Centre of Excellent Simulation and eLearning (SIMeLEARN)

Importance

Healthcare is in constant transition. As new technologies, medical diagnoses, and treatments surge ahead and multiply, so do patients' knowledge of their medical history and healthcare developments. Today's healthcare professionals need expertise about more than just diagnostics and treatment. Social skills to interact with diverse patient groups and their next of kin as well as healthcare professionals' motivation to commit to lifelong learning and teaching are becoming increasingly important. At the same time, healthcare education is moving from the conventional settings of lecture halls to very diverse learning locations and training methods, e.g. using e-learning programmes at home or in simulation centres. By including development and implementation of new and innovative forms of teaching and learning, SIMeLEARN will establish a culture for lifelong learning amongst both students and staff at the University of Stavanger (UiS). Students, teaching staff and healthcare professionals will all significantly expand their experience and increase their competence in the use of simulation and e-learning tools in higher education and clinical practice. SIMeLEARN will thereby provide a robust educational ecosystem for a new generation of healthcare professionals prepared and motivated to tackle the future challenges of a healthcare system in constant transition.

Despite patient safety being high on the political agenda in Norway, the adverse event rate has remained at 13-16% for hospitalized patients for the last years. Early involvement of teaching staff, and delivery of multiprofessional simulation and e-learning will help us avoid certain pitfalls in the way of safe and effective care for patients, their next of kin, and for the healthcare workforce itself. Simulation and e-learning are endorsed in higher education for their positive impact on students' learning. Simulation-based training is a generic term for a very broad group of interactive learning techniques that include e-learning, computer-driven tests and games (Serious Games), virtual reality simulation, instruments linked with software for training complex procedures, and augmented reality as well as scenario training involving manikin or standardized patients (trained patients or actors).

The move to incorporate e-learning and simulation in higher education is supported by leading bodies such as the European University Association, the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the UK's Higher Education Academy as well as the Norwegian Government. In accordance with these aims and objectives, SIMeLEARN will improve the quality of education and facilitate lifelong learning among students in all healthcare professions and disciplines at the Faculty of Health Sciences (HS).

The consortium of SIMeLEARN consists of the Faculty of HS at UiS, Laerdal Medical and Stavanger University Hospital (SUS). The Faculty of HS offers two bachelor programmes, seven
master programmes and one continuing education programme. In total, SIMeLEARN will have a
direct impact on more than 1200 students yearly. This consortium has a long-standing and strong
tradition for innovations and development through collaboration, and has the qualified personnel and
infrastructure to make the move from being an important player in the area of simulation and e-
learning to becoming one of the leaders in the global transition in healthcare.

Vision and Objectives
We will provide excellent, innovative learning methods to educate and prepare healthcare personnel
for professional practice, lifelong learning and continuous quality improvement. We will achieve this
by focusing on the three following objectives:

1. Develop and globally implement innovative simulation and e-learning methods in
collaboration with students, faculty and the professional practice field.
2. Prepare students for the transition from education to professional practice by using simulation
and e-learning to expose them to realistic professional and clinical challenges, thereby
equipping them with lifelong learning skills.
3. Use simulation and e-learning to implement quality improvement in clinical practice, thereby
enhancing the students’ learning experiences.

Documentation of educational quality in existing provision

Input factors (1) Enduring leadership commitment to educational quality. For decades, UiS has
systematically worked towards becoming a national leader in simulation and e-learning. As early as
in 1993, UiS developed the first simulator for anaesthetics and intensive care (PatSim) in Norway. In
1994, the Society for Simulation Applied to Medicine (SESAM) was established as a cooperative
venture between UiS, Copenhagen University Hospital and Leiden University Medical Centre. After
decades of close collaboration between UiS, SUS and Laerdal Medical, the Stavanger Acute Medicine
Foundation for Education and Research (SAFER) was established as a partnership among these three
in 2006 [Link1]. The main goal of SAFER is to enhance clinical competence and improve patient

SIMeLEARN will use the pedagogical framework The Circle of Lifelong Learning. This is a framework consisting of five
interrelated modes of learning and illustrates an ongoing process of achieving competence. We believe that The
Circle of Lifelong Learning will help build competence more efficiently – in a lifelong perspective.
safety, primarily through simulation. SAFER annually has approximately 6800 course participants (students from the Faculty of HS included). SAFER obtained full accreditation from the European Health Simulation Association, for the period 2018-2022. The accreditation confirms academic solidity and quality, and has been achieved through a comprehensive process of documentation and inspections. SAFER is nationally the first and only centre to receive this kind of accreditation and the third centre internationally to achieve accreditation. This collaboration has positioned Stavanger as a national and international centre for simulation, activities, studies, research and development within the field.

