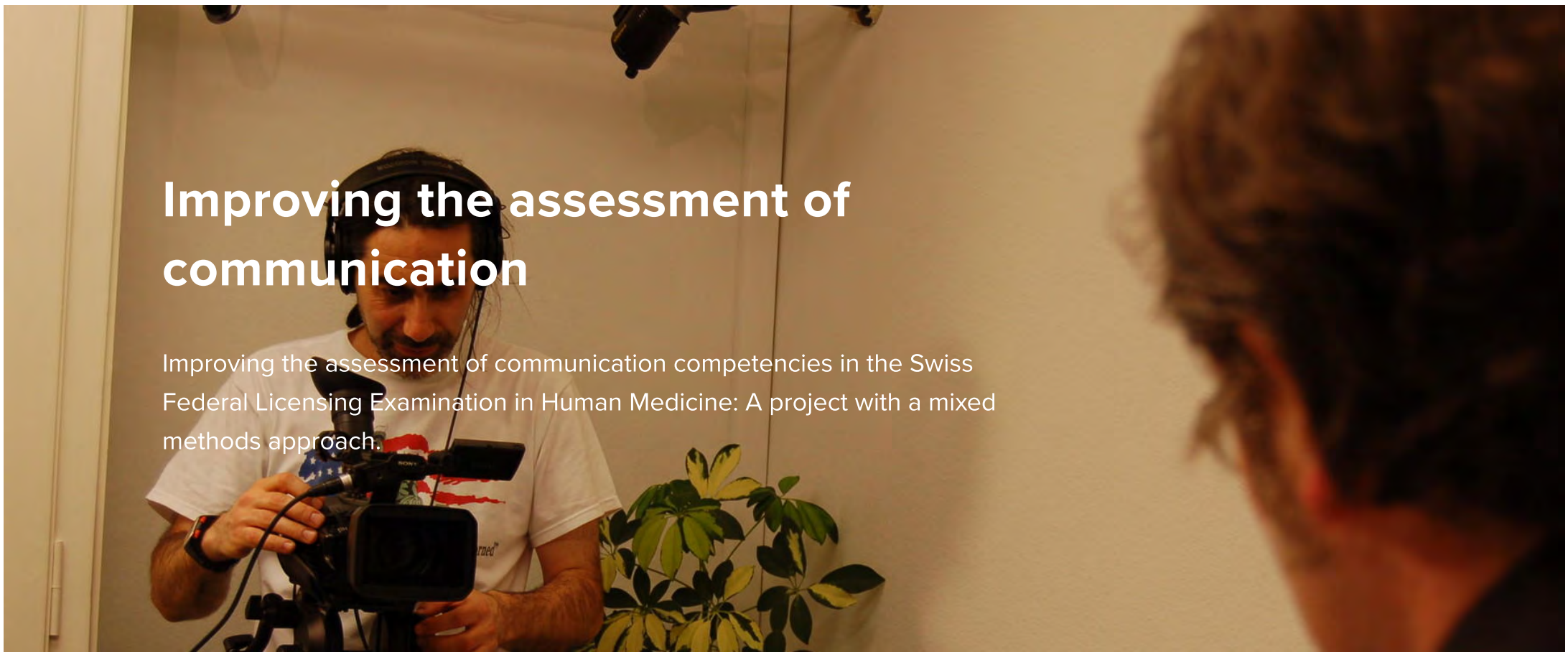
Presentation at the GMA 2016 in Bern:
Hofer, Rainer; Huwendiek, Sören (16th September 2016). [Psychometric properties of multiple choice exams depending on the number of candidates and items: From which sample sizes are the psychometric properties reliable?]: In: Jahrestagung GMA. Abstractband. Bern. 14.-17.09.2016 10.3205/16gma175
Literature reference: Efron B. Bootstrap methods: another look at the jackknife. Ann Statist. 1979;7:1-26 DOI: 10.1214/aos/1176344552

**Team**

Dr. phil. Rainer Hofer
David Sichau
Prof Dr. Dr. med. et MME Sören Huwendiek

**Project information**

**Running time:** 9/2014 – 01/2018



# Improving the assessment of communication

Improving the assessment of communication competencies in the Swiss Federal Licensing Examination in Human Medicine: A project with a mixed methods approach.

2016 2017 2018 Assessment Service

In this quality improvement project for the Swiss Federal Licensing Examination in Human Medicine it is investigated how the assessment of communication competencies can be improved with help of five work packages (needs assessment, symposium, development of new stations, improved rater training, pilot investigation).

**Aims**
The goal of this project is to further improve the assessment of communication competencies in the framework of the Clinical Skills part of the Federal Licensing Examination.

**Ordering customer**
Exam commission of the Swiss Federal Licensing Exam

**Team**
**Basel:** Dr. med. Silke Biller
**Bern:** Dr. med. Cadja Bachmann, Dr. med. et MME Berendonk Christoph, lic. phil., MAS Ev, Feller Sabine, Dr. med. Glauser Claudia, Prof. Dr. Dr. med. et MME Huwendiek Sören (principal submitter) Lörwald Andrea (PhD-Studierende), Dr. med. et MME Schnabel Kai (principal submitter), Dr. med. et MME Woermann Ulrich
**Geneva:** Dr. Noëlle Junod Perron
**Lausanne:** Prof. Bonvin Raphael, Dr. med. Matteo Monti
**Zürich:** Dr. Jan Breckwoldt, Dr. med. Ernst Jünger, Dr. med. Kropf Roger

**Project information**

**Project period:** 2014 – 2018

**Funding:** Federal Office of Public Health (FOPH)


11.04.2019

2018 2019 Event

**Swiss Conference on Standardized Patients and Simulation in Health Care**

SPSIM is a biennial, international conference on the use of Standardized Patients and Simulation in undergraduate and postgraduate education of health professionals.

The slogan of SPSIM 2019 is:

**Bridging the Gap – Venturing into the Unknown**

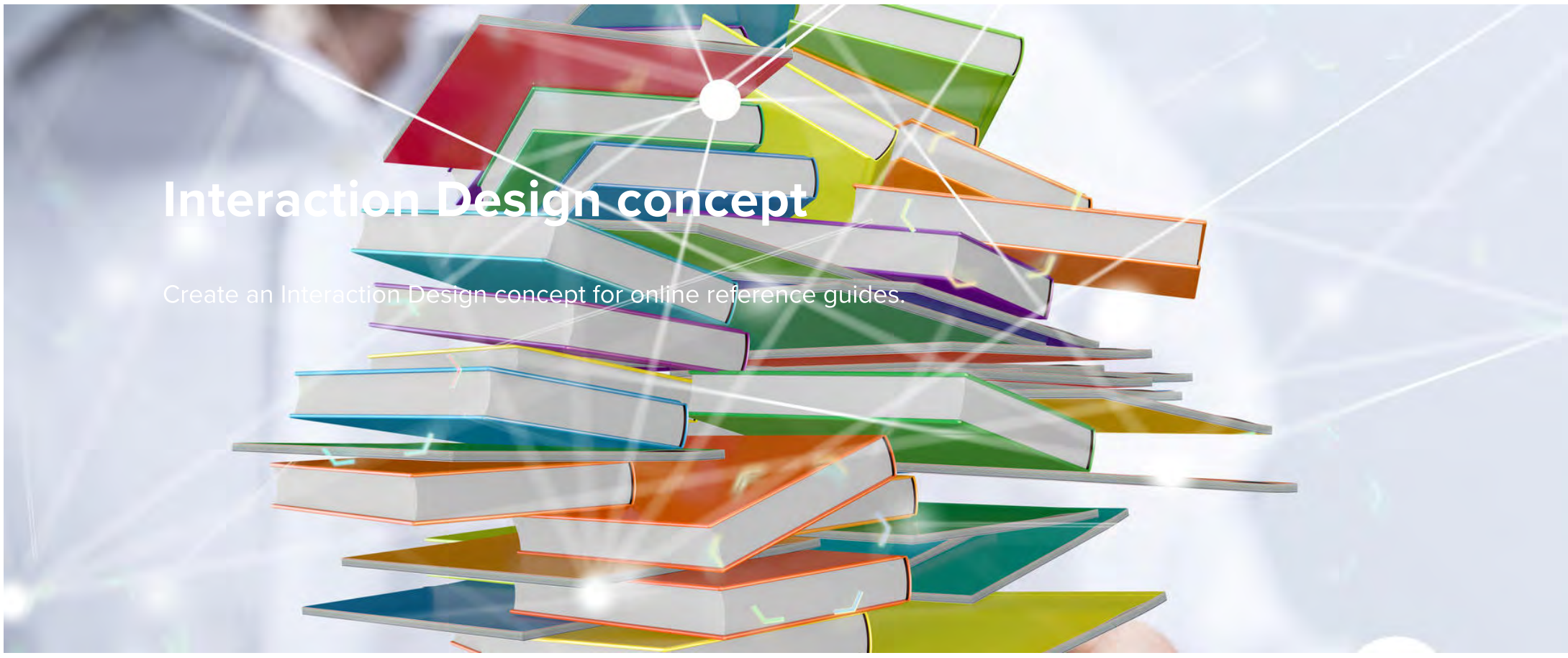
Download Flyer

For further information please visit our website: www.spsim.ch

We look forward to seeing you in Bern!

**Read more**

SPSIM Website



# Interaction Design concept

Create an Interaction Design concept for online reference guides.

2017 2018 2019 Service Usability

How to display data/information is a fundamental issue in professional life. We seek to learn from various fields in this case from the geology.

Development of a new interaction design concept for three legal online reference sites (DM.01-AV, GRUDA-AV and RECHT) of the Canton Bern.

**Aims**

- Easier access to the contents oft he reference guides
- New information architecture
- Better search functionality for complex searches
  New technical platform

**Ordering customer**

Amt für Geoinformation des Kantons Bern

**Team**

Stephan Schallenberger, MAS in HCID
Rafael Beck, MAS HCID
Dr. sc. ETH Philippe Zimmermann

**Project information**

Project period: 09/2017 - 12/2019

**Stephan Schallenberger**
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# Interaction design for a Research Data Repository (RDR)

The library of the University of Bern is setting up a new Research Data Repository.

2018 | Service | Development | Usability

The library of the University of Bern is setting up a new Research Data Repository. We designed the interaction design of some major screens of the new application.

**Aims**

- IxD concept for the application
- Design of some major screens
- Design of detail dialogues

**Ordering customer**

University of Bern, University Library

**Team**

Rafael Beck, MAS HCID
Dr. sc. ETH Philippe Zimmermann

**Project information**

**Project period:** 02/2018 - 08/2018

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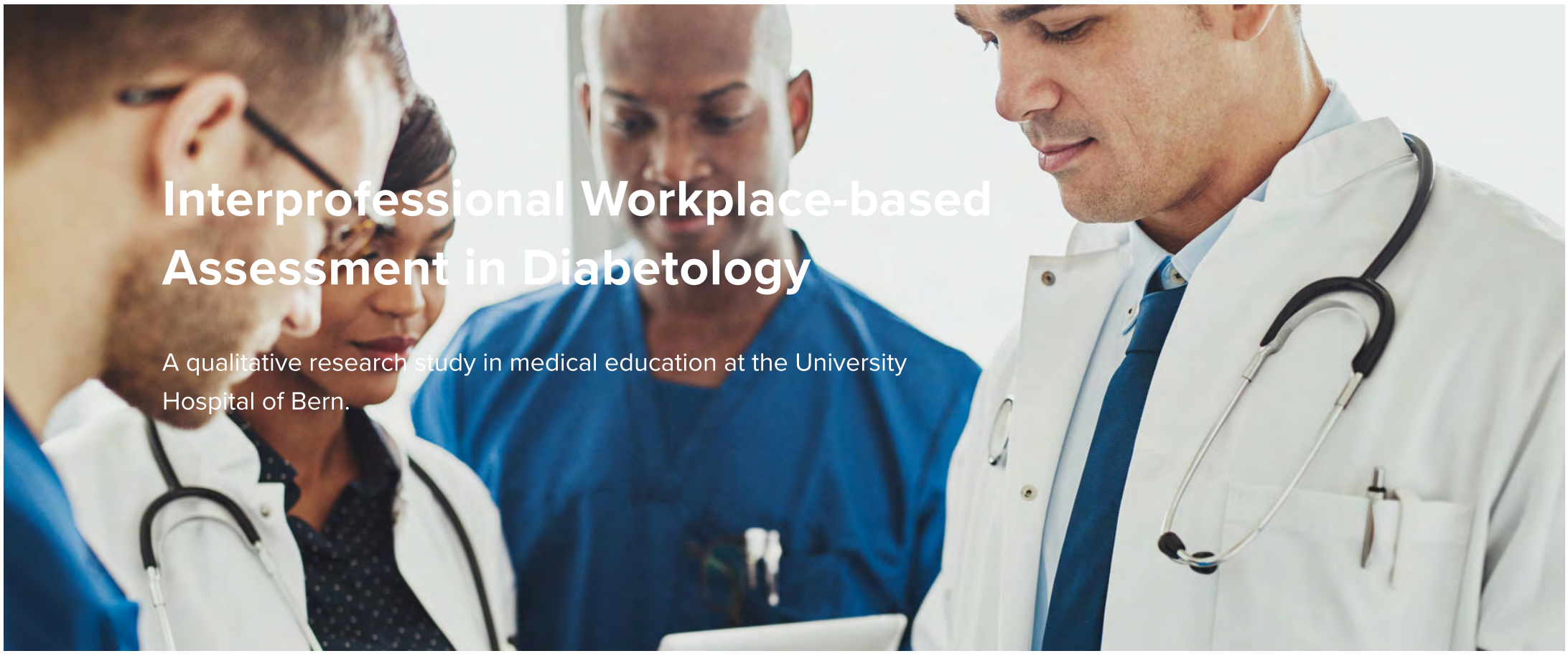

# Interprofessional Workplace-based Assessment in Diabetology

A qualitative research study in medical education at the University Hospital of Bern.

2017 2018 Assessment Research Further training

The care and treatment of patients in endocrinology is inherently interprofessional in nature. Therefore, residents should receive feedback not only from physicians, but also other health-care professionals. This interprofessional feedback can be carried out in the framework of workplace-based assessment.

This project refers to the Master's thesis within the Master of Medical Education MME of Dr. med. Katrin Feller, Department of Diabetes, Endocrinology, Clinical Nutrition and Metabolism, Inselspital, Bern University Hospital, Bern.

**Objective**

The aim of the project is to introduce interprofessional workplace-based assessments in the Department of Diabetes, Endocrinology, Clinical Nutrition & Metabolism as a meaningful component of the postgraduate training of residents.

**Team**

Dr. med. Katrin Feller (MME student)
Dr. med. et MME Christoph Berendonk (thesis supervisor)
Prof. Dr. phil. Sissel Guttormsen

**Project information**

**Running time:** 2017-2018

**Dr. med. et MME Christoph Berendonk**
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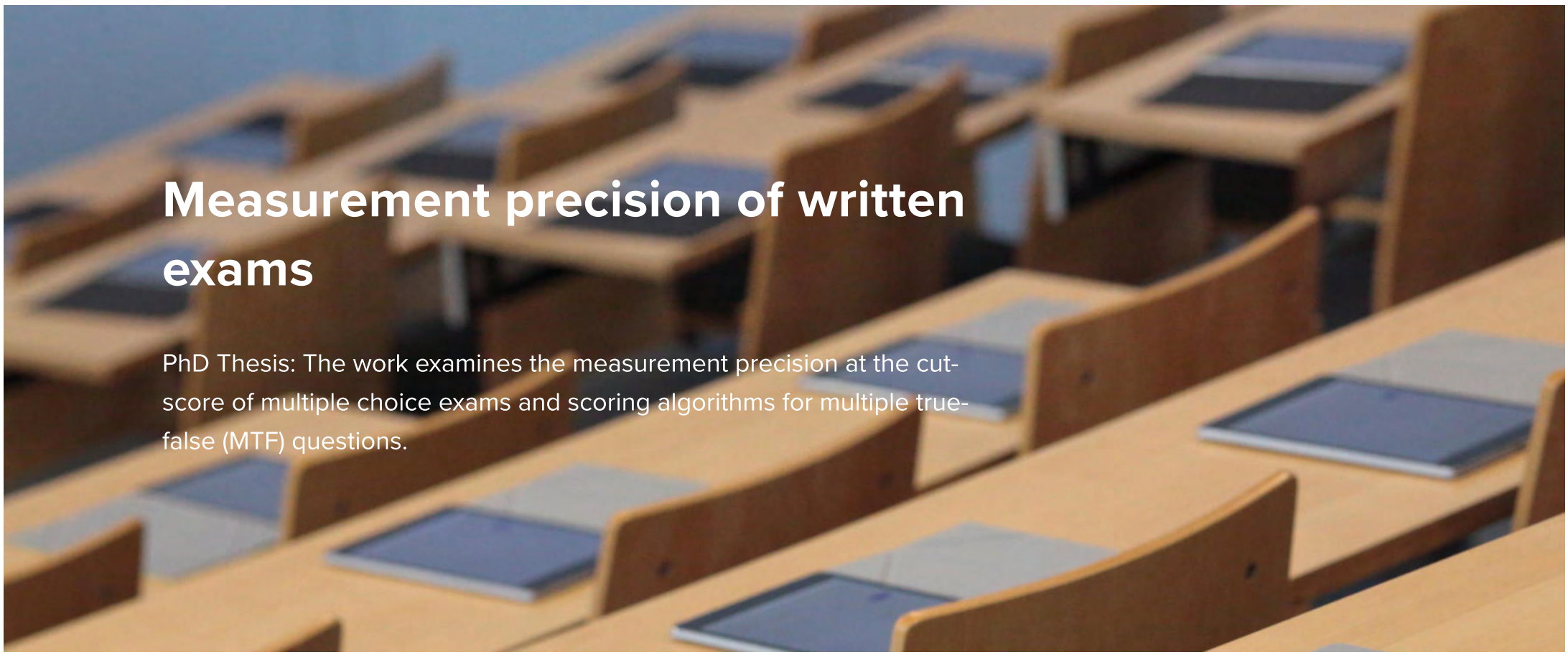

# Measurement precision of written exams

PhD Thesis: The work examines the measurement precision at the cut-score of multiple choice exams and scoring algorithms for multiple true-false (MTF) questions.