The leadership at UiS established NettOp in 1999/2000, to give strong, proactive support to the development and implementation of e-learning. NettOp is recognized as a nationally leading developer of e-learning solutions in Norwegian higher education, supporting projects both at the Faculty of HS, the rest of UiS as well as at other national and international educational institutions. With unwavering institutional support, NettOp has placed UiS at the forefront in the development of web-based e-learning applications. This focus on e-learning has also strengthened the UiS-Laerdal Medical collaboration resulted in innovative simulation laboratories with state of the art technical manikins/simulators and devices. These simulation laboratories, along with the UiS studio for online lectures, has successfully facilitated students’ learning outcomes. The educational facilities can be accessed by both students, faculty and health professionals.

To give an added drive to the field of healthcare and technology, UiS established a new Research Network for Health and Technology in 2018. The network aims to create new projects in health technology and to establish interprofessional, interdisciplinary research environment with international impact. The use of simulation in the health sector and education is one of the key thematic areas in the network. Moreover, Norway Pumps & Pipes Link2 has been another successful collaboration between UiS, SUS, Norwegian Research Centre AS (NORCE), and Greater Stavanger. The synergies and similarities between the petroleum and health sectors revealed a clear need for transfer of technology and competence between the two, and the establishment of Norway Pumps and Pipes was a logical next step for the partners.

To further strengthen collaboration, HelseCampus Stavanger (HCS) Link3 was established by UiS, SUS, SAFER, NORCE and Stavanger municipality. HCS will be a key regional health cluster, which will act to unify improved health education with innovation in the health sector to support challenges faced in primary- and specialist healthcare institutions. SIMeLEARN will be an important addition to HCS and will benefit from the infrastructure being developed as a part of the HSC initiative, e.g. a new innovation and test centre on the university campus.

UiS is the only university in Norway that is member of the European Consortium of Innovative Universities (ECIU) Link4. ECIU has a specific interest in creative, learning-centred and future-
focused teaching approaches that foster social entrepreneurship and smart use of technology. All members of ECIU share a commitment to the development of quality educational practices that promote innovation and the pursuit of excellence in teaching and learning. In February 2019, ECIU submitted its proposal for the European University Link5. With this proposal, ECIU shows that it is ready to bring about innovation and entrepreneurship to Europe’s higher education landscape. In March 2019, UiS was also assigned the Knowledge Centre for Education. The centre will produce, collect, synthesize, and disseminate research about challenges in the educational sector. SIMeLEARN will collaborate closely with ECIU, the European University and the Knowledge Centre for Education in attaining its objectives.

Today, UiS’ strategy is to be in the forefront for lifelong learning, and one of the main goals in the Faculty of HS’ strategy is to establish at least one Centre for Excellence in Education. The Faculty of HS has a department for Quality and Health Technology with focus areas that are in line with priorities for the national and international health services of the future. The strategic activities listed above are a testament to the consortiums’ strong commitment to prioritize and invest in SIMeLEARN. The institutional leadership will commit the necessary resources to promote SIMeLEARN as a leader in simulation and e-learning, as we continue to develop innovative educational methods to promote outstanding education for lifelong learning. 2) Proactive faculty and extensive research portfolio. SIMeLEARN has researchers with a considerable international network in e-learning and simulation. This has resulted in national and international projects1, and high rates of publication and organizational responsibility for key conferences and expos: SESAM Conference 2012, MedSim Conference 2018, and the annual Nordic Edge Expo and Conference. Several of the studies15 16 17, including a number of doctoral thesis 18 19 20, investigate students’ experiences from innovative simulation and e-learning approaches. The staff at the Faculty of HS has initiated and organized the only research group on e-learning and simulation (ELOS) at UiS Link6. The Faculty is also home to the Centre for Resilience in Healthcare (SHARE) Link7, with research within societal safety, risk management, health and medicine, change management, sociology, psychology, patient involvement and organizational studies. Recently Guise19 defended her thesis that illuminated the complexity of telecare implementation and staff training. This PhD was part of the SHARE project Safer@Home. In addition, SUS/SAFER hosts the Regional Coordinating Unit for Simulation (RegSim). The main goal for RegSim is to coordinate and develop clinical skills- and simulation activities in the Helse Vest region. 3) Highly committed and involved students. Students at our university show a high degree of involvement. In 2017 and 2018, UiS had the highest response rate (49.4% and 59.1, respectively) among all universities in Norway in NOKUT’s survey called