2016 2017 2018 Assessment Research Teaching

We examine how the measurement precision of multiple-choice exams at the cut-score can be more precisely determined by using so-called conditional reliability. Moreover, we focus on MTF questions, a type of multiple choice question in which several answers can be correct. Due to the multiple response, various scoring algorithms are possible. We examine what influence the scoring algorithm has, among other factors, on the measurement precision of the exam.

**Objective**

The aim of the PhD Thesis is to systematically examine the measurement precision in written exams in order to further develop the procedure of determining measurement precision at the cut-score and to improve the measurement precision through the use of suitable scoring algorithms.

**Partner**

Graduate School for Health Sciences

**Team**

Felicitas-Maria Lahner (PhD student)

Prof. Dr. Dr. med et MME Sören Huwendiek (thesis supervisor) and other employees of the IML

**Project information**

**Running time:** 09/2014 – 03/2018

The thesis has been successfully defended in March.

**Dr. phil. Felicitas-Maria Lahner**
Scientific collaborator

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2016 2017 2018 2019 2020 Service Development Further training

To enable continued use of these very popular learning programs in the future, a transition from both a technological and creative perspective is essential.

**Objective**

Our online learning programs need to comply with the latest standards and need to be seamlessly usable with the whole range of modern devices. New features like a comprehensive search function or deep linking improve the user experience.

Through the development of an author system for  learning content also the creation of complex didactic scenarios is supported.

**Ordering customer**

Faculty of Medicine, Bern

**Team**

**Institute of Anatomy, University of Bern**
PD Dr. med. Gudrun Herrmann

**IML**
Dr. med. et MME Ulrich Woermann
Samuel Heinzmann
Andrea Gottsponer

**Project information**

Running time: 2016 - 2020

**Dr. med. et MME Ulrich Woermann-Walthert**
Scientific collaborator, Head of Group learning media

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# Microscopy versus Endoscopy

Assessment of middle ear anatomy teaching using microscopy versus endoscopy: A randomized comparative study.

2017 2018 Assessment Teaching

Teaching of middle ear anatomy is to date only scarcely investigated due to its high complexity and the hidden localization of the middle ear.

The aim of this study is to quantitatively compare the suitability of the microscope and the endoscope for the education of middle ear anatomy in a randomized study on subjects with different educational levels.

**Aims**

The aim of this study is to compare the suitability of the microscope and the endoscope for the education of middle ear anatomy.

**Team**

Lukas Anschuetz[1], MD; Sören Huwendiek[2], MD, PHD; Daniel Stricker[2], PhD; Abraam Yacoub[1,3]; Wilhelm Wimmer[4], PhD; Marco Caversaccio[1], MD

[1] Department of Otorhinolaryngology, Head & Neck Surgery, Inselspital, University Hospital and University of Bern, Switzerland

[2] Institute of Medical Education, University of Bern, Switzerland

[3] Department of Otorhinolaryngology, Head & Neck Surgery, Faculty of Medicine, Ain-Shams University, Cairo, Egypt

[4] ARTORG Center for Biomedical Engineering, Artificial Hearing Research Group, University of Bern, Switzerland

**Project Information**

**Project period:** 2017-2018

**Prof. Dr. Dr. med. et MME Sören Huwendiek**
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# Multisource feedback in postgraduate medical education

PhD Thesis: Which factors influence multisource feedback in postgraduate medical education?

2016 2017 2018 Research Further training

Within this PhD Thesis, we aim to demonstrate which factors influence the effects of multisource feedback (MSF) on postgraduate medical education.

Multisource-Feedback (MSF) is an approved form of formative assessment for medical training. Typically, MSF consists of feedback given to a doctor in training by several raters via structured questionnaires. Raters can come from the groups of peers, supervisors, medical and non-medical co-workers. Their written feedback is summed up in a conversation. Here, learner and supervisor formulate individual learning goals, which can help to guide further training.

**Objective**

By addressing this question, we seek to discover which influencing factors are present and how postgraduate education can be supported with the help of multisource feedback.

**Partner**

Graduate School for Health Sciences

**Team**

Eva Hennel (PhD student)
Prof. Dr. Dr. med. et MME Sören Huwendiek (thesis supervisor)
and further employees of the IML

**Project information**

**Running time:** 9/2014 – 2019

**Dr. med. Eva Kathrin Hennel**
Scientific collaborator

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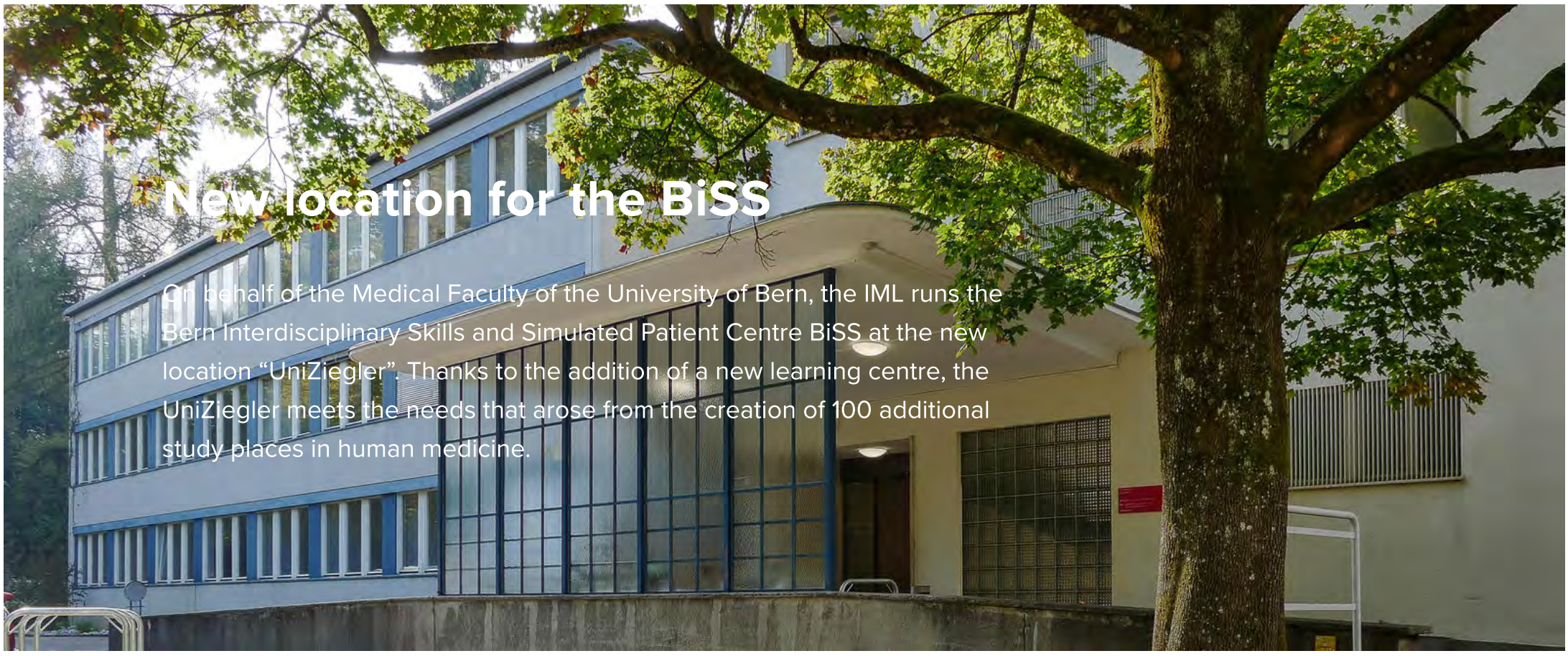

# New location for the BiSS

On behalf of the Medical Faculty of the University of Bern, the IML runs the Bern Interdisciplinary Skills and Simulated Patient Centre BiSS at the new location "UniZiegler". Thanks to the addition of a new learning centre, the UniZiegler meets the needs that arose from the creation of 100 additional study places in human medicine.

**Text:** Dr. med. et MME Kai Schnabel, Dr. med. et MME Daniel Bauer, 11.04.2019

2018 | Service | Teaching | Further training

The increase in the number of available places to study human medicine from 1st August 2018 was based on a resolution of the Executive Council of the Canton of Bern and the University of Bern. To ensure sufficient capacity for the teaching and examination of clinical skills, the BiSS relocated from the Insel campus to the new "UniZiegler" building, the former Renferhaus on the grounds of the former "Zieglerspital". As it was originally built as a hospital, the structure of the new building lends itself very well to the training of future physicians.

A learning centre with group and individual learning stations supplements the offer for students of human medicine. The "Bern Simulation and CPR-Centre" BeSiC, which is also located in the UniZiegler building, is run by the Department of Anaesthesiology and Pain Medicine, and is oriented to specialist personnel in the area of acute and emergency medicine.


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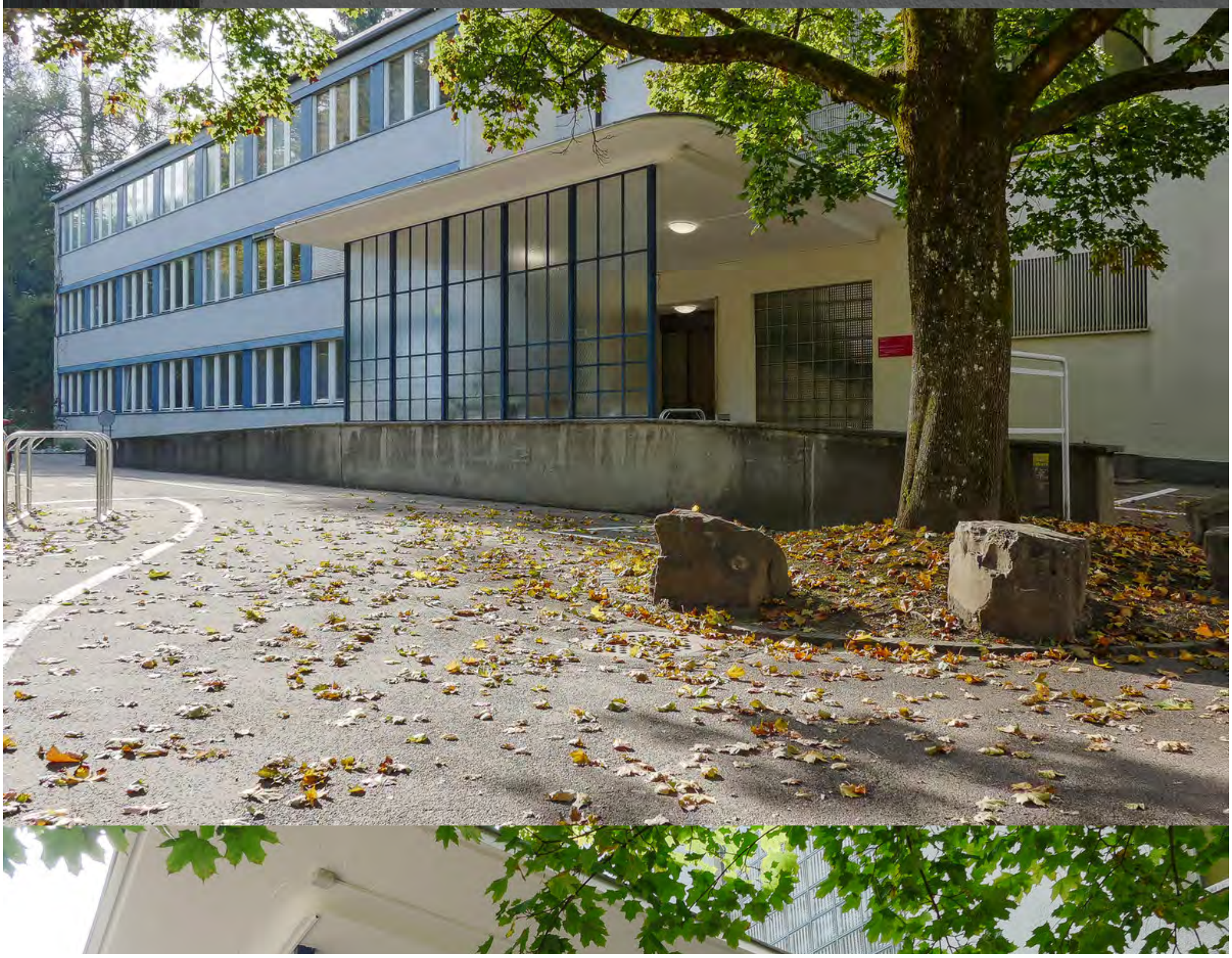