---

1 One of the project was recommended by the Norwegian Centre for International Cooperation (SIU) to be a “Best practice example” because of the open and clear communication between the partner organizations in the project.
Studiebarometeret Link8. At the Faculty of HS, the response rate in 2018 was 69%. The students support the efforts made to improve and expand the health educations to make more use of simulation scenarios and e-learning tools for their skills improvement and lifelong learning. Consequently, the students at UiS have contributed to this application through two workshops. They have participated in the development of the four focus areas for SIMeLEARN and have given constructive and important inputs. In addition, we have received feedback on the text and content in this application. They will continue to have an active role in the development of SIMeLEARN. 4) **Focus on recruiting highly qualified personnel to the health services.** The Bachelor of Nursing is the largest programme (about 300 first year students) at the Faculty of HS and has the highest number of applicants (n=4258 in 2018) among all nursing programmes in Norway. Consequently, the competition is high among the students and applicants who are eligible to attend our programme have good grades. In 2018, two new study programmes were formally accredited at the Faculty: Bachelor of Paramedicine Link9 and Master in Midwifery studies Link10. The former bachelor programme had a very high number of applicants for the study year 2019/2020, with approximately 40 applicants per admission. Both programmes will contribute to the recruitment of highly qualified personnel to specialist- and primary healthcare. The students attending these programmes will be important contributors to SIMeLEARN as the curriculums include extended use of simulation and e-learning. In addition, the faculty has an English master programme in Prehospital Critical Care that is the only one in Europe. Simulation and e-learning is used in this programme, too.

**Process factors:** 1) **Research-based education.** SIMeLEARN has very active researchers in the field of simulation and e-learning (see the Link11 for the consortium publication list). The members of ELOS are at the forefront in research of e-learning at UiS and have in recent years been particularly active on the implementation of digital learning tools. For instance, vSim®2 was introduced so that our students could simulate clinical nursing scenarios. By using vSim®, the students have the opportunity to interact with virtual patients and receive direct feedback on their performance and actions. Moreover, a doctoral candidate18 at the Faculty of HS, initiated a collaborative conducted simulated-based team training day for 3rd year nursing and 4th year medical students at SAFER. 2) **Implementing novel models in simulation and e-learning.** Since 2006, simulation has been increasingly utilized by all healthcare professional programmes at the Faculty of HS. Approximately ten weeks of the Bachelor of Nursing programme are spent on simulation-based learning, reflecting upon practical skills in the simulation laboratory at UiS-SAFER. Feedback from students has been overwhelmingly positive. The faculty has also established a Master course in simulation-based learning (10 ECTS) which is unique among the Nordic countries.

---

2 vSim® is an American simulation tool, developed in 2014 through a collaboration between Wolters Kluwer Health, Laerdal Medical and the National League for Nursing.
During the first two years of our Bachelor of Nursing programme, the students are trained in many clinical skills using different levels of simulation. In order to increase the amount of simulation additionally, a group of 2nd year students were involved in the co-production of a variety of clinical skill scenarios in 2014. The scenarios were designed to be used in peer-to-peer training while giving the students the opportunity for feedback and self-assessment. The clinical training and scenarios were reported to suit the students’ needs. In specialised master nursing programmes, such as master’s in Anaesthesia, Operating Room, and Intensive Care Unit Nursing, skills training and full scale simulation are continuously increasing. Additionally, new programmes (Bachelor of Paramedicine and Master in Midwifery) will both involve significant components of simulation training. Moreover, the Faculty of HS has been pioneers providing a multifaceted, innovative and high-quality e-learning environment. For instance, over 120 multimedia e-compendiums and podcasts have been developed to improve learning, including several game-based solutions for educating students in critical subjects in substance abuse treatment, and various massive open online courses (MOOCs), including those pertaining to medication calculation as well as hundreds of YouTube videos on practical procedures. Our e-compendiums were unique in an international context at the time of their first publication (2009), and represented a completely new e-learning concept. The close collaboration between the Faculty of HS and NettOp has led to the development of tools and methodology that have laid the ground for two ERASMUS+ Strategic Partnership projects DIMEANE and DIGISIM. In addition, an ERASMUS+ Knowledge Alliances Application Interactive 360° video simulation has been submitted by the Faculty of HS and NettOp.

3) Systematic and in-depth student evaluation and assessment.

Every year, the faculty uses the results from NOKUT’s survey Studiebarometeret systematically to ascertain how we can improve our study programmes for the students. The students appreciate that their feedback has a direct implication for their study programme. In addition, the faculty is focused on research projects aiming to evaluate how students experience innovative learning methods. For instance, the research project about e-compendia indicates that our students perceive the e-compendia as better learning tools than both traditional learning tools and other electronically supported learning tools. Moreover, the use of the virtual simulation tool vSim® was evaluated from the students’ perspective. Findings indicated that the majority of our nursing students evaluated the virtual clinical scenario from vSim® as useful, realistic and educational in preparing for clinical placement. Another research project explored how the students experienced student-created digital storytelling in relation to clinical studies. The results showed that the use of digital storytelling triggered involvement, promoted feelings of ownership with regard to the presented reflection, and resulted in a deeper sense of understanding among the students. Additionally, we have three doctoral theses where authors have investigated the effects of simulation based learning among our students.

4) Student commitment and involvement.

Student
engagement and their perspectives on educational programmes are crucial to improve the quality of each study programme. In SIMeLEARN, the involvement of students is therefore a key to understand how we can continuously develop new simulation and e-learning tools that make the students better prepared for working in the health sector. Previous experience with student engagement at the Faculty of HS is exemplified in the ERASMUS+ project, where the idea of a practice skills training simulation app was largely identified by the students. In this project, the students worked closely with the project team and participated through the principles of a “living lab” where user data from the student population were collected and analysed during testing of the app. At the Faculty of HS, researchers include both master and bachelor students in producing academic papers. To cite an example, Associate Professor Rosenberg has recently published an article together with a bachelor student.

**Outputs factors.**
1) **High credit points per student.** At our Bachelor programme in nursing, the students produce an average of 51.95 ECTS per year, and at our Master in specialist nursing, the ECTS per student was 50.15. This is higher than the average ECTS per student at universities in Norway (45.21 ECTS per year).
2) **High job relevance.** NOKUT’s Studiebarometeret at our Bachelor programme in nursing gives satisfaction scores of 3.8 (of max 5.0) relevance for jobs which is better than the national scores (3.4).
3) **Innovation.** ECIU promotes innovation in teaching and learning in several ways. Among them is the annual Team Award, for which member universities can nominate new creations in this field. Associate Professor Kristin H. Urstad was one of the finalists with the ERASMUSNURSING app Link12.
4) **Student-health sector relation.** It is common for students at Faculty of HS to work with the health sector on Master thesis projects, solving clinical problems.

**Centre Plan – SIMeLEARN**

The structure of the centre is shown in the figure to the left. The Executive Board (EB) will consist of the centre director (Ass. Prof. Ingunn Aase), a centre coordinator (50%), and focus area managers (FAM) (20%) for each focus area, (FA). Each FA will have a student reference group that works in close cooperation with the FAM. The EB will coordinate the centre’s activities and assess that progress is according to the plan. The Steering Committee (SC) will consist of representatives from the municipality, UiS, SUS, Laerdal Medical, the Faculty of HS, student representatives, the study programme managers, and representatives from the ECIU partners. The General Assembly (GA) consists of student representatives from all courses and study
programmes affected by SIMeLEARN, the student reference group for each FA, and all the employees involved in the centre. GA will have annual meetings sharing results from the different work packages and stimulating further innovations. The Dissemination and Evaluation Committee (DEC) will be led by the centre director and will have the overall responsibility for dissemination and quality evaluation. The Advisory Board (AB) will consist of representatives from the primary- and specialist healthcare sector, and international experts within the field of simulation and e-learning.