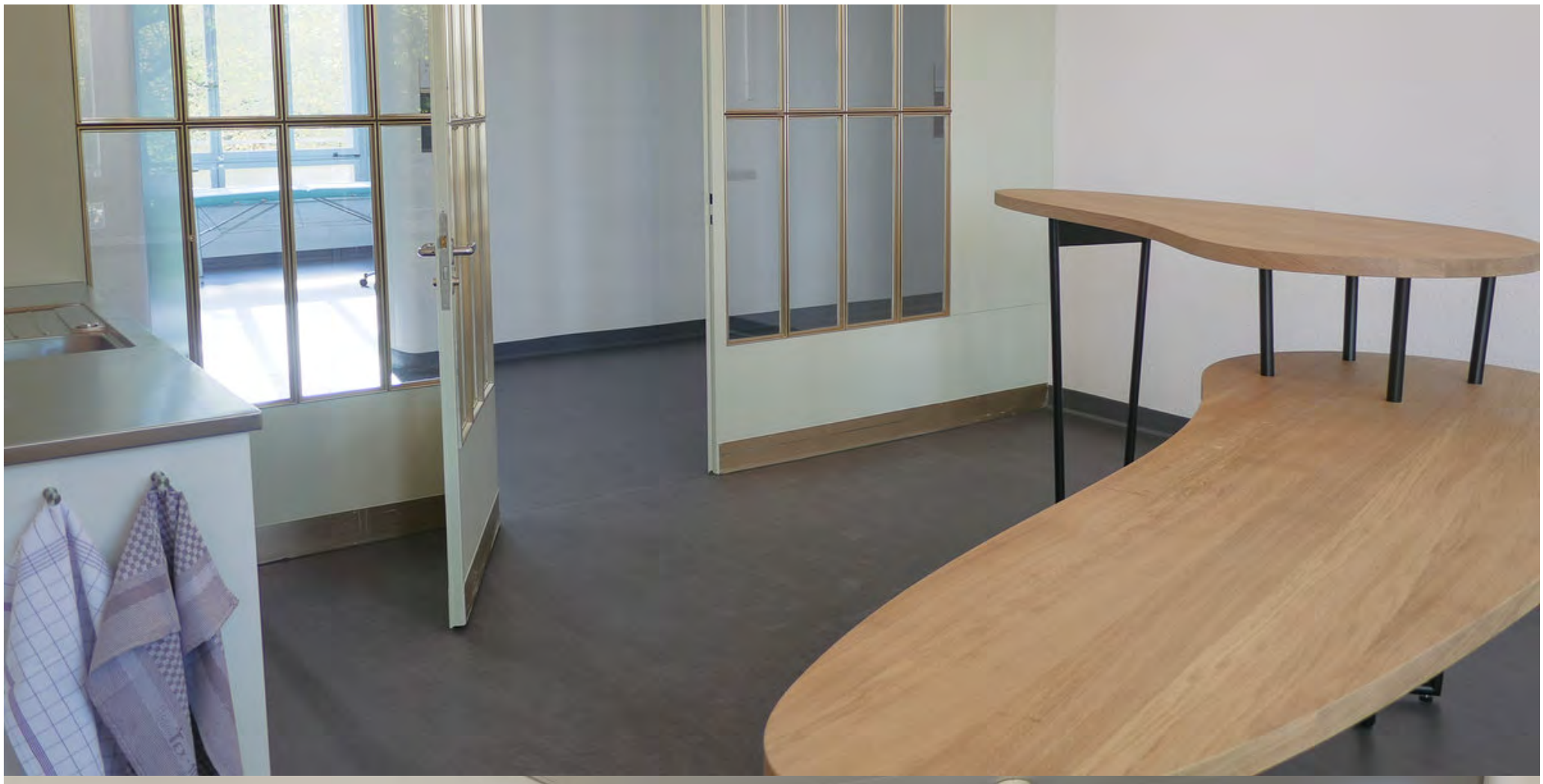
**Logistical challenges**

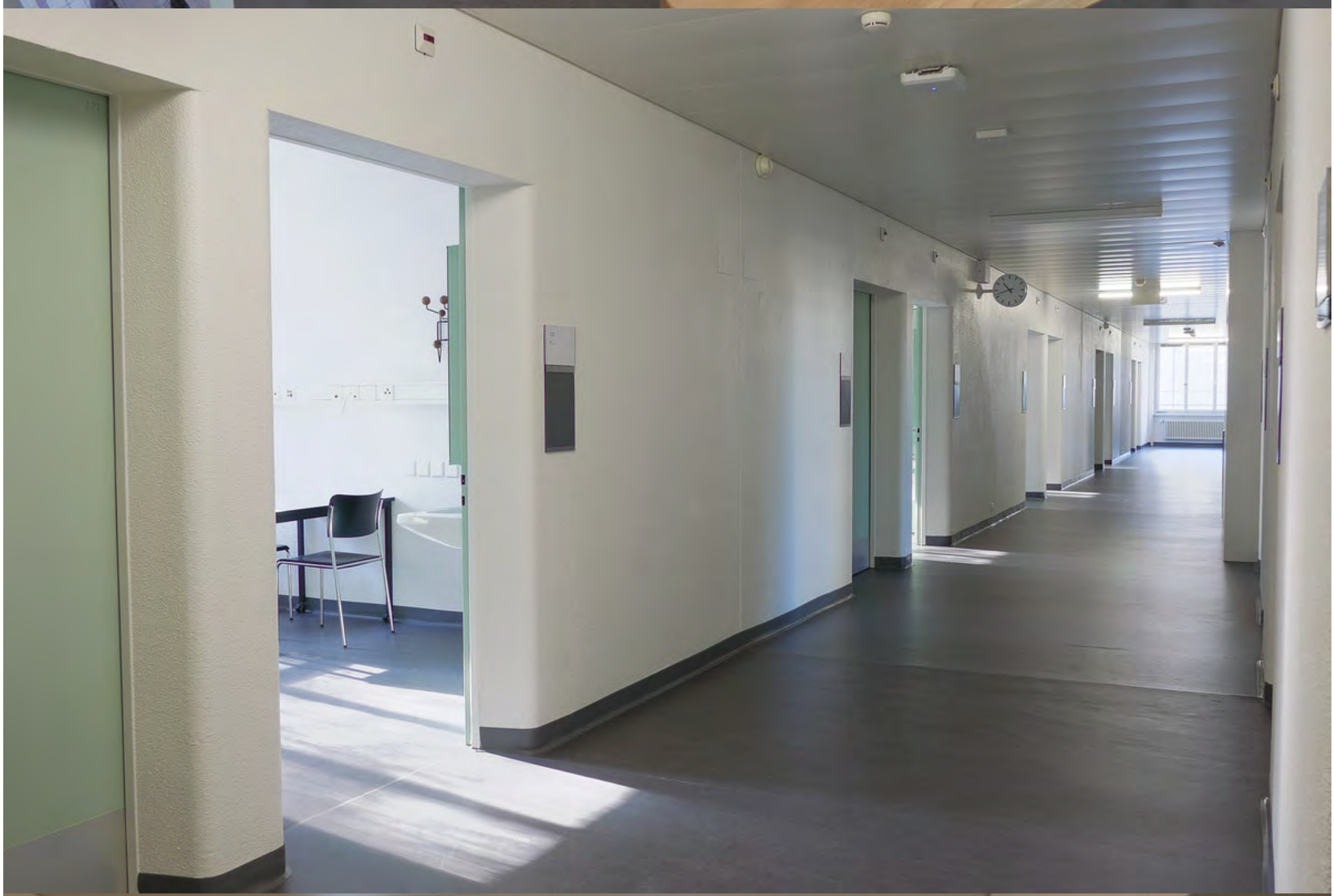
*«Everything will be better in the Renferhaus»*, recalls Dr. med. Kai Schnabel, Head of the Department for Education and Media AUM, who will lead the BiSS and the learning centre on behalf of the faculty. «After the planning phase, everything suddenly had to happen really fast. The rooms had to be ready at the start of the Autumn semester, that was a real logistical challenge», he explains, emphasising the swift and active support from university and faculty institutions, but also his team at the AUM.

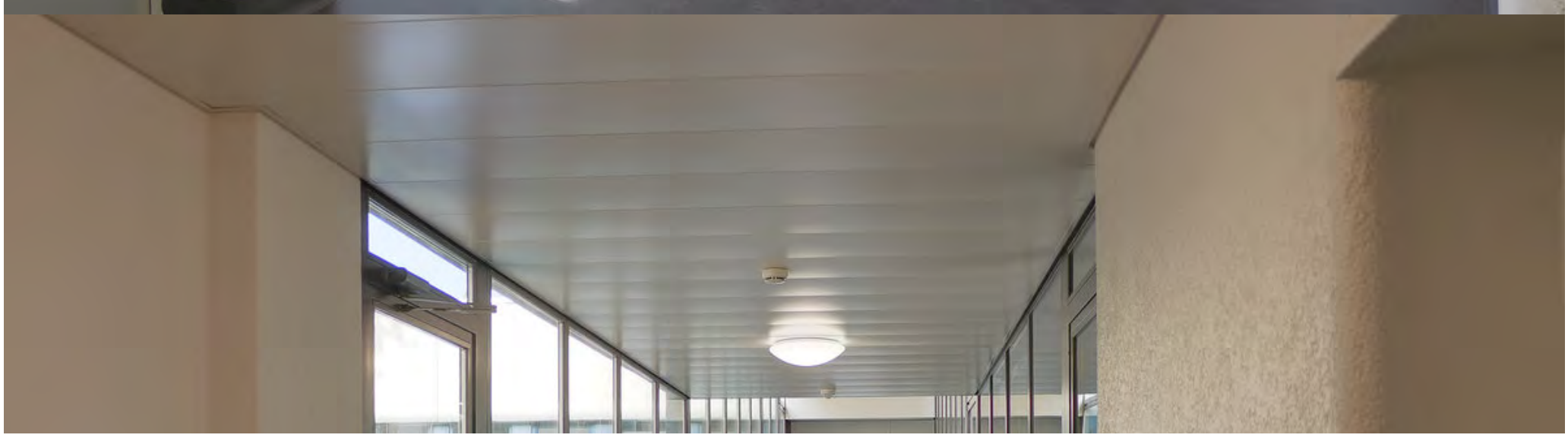
**Learning, teaching and examining on three floors**

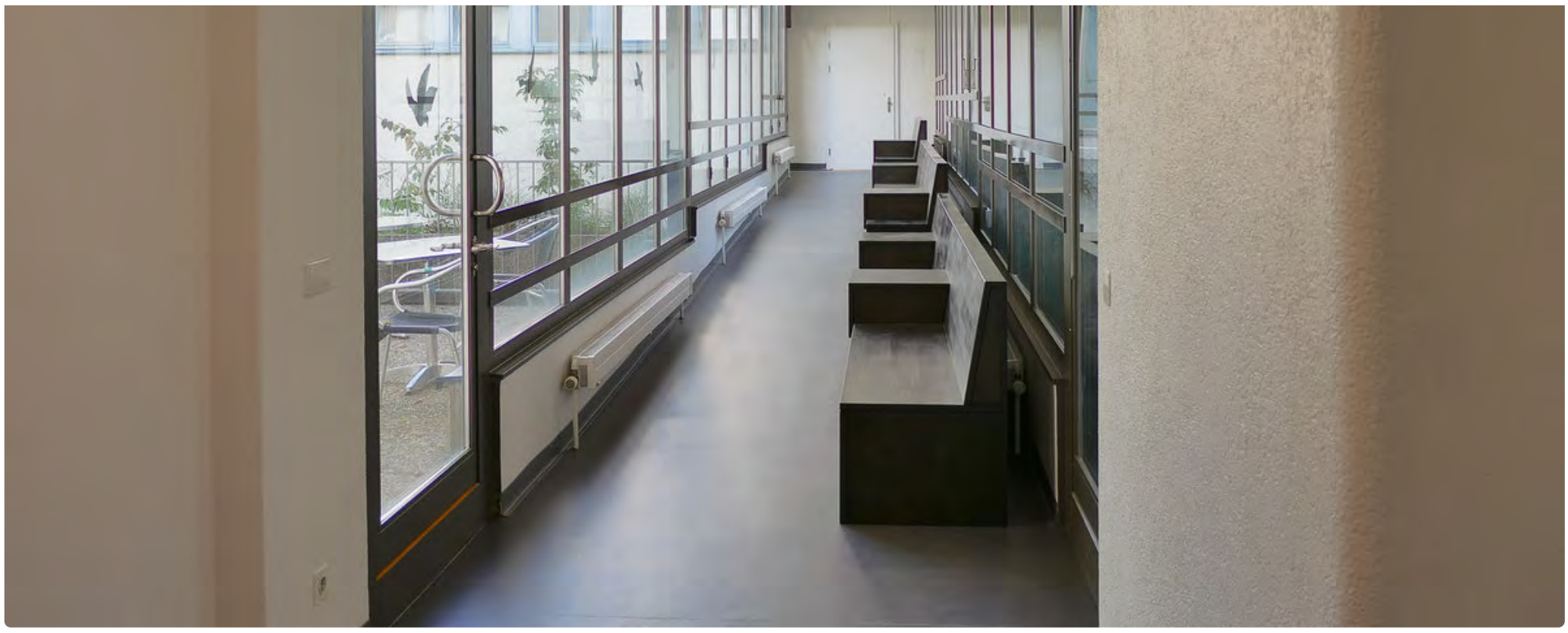
The BiSS and the learning centre opened their doors just in time for the Autumn semester. The whole infrastructure for +100 students is in place and the results are clear to see. The BiSS, which stretches across three floors of the building, offers space for the practical teaching of clinical skills and communication in 42 former patient rooms. In addition to the standard furnishing, including monitors, whiteboards and cameras, all rooms are equipped with examination couches or hospital beds and with suitable simulators or models. The first teaching activities have already been implemented: Communication teaching with simulated patients is already successfully underway, as is the phlebotomy course (drawing blood and inserting venous catheters).

The craft work that is still pending ensues whenever there is no teaching taking place. *«From January, clinical-practical examinations will also take place here, so we need to be 100% ready for action»*, says Marcel von Gunten, who oversees technical-administrative matters at the BiSS. The audiovisual system will then be completely operational for the first time, and for the duration of examinations, the learning centre on the ground floor will also be temporarily closed, which is otherwise open for students 24/7.









**Scope for new offers**

There is also a new course on offer: From this semester, students can learn how sonography is employed in emergency situations using the ultrasound unit. *«It is gratifying to see that the students and lecturers have been so quick take up and utilise the opportunities provided by the BiSS»*,sums up Kai Schnabel in a first interim assessment

**Links**

BiSS Website

Press release Canton of Bern (1.7.2016) (DE)

Press release university of Bern (13.9.2018)

**Central mission IML**

The IML runs the medical learning centres on behalf of the Medical Faculty of the University of Bern. The institute supports students with suitable learning offers, provides the infrastructure and ensures the necessary personnel resources.

**Opening times BiSS**

Mon-Fri from 8 am – 7 pm, apart from during holiday and exam periods

**Dr. med. et MME Daniel Bauer**
Scientific collaborator

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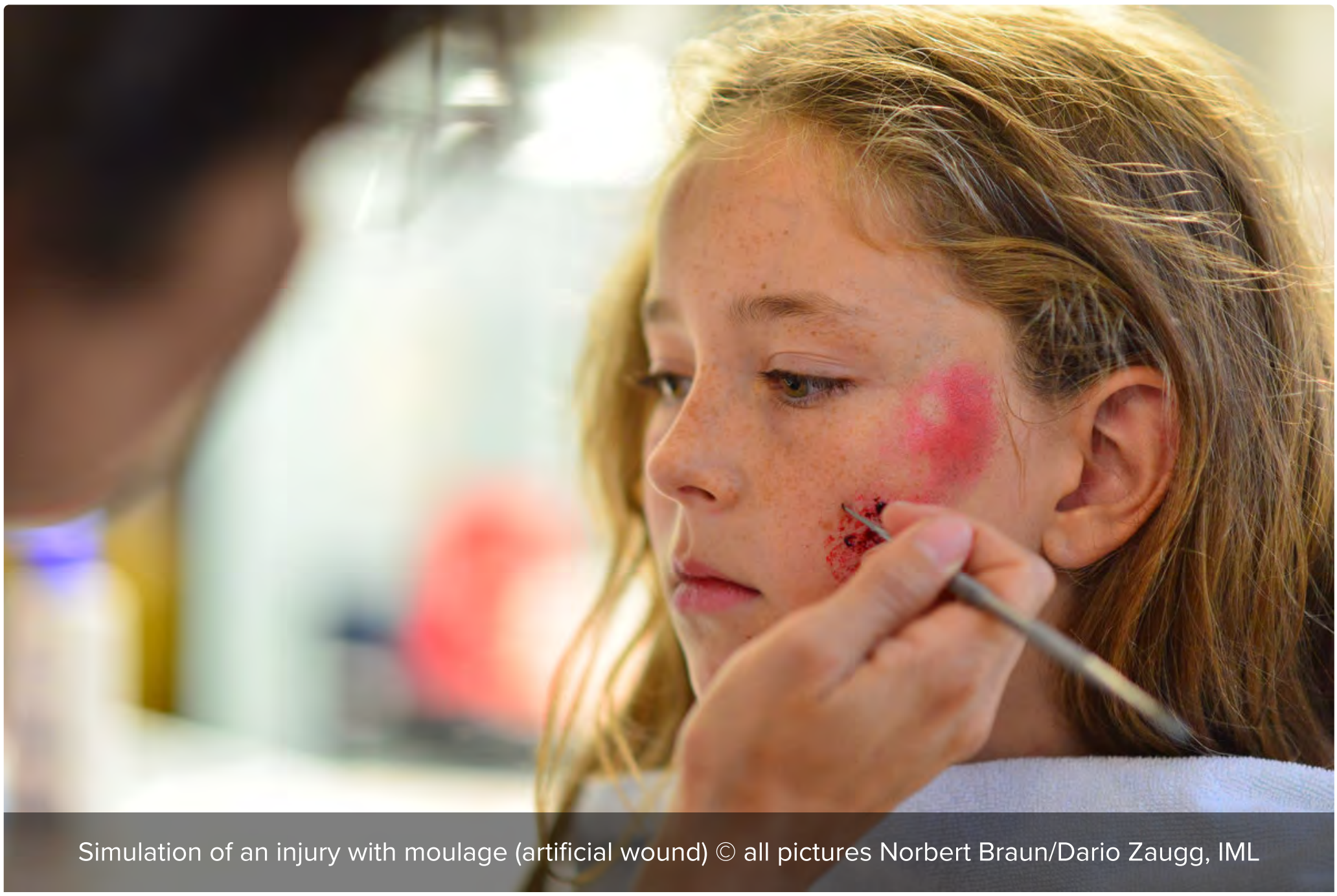
# Open day at the Uni Mittelstrasse

As part of the open day at the Uni Mittelstrasse building on the 27th October, the IML showcased itself through various presentations and activities. Young and old were able to experience medical education firsthand and were amazed by the exciting work field of the IML.

**Text:** Elisabeth Pacher Wiedmer, 11.04.2019

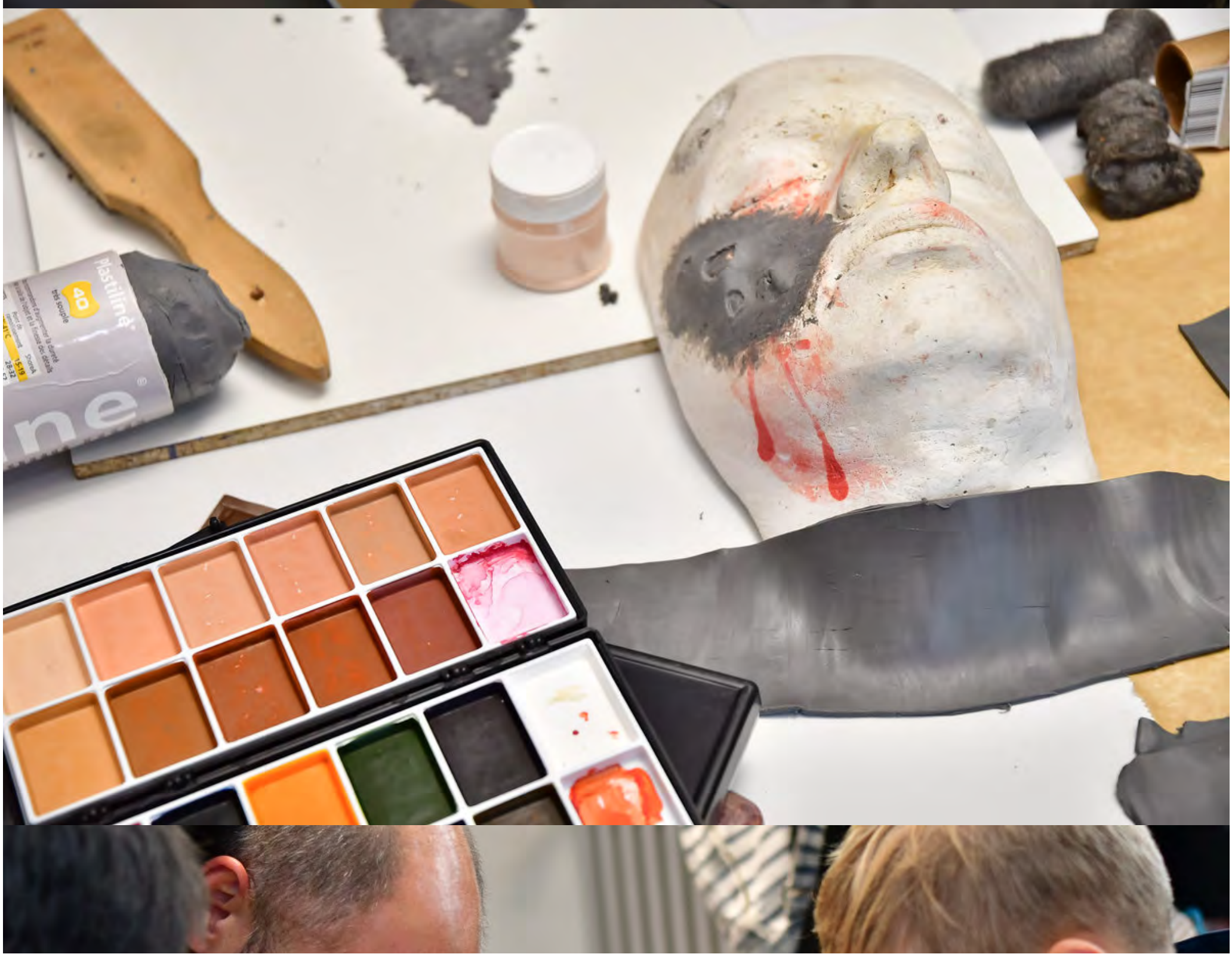
2018 Service Research Event

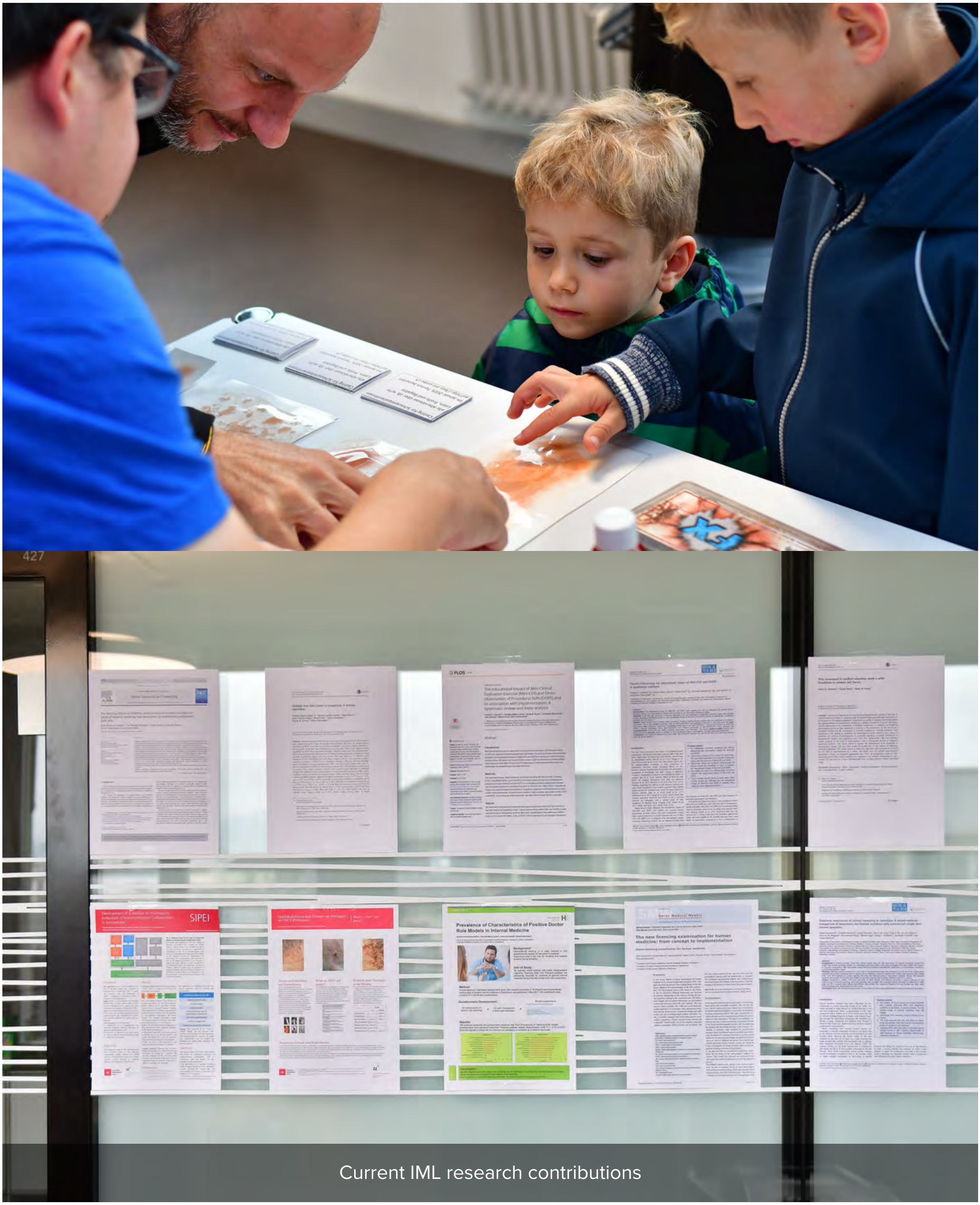
Visitors were able to immerse themselves in the world of medical education and learn more about modern medical teaching and examination methods. They completed a learning circuit in which they got to experience contemporary learning and examination methods: electronic examinations with tablets or the simulation of an injury with moulage (artificial wounds). The latter was particularly popular with the children *«That was totally cool and looks like it's real»*, reported one young visitor enthusiastically.



Simulation of an injury with moulage (artificial wound) © all pictures Norbert Braun/Dario Zaugg, IML

Moulage production on-site

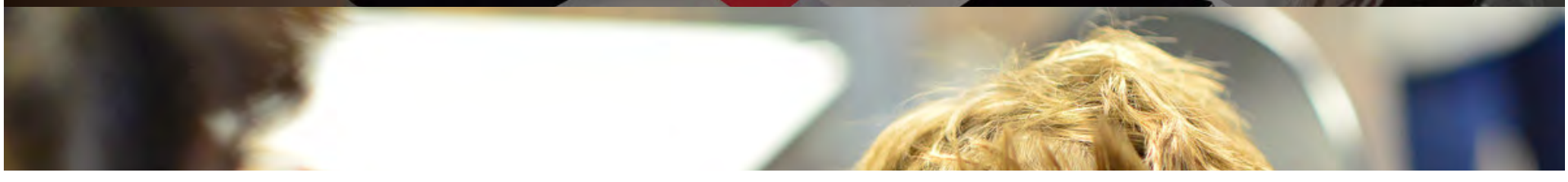




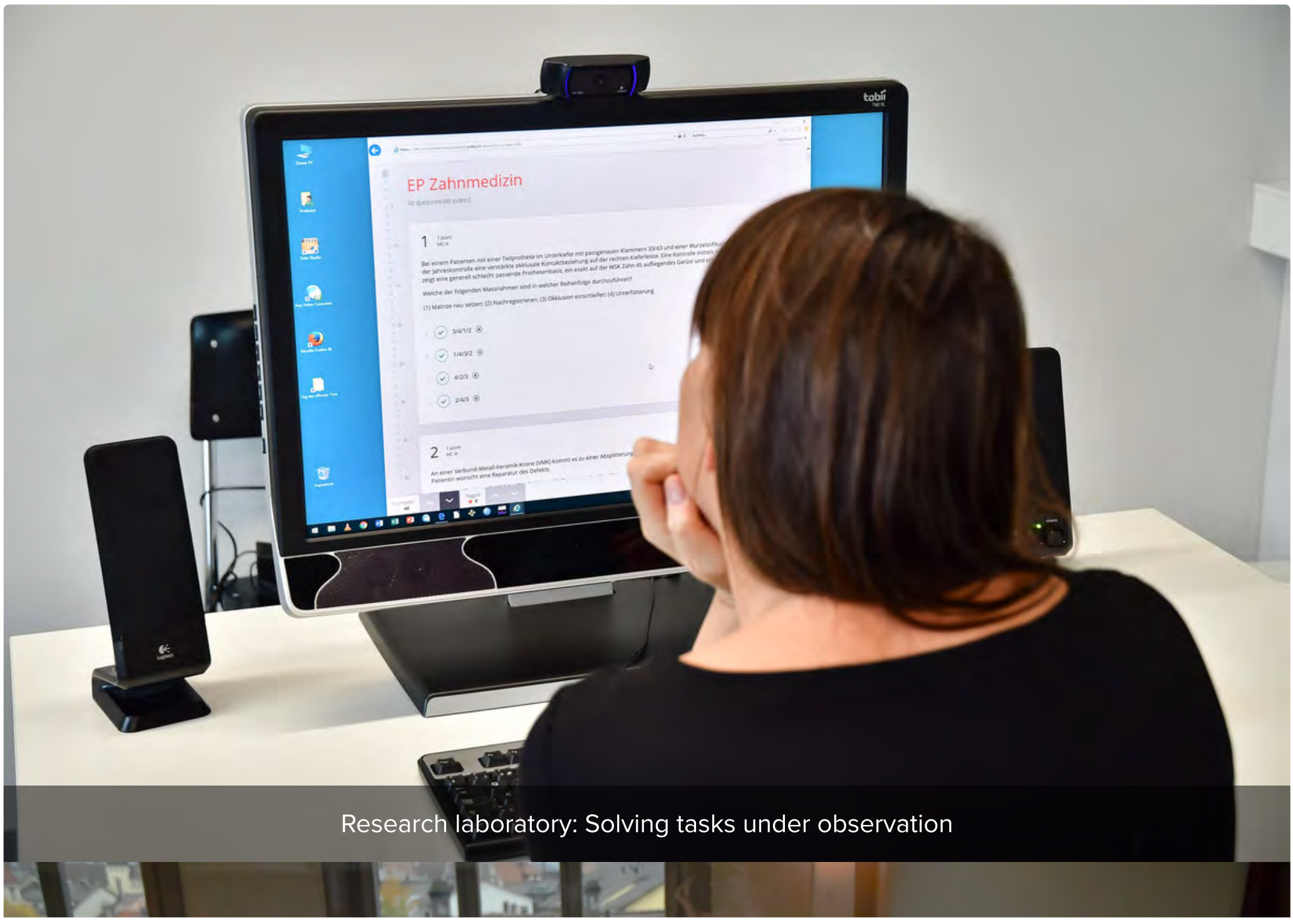

Current IML research contributions

Information straight from the horse's mouth

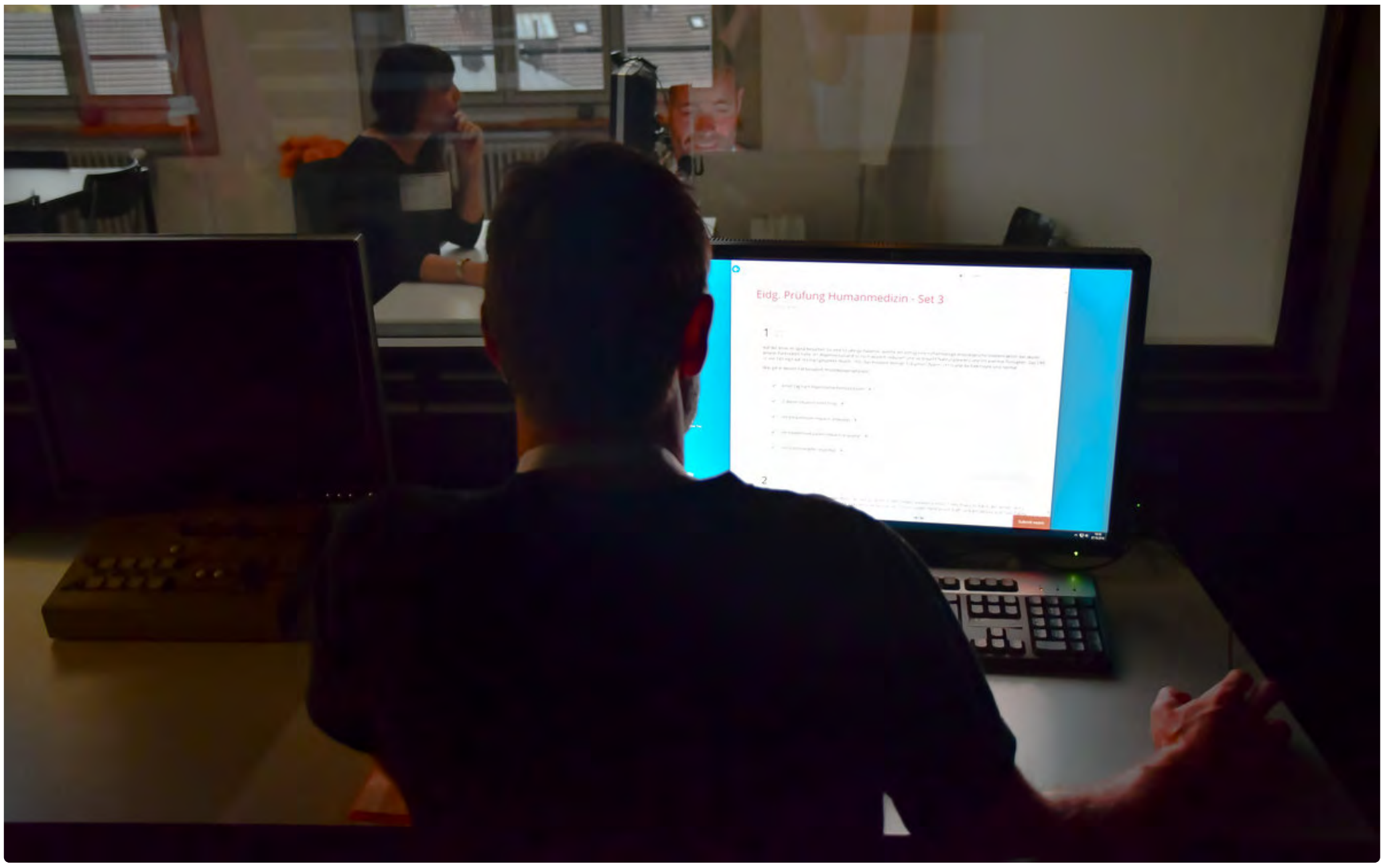
Testing with tablets – how does it work?



Further activities on offer were the testing and observation of human-computer interactions in the research laboratory, and a tour of the new video studio with control room and video editing station.




Research laboratory: Solving tasks under observation




In the research laboratory, participants solved tasks at the computer workstation under observation. While participants solved various tasks in the test area (e.g. a demo exam or a search task in the oneline shop, in the observation area, the eye movements were measured – so-called eye-tracking.

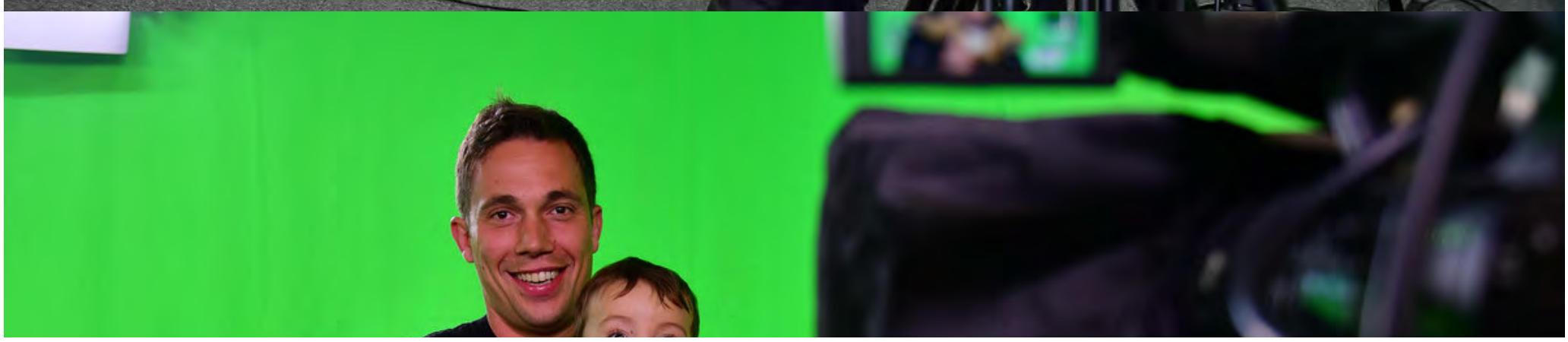
**Witnessing special effects «live»**

In the video studio, the visitors gained insight into video production or were able to place themselves in a virtual world thanks to the Green Screen. A “patient” lying on a stretcher in the middle of a green field surrounded by hens – not a problem thanks to this technology. The interest in medical education and the tasks of the IML was certainly considerable, which was impressively illustrated by the influx of visitors into the new premises. The IML team feels happy in our new premises and we were pleased to share a selection of our activities with the visitors.