SIMeLEARN is organized in four focus areas with a high degree of synergies between them (see figure to the left). Through the focus areas, we will apply simulation and e-learning tools for engaging the students in the process of learning in a lifelong perspective. With innovative use of simulation and e-learning tools in the educational setting, SIMeLEARN will take a national and international role shaping the future professional practice in various health contexts. Each focus area will include one PhD candidate to push state-of-the-art in simulation and e-learning forward.

Focus Area 1: Simulation and e-learning as Learning Methods

**Aim:** Through a process of co-creation, students, faculty and clinical professionals will explore and extend current simulation and e-learning methods and approaches. The core educational challenge is to prepare students to handle the practical complexity of current and future healthcare in adequate ways. Simulations and e-learning tools lead to effective learning through focus on realism, relevance, repetitions, adaptive and individualized learning, varying difficulty, controlled environment, and feedback. Simulation based education with possibility for repetitive practice is superior to traditional health education in achieving specific clinical skill acquisition and maintenance. **Current Activities:** SAFER has developed a basic course for becoming a facilitator in simulation called Train the Trainer (TTT). The course follows the curriculum for EuSim, which is the leading course for facilitators for medical simulation in Europe. Additionally, at the Faculty of HS, an e-learning tool using student-created digital storytelling from experiences in clinical practice has been piloted in nursing education. Reflection through shared storytelling is an established and well-documented way of learning and reflection in clinical placement studies, especially in nursing education. The use of digital storytelling is a trigger for engagement, promotes feelings of ownership of the reflection, results in deeper understanding, and are highly appreciated by the students. **Further Activities:** Through SIMeLEARN we will design scenarios for simulation stemming from the students’ own experience, and by using different approaches to learning, such as peer-learning, tutor-learning and facilitator-
oriented learning. For the latter approach, the students design their own simulations with guidance from a facilitator. The facilitator supports the students to create their own learning goals. Simulation scenarios will focus on both training of technical- and non-technical skills, team- and inter-disciplinary/professional training. We will apply new digital technology including Virtual Reality, Augmented Reality, and Mixed Reality to develop rich and engaging scenarios. To further expand the current learning methods we want to redesign the TTT course and train a select cohort of bachelor and master students as well as faculty to be facilitators. In addition, we will arrange peer-steered advanced courses for previously trained faculty.

**Outcome:** Within the five-year project period, we will fully integrate simulation-based learning and e-learning methods into study programmes at the Faculty of HS. We will provide tailored TTT courses for undergraduates, postgraduates and faculty.

**Focus Area 2: Collaborative Learning between Students and Professionals**

**Aim:** To improve the transition between education and professional practice, and provide for lifelong learning skills. The need to work collaboratively and the ability to respond to changes brought about by new work requirements, emerging practices and transformations in patient needs will increase in importance within healthcare. In SIMeLEARN we will apply collaborative learning between education and profession to prepare the students to adapt and respond to changing occupational and work practices. Collaborative learning is a pedagogical approach where the students and professionals learn together by capitalizing on one another’s knowledge, skills, resources, experience, and ideas.

**Current Activities:** The Faculty of HS has developed a large number of e-learning tools, which can be used in interprofessional settings. Importance has been given to simulation of non-technical skills for interdisciplinary collaboration in healthcare. Currently, the faculty’s interprofessional simulation training includes 3rd year nursing students and 4th year medical students and is highly appreciated by all participants. Holistic simulation training in large groups has been successfully implemented. In addition, we have an ongoing ERASMUS+ project DIGISIM. The object of the project is to supply European nursing students with an innovative digital pedagogical tool to enhance their clinical skills. By using digital technology, students will be able to train both independently without the lecturer as well as in collaboration with peer-students. Tailored feedback based on individual needs and competence levels provided by the simulation tool will provide a student-centered approach.