Insights into the IML video studio

Example of “Green Screen” technology

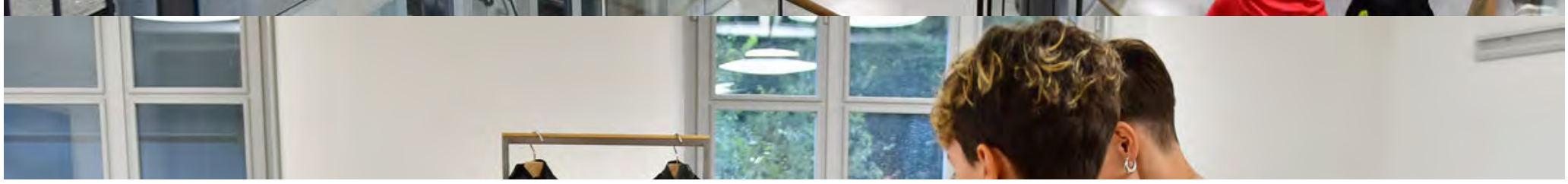
Immersion into a virtual world thanks to “Green Screen”

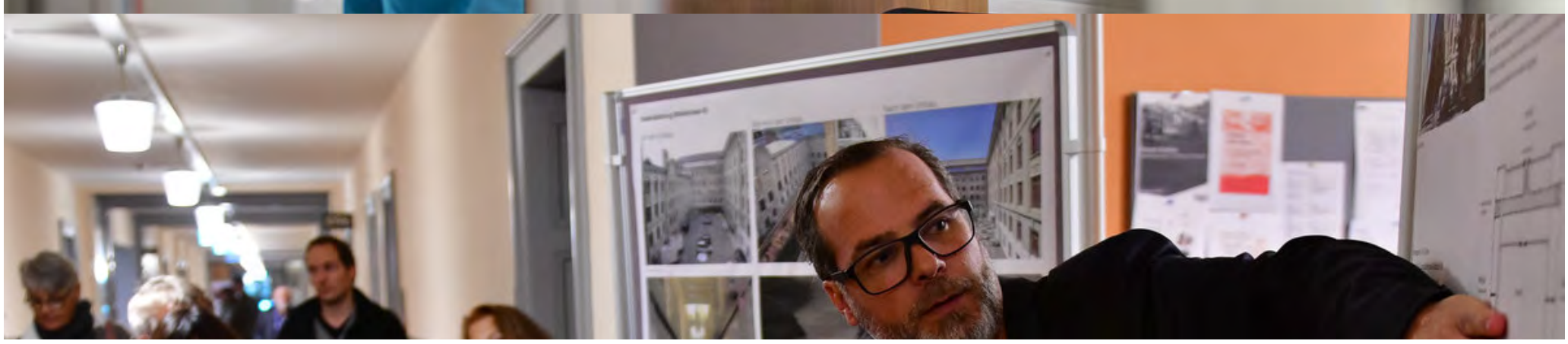


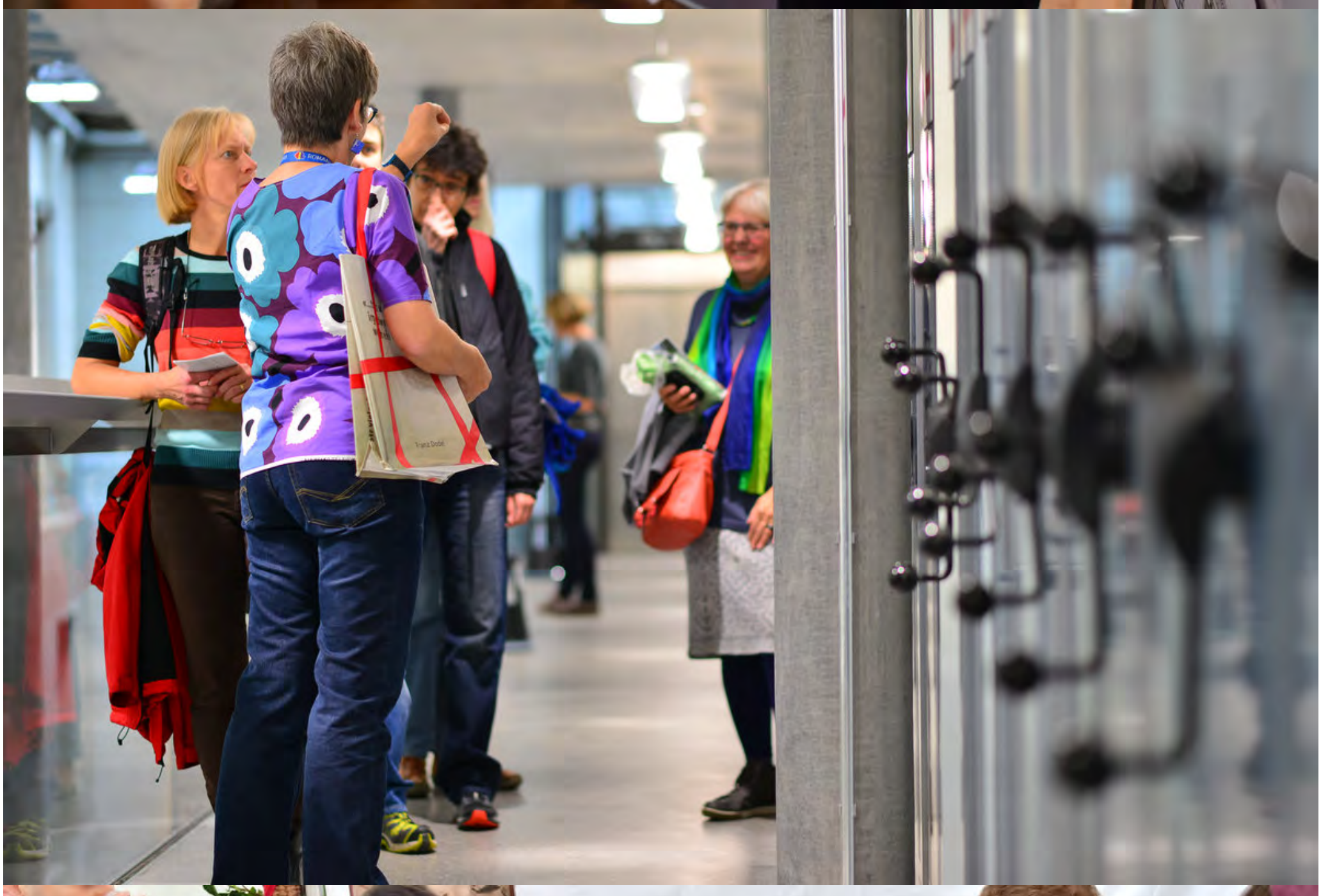
**Diverse program and fascinating insights**

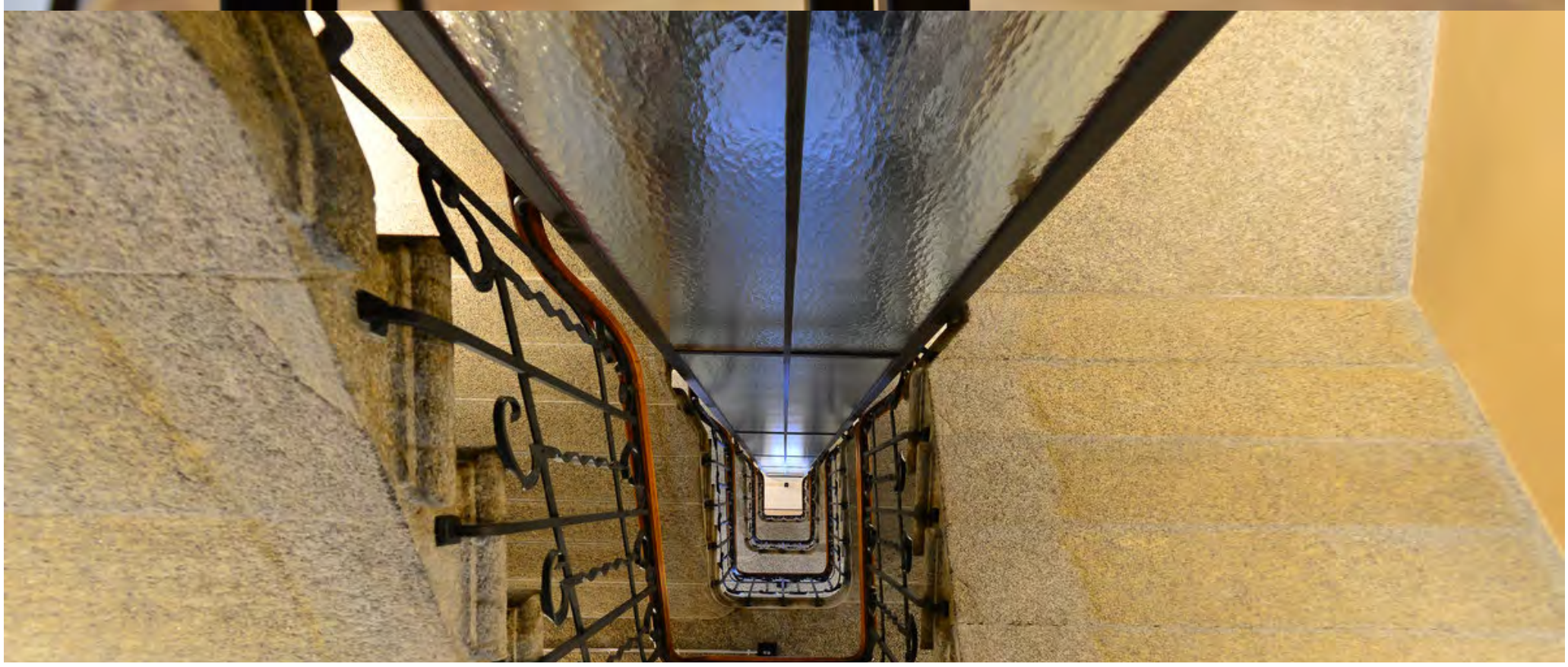
Finally, the event also provided visitors with the opportunity to view the historical former Swiss Federal Railways (SBB) building. For instance, special tours of the building with the themes of building history, architecture and use of the building were offered. The program of the other organizational units ranged from the preparation of delicacies from times gone by (including by former students of Archaeological Sciences), speed dating with researchers (various institutes), a pandemic control centre (Institute of Social and Preventive Medicine), a giant jigsaw of the choir vault of Berne Cathedral (Institute of Art History), a listening puzzle on the theme of gender and equality (Interdisciplinary Centre for Gender Studies) and a viewing of the new academic library (University Library), to exhibitions, films, lectures, presentations and workshops.


The Uni Mittelstrasse opens its doors – come on in!







# Postgraduate education program "Praxisassistenz"

Evaluate the postgraduate education program Praxisassistenz (expanded GP training module in GP practices).

2017 2018 Service Evaluation Further training

The postgraduate training in general practice is evaluated every two years by means of comprehensive online questionnaires. GP trainers, GP trainees, and medical practice assistants are surveyed. The focus is on a comparison between funding from the Foundation for the Promotion of Training in General Practice (WHM) and funding from the cantons. The evaluation data are quantitatively analyzed.

### Objective

The aim is to reveal, in the framework of a final report, whether the quality of the program and the satisfaction of the participants differs depending on the funding model.

### Ordering customer

Foundation for the Promotion of Training in General Medicine (WHM).

### Team

lic. Phil. Barbara Zurbuchen
Dr. Felicitas Wagner
Prof. Dr. Dr. med. et MME Sören Huwendiek

### Publications

Regular publication of reports in the Schweizer Ärztezeitung (Swiss Medical Journal)

**Project information**

**Running time:** At two-year intervals since 2006

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Scientific collaborator

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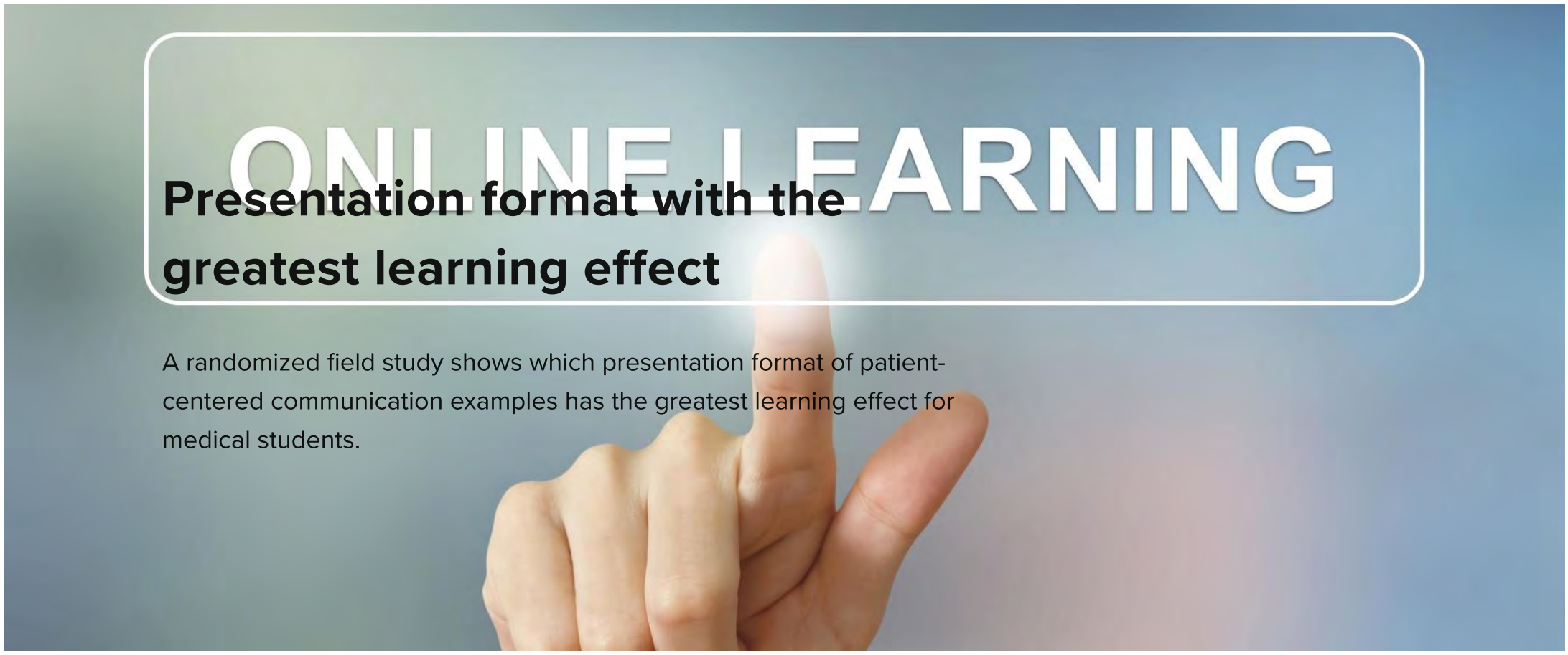


# Presentation format with the greatest learning effect

A randomized field study shows which presentation format of patient-centered communication examples has the greatest learning effect for medical students.

2016 2017 2018 2019 2020 Research Teaching

High-quality communication examples were integrated into a web-based learning tool. Medical students used this tool (DocCom.Deutsch) to prepare for their on-sole communication training. The presentation format of the examples varied – the students were presented either with text examples, video examples, or video examples with brief hints. Students' performance during the training with simulated patients was assessed.

**Objective**

It was examined which presentation format of communication examples is optimal for effective preparation.

The following question was addressed: Which of the presentation formats of communication examples is the most effective for students' preparation for the practical training with simulated patients?

**Results and Outlook**

It was found that video-based examples – compared with the much cheaper to produce text examples – only lead to a significantly greater learning effect if the videos are enriched with hints on the central elements in the video (see publication).

To clarify whether text examples with corresponding hints trigger a comparable learning effect to their video-based equivalents, a follow-up study was launched. First data from this study are currently being analyzed.

**Team**

Felix Schmitz (PhD student)
Dr. med. et MME Kai Schnabel
Dr. med. Cadja Bachmann
Dr. med. et MME Daniel Bauer
Dr. med. et MME Ulrich Woermann
Prof. Dr. phil. Sissel Guttormsen (thesis supervisor)

**Project information**

**Running time:**

Spring 2016 – Spring 2020

**Dr. phil. Felix Schmitz**
Scientific collaborator

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# Quality of radiation protection training

Evaluate the quality of radiation protection training at the MTR (medical-technical radiology) schools in Switzerland.

2017 2018 2019 Service Evaluation

Radiology professionals are among the most important occupational groups of medical health personnel with regard to implementing radiation protection. To assess the quality of training, a comparative evaluation is conducted at all six schools.

**Objective**

The project aims to compare the quality of radiation protection training at the various schools (FH and HF; universities of applied science and colleges of professional education and training) and to determine whether there is potential for optimization.