**Further Activities:** We will apply simulation and e-learning methods introduced in FA1 as pedagogical approaches to collaborative learning. We want the students to be change agents both in the primary- and in the specialist healthcare sector. We will achieve improvements in clinical practice by using simulation and e-learning methods and tools. As an example, we will expand the use of digital storytelling making it a collaborative learning tool for students and professionals in clinical practice scenarios. Moreover, we will further develop the interprofessional simulation training, especially for the study programmes (Bachelor in Paramedicine and Master in Midwifery). The primary healthcare
service at Bjerkreim municipality will collaborate through guiding and sharing experiences to create relevant scenarios for simulation activities, in order to prepare students for professional life. **Outcome:** Students who are both well-prepared, confident and competent about carrying out their professional duties and activities. We will provide interprofessional simulation training to at least two more study programmes.

**Focus Area 3: Quality Improvement Methodology**

**Aim:** Develop students’ knowledge about how to identify opportunities for improvement, prepare and implement plans for improvement, and evaluate the effect of the implementations. Through FA1 and FA2 we have equipped the students with a toolkit of simulation and e-learning methods to prepare them to handle the practical complexity of today’s work arenas. In FA3 we want the students to apply the toolkit for quality improvement, and use simulation and e-learning tools to improve patient safety. The aim is to reduce harm and improve quality of care by enhancing high-reliability within the health sector through use of simulation and e-learning. There are different approaches to apply simulation and e-learning for quality improvement. We will use the Plan-Do-Study-Act (PDSA) approach, which can be defined as a four step process for continual improvement. **Current Activities:** We have an ongoing research project, QUALinCLiNSTUD, including developing, piloting, and evaluating an innovative web-based supervision and assessment programme. This involves the development of innovative e-learning tools, to target quality improvements in clinical supervision and assessment in a nursing home context. Another project conducted by SHARE is the ‘Improving Quality and Safety in Primary Care—Implementing a Leadership Intervention in Nursing Homes and Homecare’ (SAFELEAD). The aim of this project is to develop and evaluate a research-based leadership guide for managers to increase quality and safety competence. A web-based version of the guide is published and publicly available for all Norwegian healthcare services. In addition, our consortium has the project *Prehospital CT in acute stroke or head injury* (the STROKE project). The project introduced simulation training sessions in conjunction with an improved treatment protocol as part of a quality improvement project to reduce door-to-needle times in stroke thrombolysis. Simulation training led to an immediate and significant reduction of median door-to-needle time in stroke thrombolysis. **Further Activities:** We want the students to design relevant scenarios for simulation and run the scenarios as PDSA cycles. In the P-phase, the students must engage stakeholders, identify concerns (possible harms), develop intervention to test using simulation, and identify measures of success. In the D-phase, the students conduct the simulation, and record or observe. The S-phase contains debriefing of participants and observers with reflective practice, and identification of solutions and improvements. In the A-phase, the students decide on either to adopt, adapt or abandon based on analysis. Thereafter the simulation is repeated, incorporating new changes. When refined, the process moves to new cycles based on simulation-based training. **Outcome:** During the course of
their studies, the nursing students will have completed an entire PDSA cycle. This would mean that nursing graduates entering the workforce would be familiar with quality assurance approaches and will, without further training, be in a position to contribute to quality improvement processes in the workplace.

**Focus Area 4: Sharing and Diversity – Locally and Globally**

**Aim:** Creating best practice in simulation and e-learning methods and approaches that can be incorporated in education, and transferred both to national contexts as well as global, culturally diverse contexts. **Current Activities:** In 2019, the Faculty of HS will start a Master programme in Midwifery, with significant components of simulation training. A support to this programme will be an ongoing international research project, Safer Births, Link13. The project will develop new knowledge and new innovative products to better train and equip health workers to save lives at birth. The project has around 100 researchers/research staff and engineers - a multidisciplinary teamwork - including 12 PhD candidates, 11 Master students, and around 20 supervisors with PhD. **Further Activities:** To develop a virtual library of simulation scenarios and e-learning tools that can be available at other universities, organizational settings and in Low and Middle Income Countries (LMIC’s). The consortium partners have an extensive infrastructure, such as laboratories and test centres/labs to facilitate for simulation based learning and sharing of knowledge and competence. The nursing laboratories at UiS, the simulation centre SAFER, and the HealthCampus Stavanger Innovation and Test Center, are main building blocks in this infrastructure. The TTT-courses developed as a part of FA1 will be further developed and adapted to international conditions, e.g. for midwifery students from Tanzania. We will also develop online and distance TTT-courses. **Outcome:** Collaborative learning to develop and share best professional practice adjusted to diverse professional and cultural contexts. We expect that SIMeLEARN will contribute to United Nations sustainable developments goal (no. 4) improving quality in higher education. We believe that equitable quality education and lifelong learning contributes to good health and well-being (no 3). Competent health personnel in LMIC’s are essential to achieve good health and quality of life. **Evaluation**