**Ordering customer**

Federal Office of Public Health (BAG)

**Team**

lic. Phil. Barbara Zurbuchen
Dr. Felicitas Wagner
Prof. Dr. Dr. med. et MME Sören Huwendiek

**Project information**

**Running time:** 11/2017 – 7/2019

**Barbara Zurbuchen**
Scientific collaborator

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# Requirements engineering for new geodata infrastructure

Raise the needs with regard to renew the geodata infrastructure of AGI.

2017 2018 Service Usability

How to display data/information is a fundamental issue in professional life. We seek to learn from various fields in this case from the geology.

Support and consulting at AGI (Canton Bern) for the collection of requirements for a new geodata infrastructure among 1000+ users.

**Aims**

- Get to know requirements and needs of current users of the infrastructure
- Assess usage patterns of current users

**Ordering customer**

AGi (Canton Bern; Amt für Geoimformation)

**Team**

Stephan Schallenberger, MAS HCID
Rafael Beck, MAS HCID
Felix Schmitz, PhD

**Project information**

**Projekt period:** 12.2017 - 08.2018

# Self-guided, lifelong learning in specialist domains

How can specialists be supported in highly individualized learning processes with the help of modern tools?

2018 2019 Research Teaching

For successful patient treatment, physicians need to continuously update their subject knowledge even after their education. Besides institutional offers, this largely occurs on a self-guided basis. For instance, they consult scientific publications and other types of specialist articles in different, mostly digital formats – from static PDF to multimedia forms of presentation and highly interactive media (key term “Virtual Reality”). In this process, it is especially challenging to identify the relevant building blocks of knowledge, to retain them, and to apply them appropriately in practice.

**Objective**

This research project seeks to clarify how experts can be optimally supported in these individual learning processes through modern computer-based features. Learning as an active process presupposes that the experts delve deeply into the material, integrate new elements into existing cognitive structures, and adapt schemas accordingly. This implies that computer-based options should support the actual learning effort optimally; learning needs to be facilitated and sustainable.

**Partner**

Prof. Dr. med. Andreas Raabe, Specialist Physician FMH in Neurosurgery, Director of the Department of Neurosurgery, Bern University Hospital
Dr. Jodie Freeman, Department of Neurosurgery, Bern University Hospital

**Team**

Prof. Dr. phil. Sissel Guttormsen
Dr. phil. Felix Schmitz
Dr. sc. ETH Philippe Zimmermann

**Project information**

**Running time:** 2018 to present

**Dr. phil. Felix Schmitz**
Scientific collaborator

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# SOREL – maintain and redesign

SOREL is an online learning program funded by all five medical faculties in Switzerland and the Swiss Society of Otorhinolaryngology, Head and Neck Surgery.

2016 2017 2018 2019 2020 Service Further training

The Department for Education and Media (AUM) has been maintaining the SOREL program since 2011. The system needs an update, therefore, it is now being redesigned to meet the latest Internet standards. This will make the learning program more attractive for users and make the contents easier to edit for authors. Moreover, in the future, all five university ENT departments (University Clinics for Ear, Nose and Throat Medicine) should be able to install SOREL on their own servers. The revised learning program will provisionally be available from Autumn 2018.

**Objective**

- Compatibility with HTML 5
- Modern design
- Optimized for touch screens
- WYSIWYG authoring

**Partners**

All five university ENT departments in Switzerland plus the Swiss Society of Otorhinolaryngology, Head and Neck Surgery. The partners are funding the project.

**Team**

Adrian Michel
Dr. med. et MME Ulrich Woermann

**Project information**

**Running time:** 10/2014 to end of 2021

**Funding:** by the partners

**Dr. med. et MME Ulrich Woermann-Walthert**
Scientific collaborator, Head of Group learning media

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# Spiritual Care in Chronic Pain

Interdisciplinary Research for Interprofessional Practice in Medicine and Nursing.

2017 Research Teaching

The significance of spiritual aspects in the management of chronic pain will be described (Part A), and a screening tool will be developed (Part B). An e-learning tool focusing on pain and spirituality will be developed for communication training purposes between healthcare professionals and patients (Part C). The efficacy of the tool will be evaluated with respect to both initial and more advanced training with the participation of various training institutes.

**Aims**

The study has two goals. Firstly, the significance of the spiritual dimension in medical treatment and nursing will be investigated in chronic pain patients and an appropriate surveying tool will be developed. Secondly, an e-learning tool will be developed for communication between healthcare professionals and patients, and its efficacy assessed.

**Lead**

Prof. S. Peng Keller, Theological Faculty, University of Zürich

*Co-applicants:*

- Prof. M. Rufer, Psychiatrische Poliklinik Universitätsspital Zürich;
- Prof. N. Biller-Andorno, Institut für Biomedizinische Ethik und Medizingeschichte;
- Dr. A. Bischoff, Haute école de santé Fribourg
- Prof. R. Spirig, Abteilung Klinische Pflegewissenschaft, Universitätspital Zürich.
- Prof. S. Guttormsen, Institute for Medical Education (Lead project)

**Target group**

Health professionals, pre- and post graduates.

**Team**

Prof. Dr. phil. Sissel Guttormsen (Lead Part C, eLearning)

Dr. med. et MME Daniel Bauer

Dr. med. et MME Beate Brem

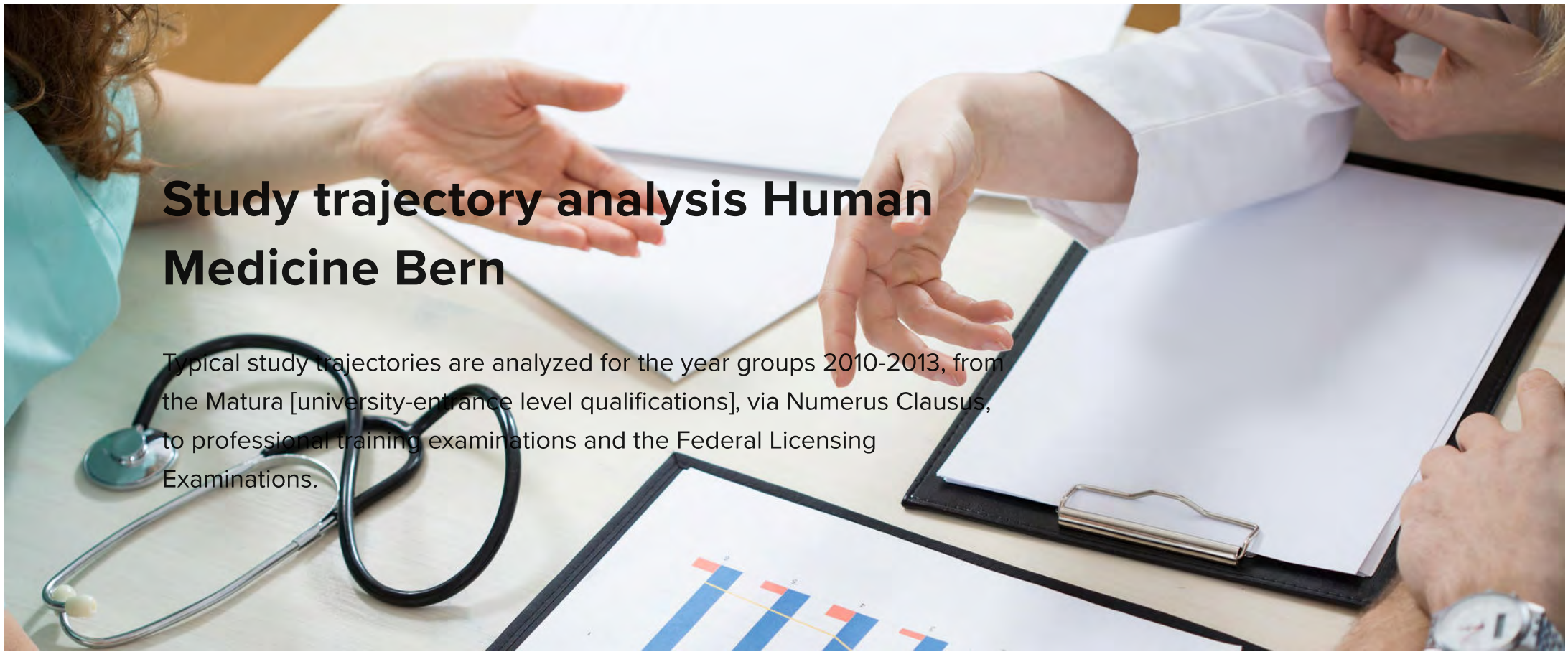
Felix Schmitz (PhD student)

Dr. med. et MME Kai Schnabel

**Project Information**

**Project period**: 2017 - 2020

**Funding:** NFP / SNF



# Study trajectory analysis Human Medicine Bern

Typical study trajectories are analyzed for the year groups 2010-2013, from the Matura [university-entrance level qualifications], via Numerus Clausus, to professional training examinations and the Federal Licensing Examinations.

2016 2017 2018 Research

Typical study trajectories are not only depicted in descriptive terms, but also examined with respect to patterns and associations using inferential statistics. The endeavor is to extract the importance of individual factors such as age, gender, Matura grades, Numerus Clausus values or professional training grades, to enable potential prognoses to be made with respect to study success.

**Objective**

The results should reveal possible obstacles in the study trajectory and serve as the basis for a discussion of possible measures for improvement (from the Matura to the Federal Licensing Examination in Human Medicine).

**First results**

As the last two year groups have not yet completed the Federal Licensing Examinations, interim results were presented in September 2017 – up to and including Bachelor examinations.

**Team**

Dr. phil. Rainer Hofer
Dr. phil. Rabea Krings
Prof Dr. Dr. med. et MME Sören Huwendiek
Student interns
Employees of the IML

**Project information**

**Running time:** 09/2014 – 01/2018


# Summary main highlights of 2018

The most important highlights that occupied us in 2018.

12.04.2019

**SAMW award for an interprofessional education project for the third time in a row (2016, 2017, 2018)**

SAMW Award for interprofessional teaching 2018, the third year in a row: K. Feller (Oberärztin*), L. Remund (Psychologin*), S. Stocker (Diabetesfachberaterin*) and M. Müller (Ernährungsberaterin*), *Department of Diabetes, Endocrinology, Clinical Nutrition and Metabolism, University Hospital of Bern (Inselspital), Ch. Berendonk (IML, AAE, expert clinical assessment). Project title: *“Interprofessionelle Arbeitsplatz-basierte Assessments in der Diabetologie am Universitätsspital Bern”.* (Interprofessional work-place-based-assessment at the Department of Diabetes, Endocrinology, Clinical Nutrition and Metabolism, Inselspital, Bern University Hospital.

**3 Medical-Education PhD’s Projects successfully finished**

***February:*** Andrea Lörwald, *“Mini-CEX and DOPS: educational impact and influencing factors”*. Thesis advisor Prof. Dr. Dr. med et MME  Sören Huwendiek; Co-advisor Prof. Dr. med. et MME Robert Greif, FERC

***March:*** Felicitas Lahner *“Influence of different scoring algorithms for multiple true-false items on the measurements precision of multiple-choice exams”.* Thesis advisor Prof. Dr. Dr. med et MME Sören Huwendiek; Co-advisor Prof. Dr. med. et MME Martin R. Fischer

***May:*** Felix Schmitz *“Fostering communication skills in undergraduate health profession students”.* Thesis advisor Prof. Dr. phil. Sissel Guttormsen; Co-advisor Prof. Dr. Jörg Hupfeld-Heinemann

**3 remarkable infrastructure developments**

*IML eAssessment tools continuously disseminate*
Further organisations decided to use the IML tools from the Examic®Assessment Suite for their written and practical exams. Also, the federal exam of human medicine will run on tablets with Examic Measured® in the future.

*Opening of the UniZiegler as a new skills training centre* for the Bern medical faculty at the old Zieglerspital in September 2018. Head: K. Schnabel, AUM, IML. https://www.iml.unibe.ch/themen/uebersichten/artikel/neue-raeume-fuer-das-biss

*The IML moves into the new location at the Mittelstrasse 43* in Bern together with 9 other university institutions. We now have an excellent infrastructure for the staff, a new research-lab and video and sound-studio. Furthermore, facilities for managing the stock of tablet computers used for exams are at our disposition.

**3 competitive Grants**

The recently established university founding body for innovative learning and teaching project is an important initiative and incentive for learning research.

University of Bern, “Förderung innovative Lehre (FIL)”, support of the projects:

- „Improvement of the competency of medical students in the treatment of interdisciplinary Pediatric emergency patients via Blended Learning with Virtual Patients and practical work under supervision“, I. Steiner, Emergency Center for Children and Adolescents, University Hospital of Bern (Inselspital) & S. Huwendiek, AAE, IML
- „Development of a Blended-Learning Curriculum for medical students regarding motivational interviewing in the psychiatry clerkship“, S. Pinilla & S. Huwendiek AAE, IML
- “Basic Trauma Management (BTM) a mandatory course for 3rd year Medical Students: Curriculum-Revision.“ J. Berger-Estillita*, R. Greif* (*Department of Anesthesia, Insel University hospital), K. Schnabel, AUM, IML.

**Annual Report 2018 of the Medical Faculty**

Read online (IML p. 78)


# Teaching materials “Palliative Medicine Essentials”

Evaluate the basic teaching materials “Palliative Medicine Essentials” – the fundamentals of palliative care.

2016 2017 2018 Service Evaluation

The new basic teaching materials in palliative medicine were comprehensively evaluated following implementation into the curricula of various universities. Students and teachers completed online questionnaires in German and French on the quality and utility of the materials. The evaluation data were quantitatively analyzed. The final report was completed in July 2018,

**Objective**

The aim is to evaluate the teaching materials in the framework of a final report, and to reveal possible measures for optimization.

**Ordering customer**

Federal Office of Public Health (BAG), Bern

**Team**

Dr. phil. Felicitas Wagner
lic. phil. Barbara Zurbuchen
Prof. Dr. Dr. med. et MME Sören Huwendiek

**Project information**

**Running time:** 9/2015 – 7/2018

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**Barbara Zurbuchen**
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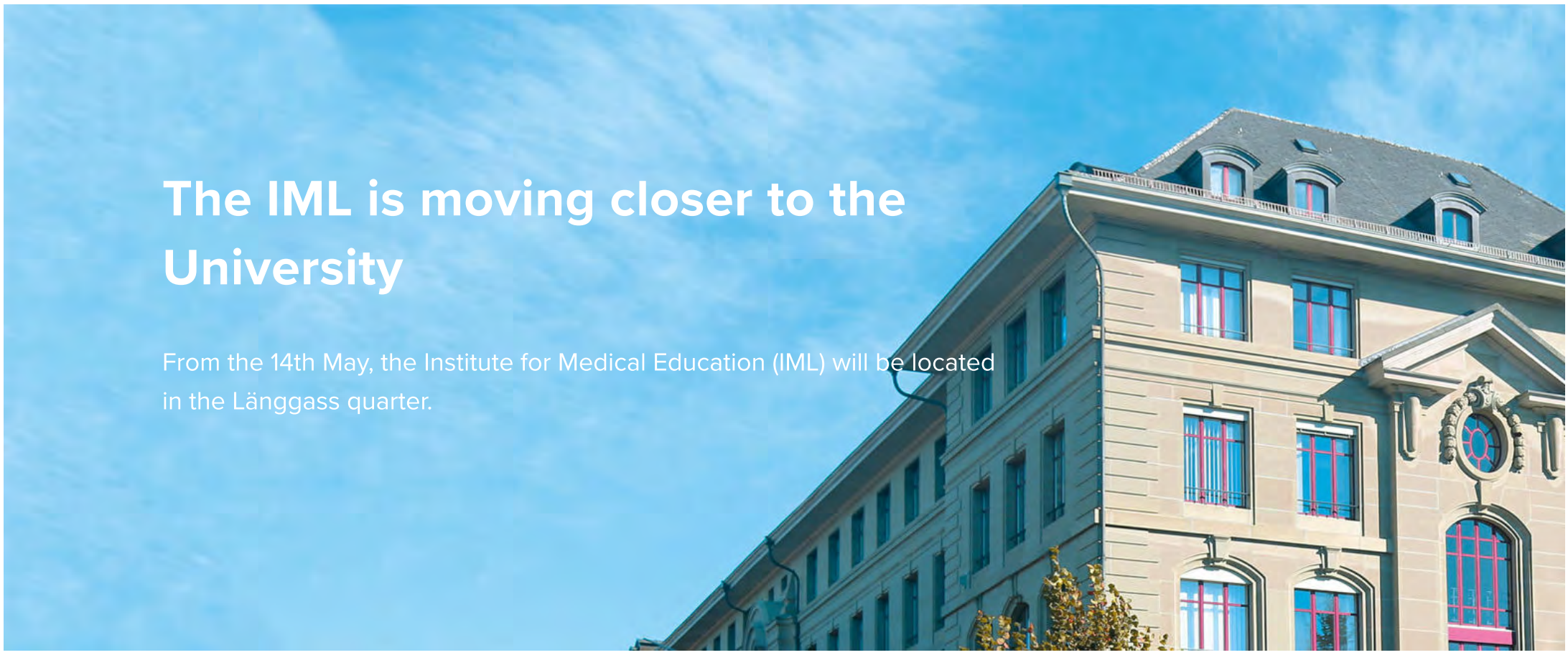


# The IML is moving closer to the University

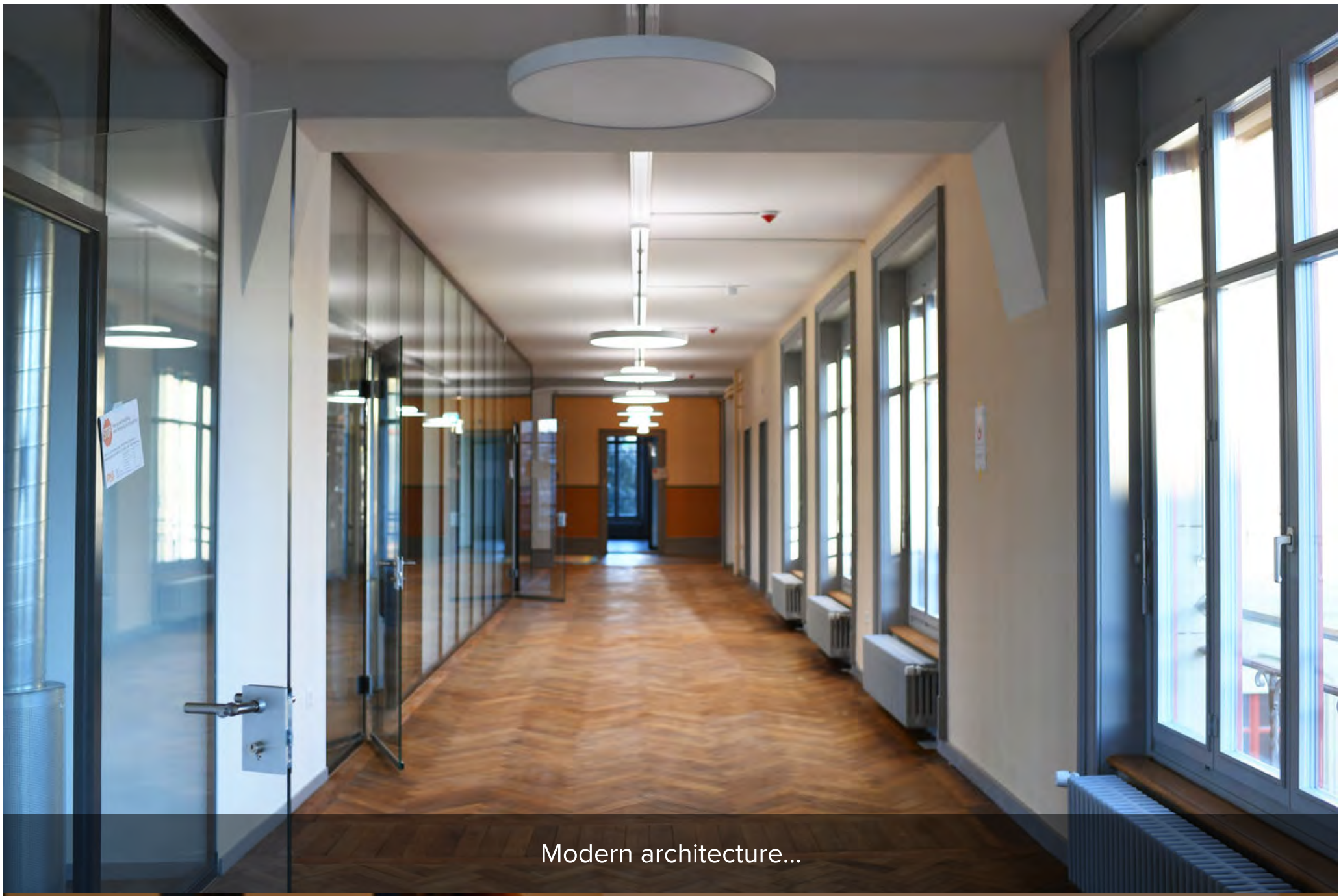
From the 14th May, the Institute for Medical Education (IML) will be located in the Länggass quarter.

**Text:** Elisabeth Pacher Wiedmer, 11.04.2019

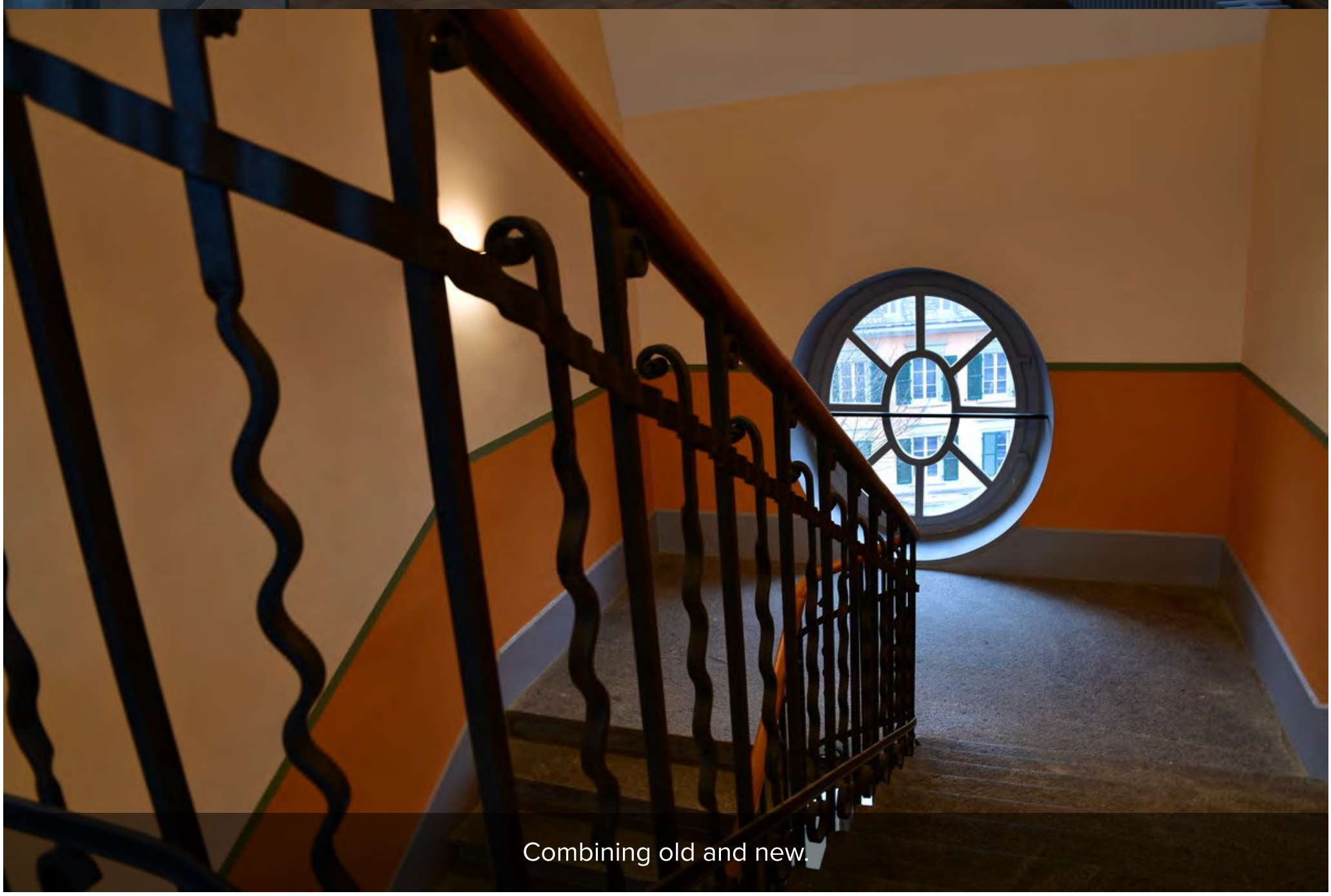
2018 Event

**At its new location in Mittelstrasse 43, the IML will be coming together spatially, as the management and three of the four departments will be combined under one roof (for organizational reasons, the program leadership of the MAS Master of Medical Education will remain at Bühlplatz). The Unitobler and all other university locations are within walking distance.**

The headquarters of the IML is the former office building of the Swiss Federal Railways (SBB) in Mittelstrasse 43. In the future, the management and the three IML departments (Assessment and Evaluation (AAE), Education and Media (AUM), and Software Development, Usability Consulting and IT Infrastructure (ASCII)) will be working together under one roof. Only the MME Master program will continue to be housed in Bühlstrasse. Besides modern office spaces, the IML will possess a modern usability and research laboratory, a sound studio and a video studio. The institute will share the property with further organizational units from the University of Bern, and the IML will be in good company in its new home, with three other institutes and groups of the Medical Faculty (see box 2).



Modern architecture...

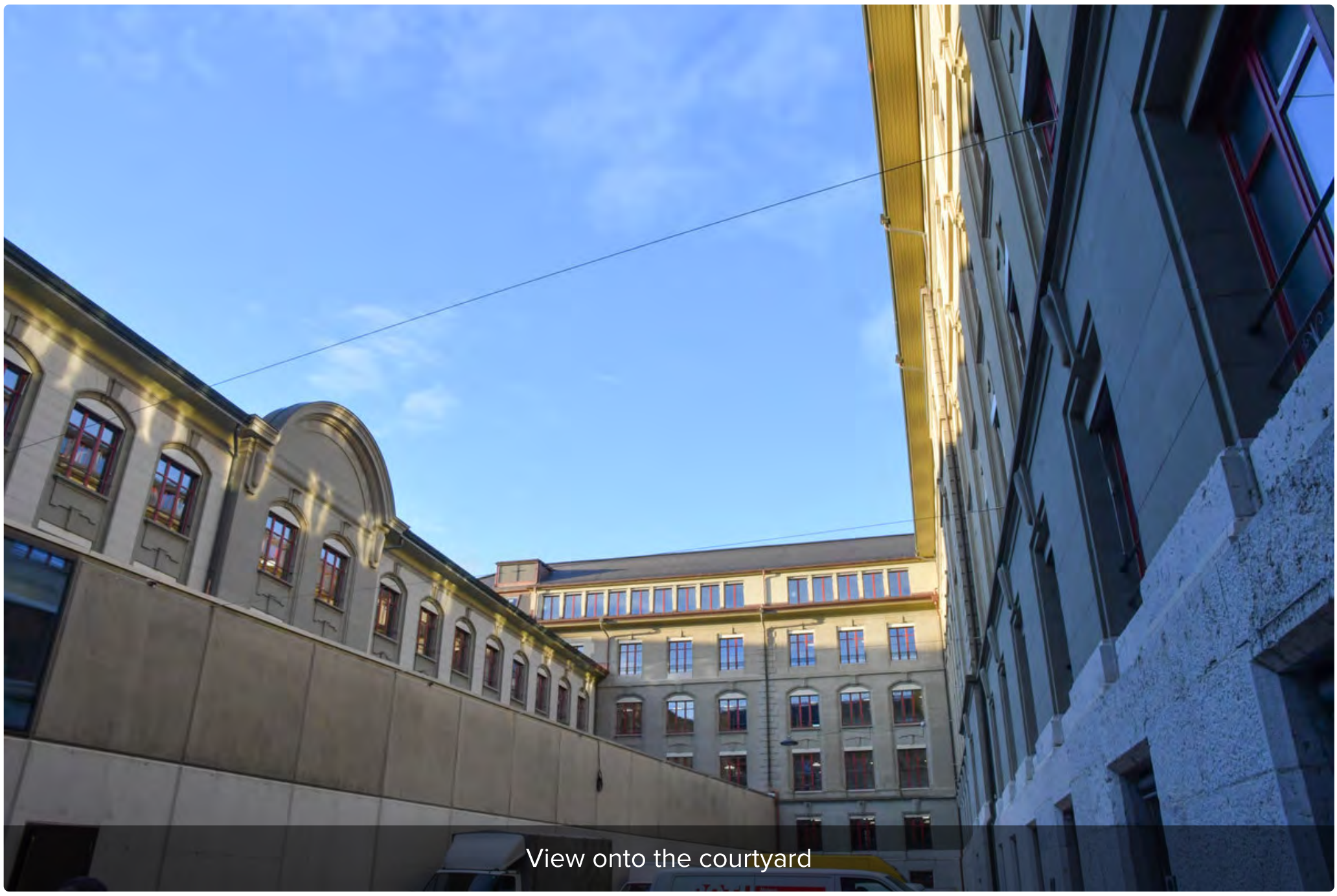


Combining old and new.

Video studio (Image 1 hrs ag; Image 2/3 IML)

**Eventful history of the building**

The building, which was classified as worthy of protection by the city's Office for the Preservation of Historical Monuments, has an eventful history. It was built in 1903 as the administrative building of the SBB, which had been founded one year earlier. Five years later, in 1908, it was "flipped" – the original U-shape was converted into a block perimeter development with a central and accessible courtyard. In 1945, an additional storey was added to the building.


View onto the courtyard

**Green light: Decree of the Grand Council**

In June 2011, the Grand Council of the Canton of Bern authorized the purchase of the two SBB properties in Mittelstrasse 43 and in Hochschulstrasse for use by the University. The location of Uni Mittelstrasse is a further step in the realization of the “Strategy 3012”, which was included in the Cantonal Structure Plan in 2004. The strategy describes the vision of the long-term spatial development of the University of Bern and envisages a concentration of the University in the Länggass quarter with three central foci and a location for clinical medicine in the Insel Hospital area.

**Modern infrastructure**

Central to the redesign of the building was the coupling of the old fabric of the building with a modern and contemporary architecture. On the one hand, for example, the historical color scheme was restored in the interior design and carefully reinterpreted. On the other hand, the rooms were designed with a lot of glass. The building offers around 650 work spaces, several meeting rooms, various seminar rooms and a departmental library with approximately 100 learning spaces in four reading rooms. The new construction from 2017 supplemented the generous library infrastructure with practical rotating shelves with over 6000 running meters of storage capacity for books, thus enabling an optimal usage of space.

**Fostering communication and networking**

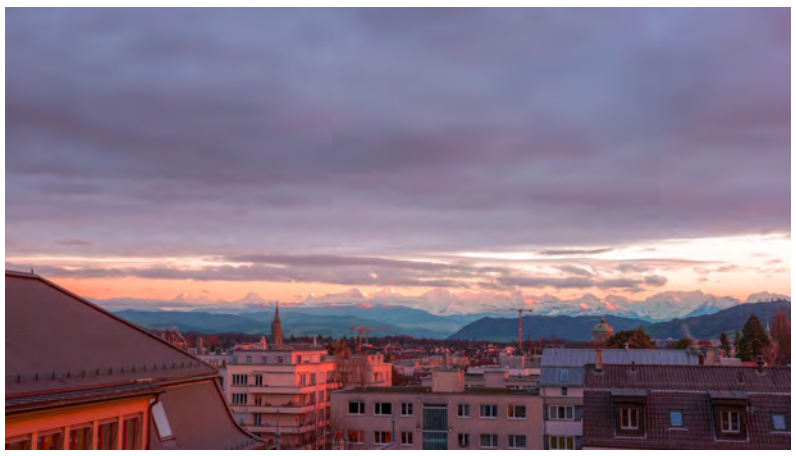
*«I am looking forward to life being breathed into the building »*, says the operational project leader Christa Brünisholz from the Building Development Office of the University of Bern. And she remarks that: *«We want to support active communication. The building was designed to have numerous meeting and communication*

*zones, in which colleagues from the heterogeneous user base can network and exchange knowledge».* As is fitting for a university institution, space should be provided for an open view into the world and collective transparency.

**IML seamlessly operational**

Preparing to relocate an institute with a good 70 employees requires a lot of patience. The IML wants to get to work as seamlessly as possible in its new home. The responsible institute project leader Dr. rer. pol. A. Beschorner from the IML explains: *"Irrespective of all of the visions, concepts and plans, at the end of the day, the main concern is with getting the institute ready to work in its new location as quickly as possible – of course, a well-organized relocation process is helpful here."*

The closer the moving date draws, the more the tension, but also the excitement, grows. The employees are informed and are aware of what to expect. The good, communication-enhancing infrastructure lends itself well to a quick settling-in period, as this corresponds to the open work culture of the IML. The return to everyday working life should be swift.



Astonishing view of the city and the Alps (video by Raphael Laubscher, IML)

**Top infrastructure**

- 650 work spaces
- 13 meeting rooms
- Various seminar rooms
- Meeting and communication zones
- Departmental library with 4 reading rooms with approx. 100 learning spaces and over 6000 running meters of books
- Parent-child room
- Cafeteria with an outdoor area

**The users of the building**

- Institute of Archeological Sciences (IAW)
- Institute of Musical Science (IMW)
- Institute of Theatre Studies (ITW)
- Institute of Art History (IKG)
- Centre for Development and Environment (CDE)
- Interdisciplinary Centre for Gender Studies (IZFG)

**Institutes and units of the Medical Faculty**

- Institute of Primary Health Care (BIHAM)
- Clinical Trials Unit (CTU)
- Institute for Medical Education (IML)
- Institute of Social and Preventive Medicine (ISPM)

# The impact of a masters program in Medical Education

The impact on individuals, organizations and influencing factors: a qualitative study.

2017 2018 Teaching Further training

In this MME-thesis it is planned to investigate what impacts a master of medical education program have on the professional development of its participants, their educational practice and their organization in health profession, 5 years or more after graduation and what the influencing factors are. To investigate this a qualitative approach is envisioned.

This project is about the Masterthesis within the Master of Medical Education MME from Elke Bayha, MD (cand. MME).

**Aims**

Within this MME-Thesis project the impact and influencing factors of a Master of Medical Education program will be investigated.

**Team**

Elke Bayha, MD (cand. MME)
Prof. Dr. Dr. med. et MME Sören Huwendiek (MME-Thesis advisor)
Dr. phil.-nat. et MME Sandra Trachsel (additional advisor)
Prof. Dr. phil. Sissel Guttormsen (additional advisor)

**Project Information**

**Project period:** 2017-2019

**Prof. Dr. Dr. med. et MME Sören Huwendiek**
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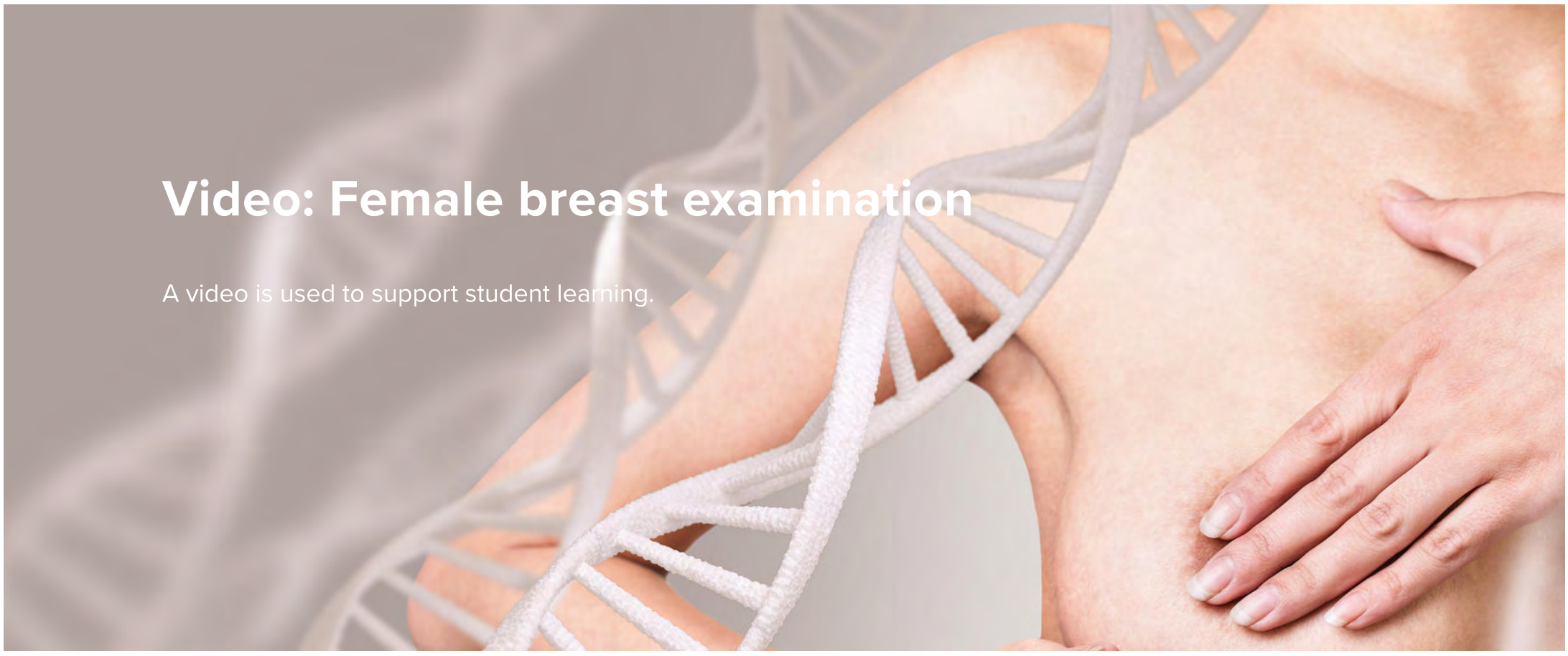

# Video: Female breast examination

A video is used to support student learning.

2016 2017 2018 Service Further training

Clinical-practical teaching will be improved through the use of online teaching material (Blended Learning).

Students will be able to prepare for the respective physical examination course with the help of a video on female breast examination. This should improve the effectiveness of the course. This topic is researched in the framework of a media dissertation.

**Objective**

Creation of the video and use in CST.

**Ordering customer**

Department of Gynecology and Obstetrics, Bern University Hospital (in DE)

**Team**

Dr. med. et MME Ulrich Woermann
Giovanni Ferrieri
Dario Zaugg

**Project information**

Running time: Jan. 2016 – Dec. 2018

**Dr. med. et MME Ulrich Woermann-Walthert**
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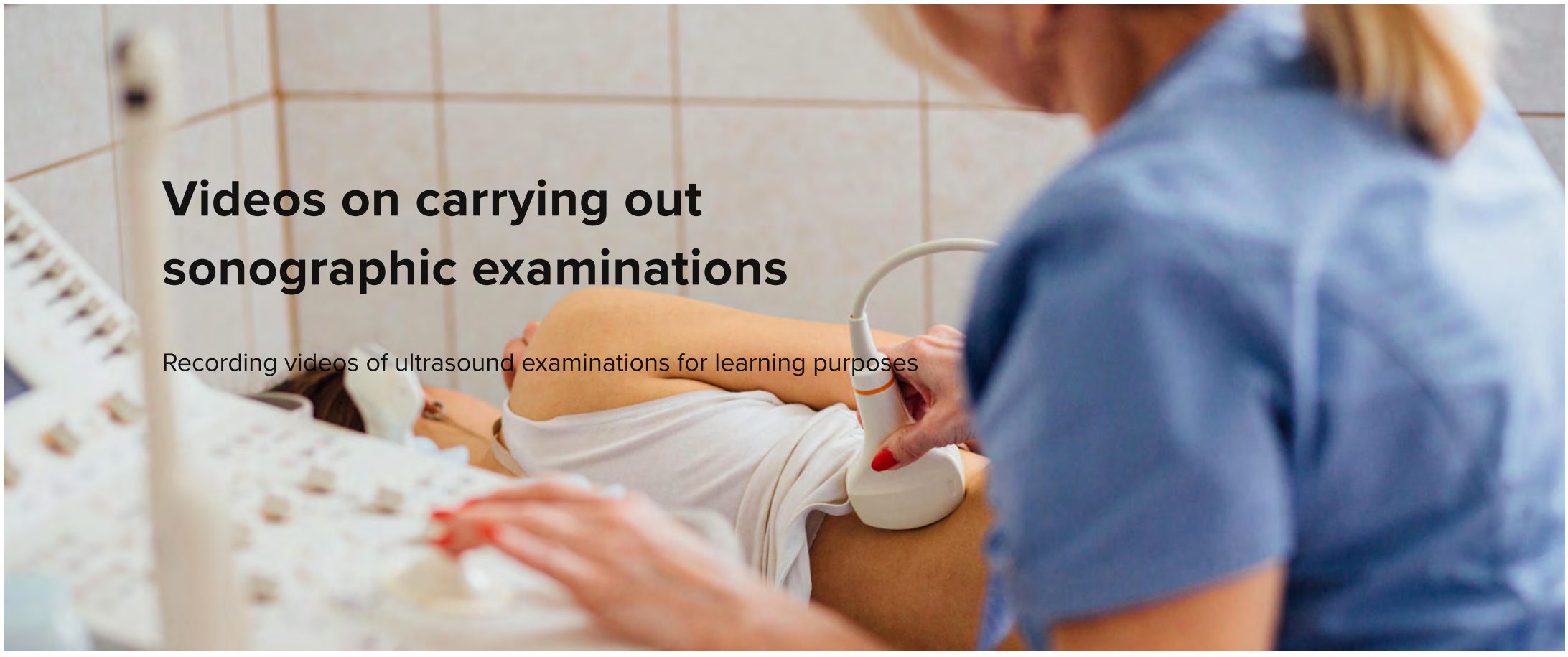

# Videos on carrying out sonographic examinations

Recording videos of ultrasound examinations for learning purposes

2018 | Service | Development | Teaching | Further training

We produced 13 videos to demonstrate sonographic examinations. The project is addressed as part of a media dissertation (dr. med). The videos are implemented in Captivate® (special software for creating E-learning programs, software demos and screen recordings) by doctoral students.

**Objective**

Creation of 13 videos

**Target group**

Medical students, peer tutors, physicians in continuing education

**Ordering customer**

Berne Institute of Primary Healthcare (BIHAM)

**Funding**

University of Bern with 4 Personnel Points

**Team**

Dr. med. et MME Ulrich Woermann
Giovanni Ferrieri
Norbert Braun
Dario Zaugg

**Project information**

**Running time:** Jan. - Dec. 2018

**Dr. med. et MME Ulrich Woermann-Walthert**
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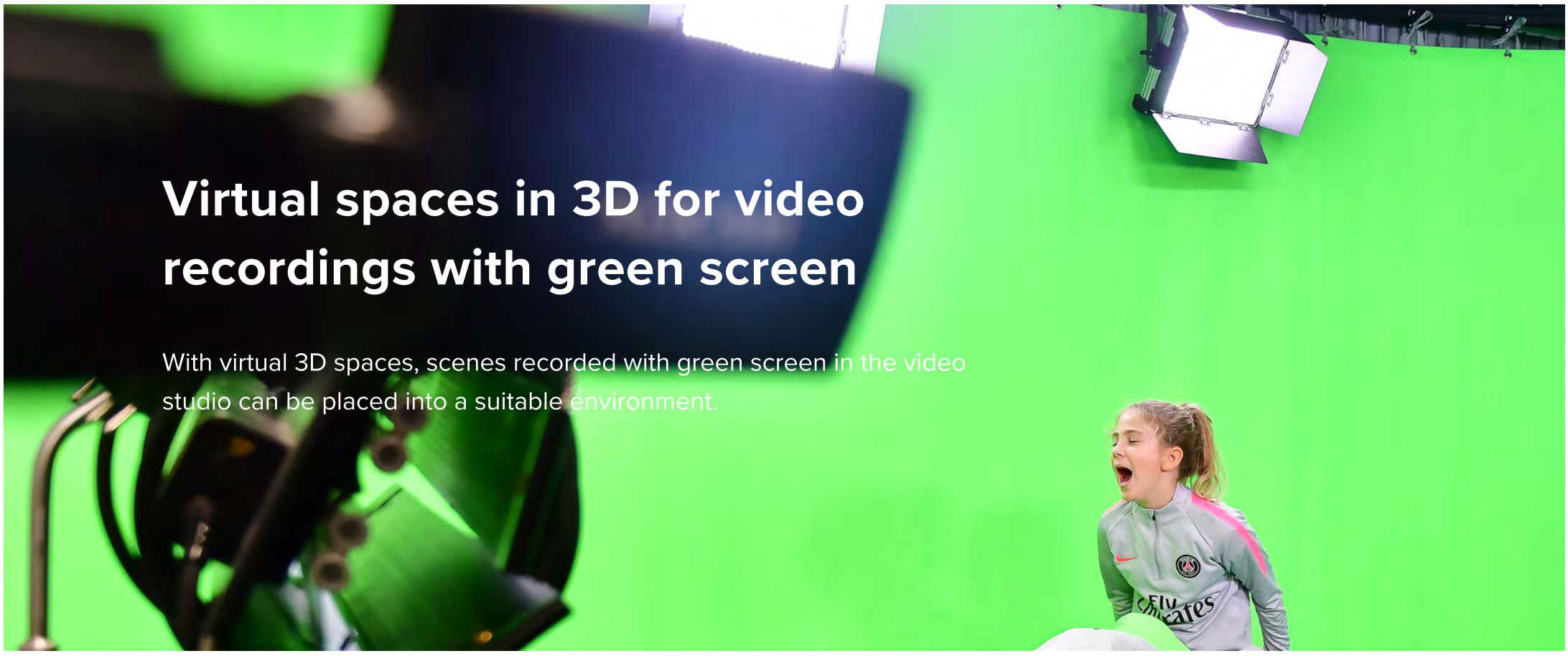

# Virtual spaces in 3D for video recordings with green screen

With virtual 3D spaces, scenes recorded with green screen in the video studio can be placed into a suitable environment.

2018 | Service | Further training

By using virtual 3D-Rooms, video scenes recorded with green screen, can be transformed to a virtual doctor's office. In the framework of her individual project work as a mediamatics student, Delia Abbühl has created a virtual medical doctor's office.

**Objective**

Virtual doctor's office, which can be used as an environment for video recordings with green screen.

**Team**

Delia Abbühl
Adrian Michel

**Project information**

**Running time:** Jan. - April 2018

**Delia Abbühl**
Secretary, Media counselor

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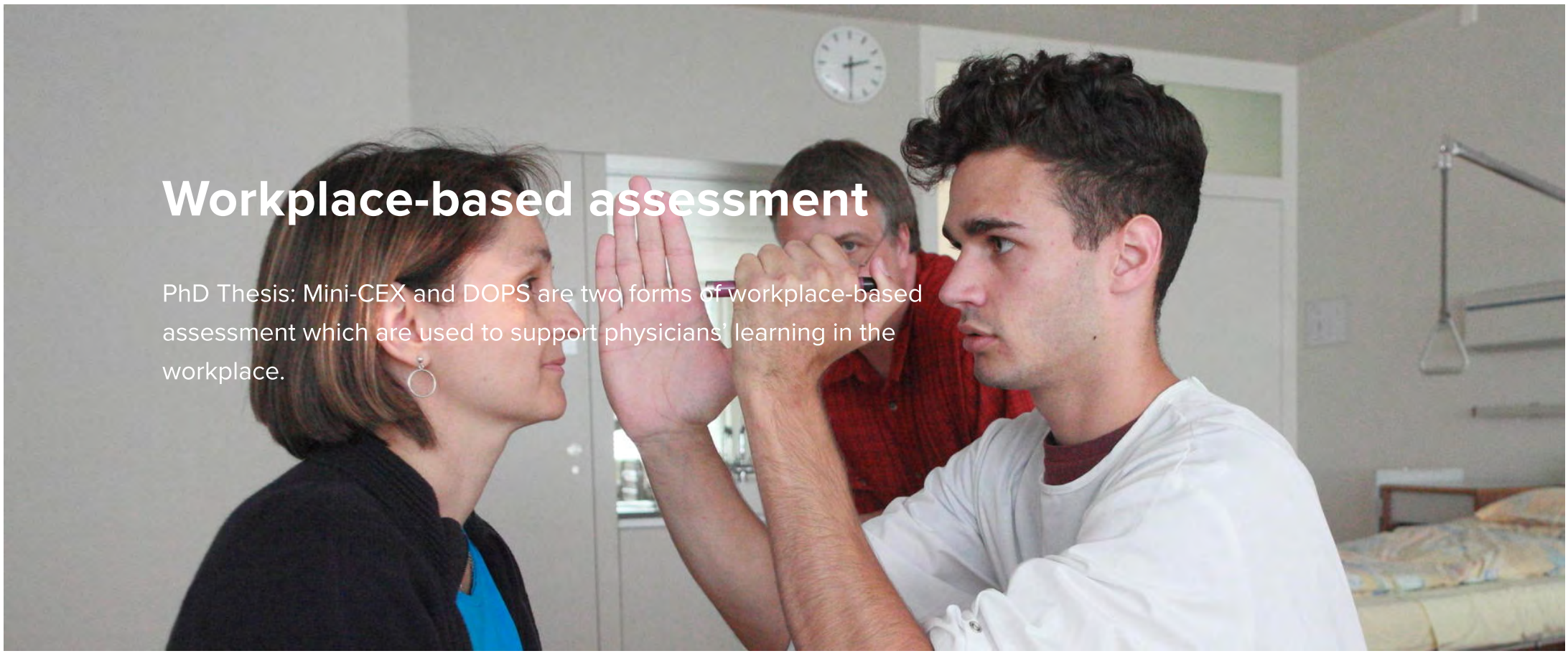

# Workplace-based assessment

PhD Thesis: Mini-CEX and DOPS are two forms of workplace-based assessment which are used to support physicians' learning in the workplace.

2016 2017 2018 Assessment Research Teaching

In the framework of this PhD Thesis, we aim to find out what evidence there is regarding the effect of Mini-CEX and DOPS on the learning of postgraduate medical trainees, and which factors influence this effect.

**Objective**

This PhD Thesis aims at three publications:

1. A systematic review regarding the effectiveness of Mini-CEX and DOPS;
2. A qualitative synthesis regarding the factors which influence the effectiveness of these instruments;
3. A focus group study on how the learning process of postgraduate medical trainees can be optimally supported through Mini-CEX and DOPS.

**Partner**

Graduate School for Health Sciences

**Team**

Andrea Lörwald (PhD student)
Prof. Dr. Dr. med. et MME Sören Huwendiek (thesis supervisor)
and further employees of the IML.

**Project information**

**Running time:** 09/2014 – 02/2018

The thesis has been successfully defended in February.

**Dr. phil. Andrea Carolin Lörwald**
Scientific collaborator

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