We believe that SIMeLEARN will contribute to develop UiS to be in the forefront of innovative health educations. Consequently, the Faculty of HS will attract motivated and qualified students and staff. SIMeLearn will systematically collect both qualitative and quantitative data on student satisfaction and learning outcomes from the centre’s new and innovative learning and teaching methods and tools. We will gather data from alumni, instructors, NOKUT (Studiebarometeret) and associated partners in the specialist and primary healthcare sector. The bi-annual employee-survey will provide information about how SIMeLEARN may influence the staffs’ work environment.
In addition, we will establish various evaluation activities through focus group interviews with students, interviews with representatives from the primary- and specialist health sector. The redesigned TTT-courses (FA1 and FA4) will be regularly evaluated. We will measure the number of students, staff, and healthcare professionals that have completed the TTT-courses. SIMeLEARN will develop questionnaires for systematic evaluation, for example, we will use international standardized surveys to assess students’ learning experience and learning outcome. We will measure the number and nationality of the users of the digital library and the online TTT-courses developed in FA4. Moreover, we will develop digital questionnaires to get user feedback on these tools. Thus, the evaluation of SIMeLEARN will rely on different sources of information, and the impact of the centre will be included in the annual report.

Dissemination of knowledge and practice
Several of the staff of SIMeLEARN already have a high publication and citation record and we aim at further intensify our peer-reviewed publications in high prestige international journals. The four PhD candidates will contribute with dissemination of research results from each focus area in journals and conferences, e.g. the annual international conference SESAM. We will also contribute to national conferences such as MedSim Norge, which is the number one national networking conference for simulation in the healthcare sector. We will invite our regional, national, and international partners to attend annual workshops and seminars within all four focus areas to present preliminary findings and project updates. These events will contribute to knowledge transfer and also mobility for students and staff. In addition, a SIMeLEARN national conference will be arranged in the year 2022. SIMeLEARN will target audiences in a position to influence and bring about change, especially within the primary- and specialist health sector, but also at our global academic partners. The main activities will be seminars and tutorials where we demonstrate new and innovative learning tools and methods developed in the centre. All seminars and tutorials will be web casted to include participants globally. We will also establish a centre website and a SIMeLEARN newsletter for dissemination of results from the different work packages. One of the visions of SIMeLEARN is to create and share best practice in simulation and e-learning methods and approaches, and transfer knowledge nationally as well as globally. In FA4 we will develop a virtual library and online courses, and we assume that other national and international higher education institutions will use these open available resources. The knowledge, competence and methods developed in SIMeLEARN can be useful for other sectors and fields of study than health. SIMeLEARN has Norway Pumps & Pipes as associate partner. Norway Pumps & Pipes is a platform to bring together professional groups who may not otherwise have the opportunity to interact for the transfer of knowledge and technology knowhow. SIMeLEARN can use Norway Pumps & Pipes as a tool to reach outside its own field of study.
References


Reference list for URL

Link 1. https://www.safer.net/
Link 2. http://www.pumpsandpipes.no/home
Link 3. https://www.uis.no/samfunn-og-samarbeid/helsecampus/
Link 8. http://studiebarometeret.no/no/
 Budget for SIMeLEARN, first five-year period, including motivation for costs

<table>
<thead>
<tr>
<th>The financial plan – the whole period</th>
<th>Total</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own financial contribution</td>
<td>26 464</td>
<td>4 985</td>
<td>5 134</td>
<td>5 288</td>
<td>5 447</td>
<td>5 610</td>
</tr>
<tr>
<td>Diku</td>
<td>39 665</td>
<td>7 939</td>
<td>7 904</td>
<td>7 971</td>
<td>7 940</td>
<td>7 911</td>
</tr>
<tr>
<td><strong>Total in finance plan</strong></td>
<td><strong>66 129</strong></td>
<td><strong>12 924</strong></td>
<td><strong>13 038</strong></td>
<td><strong>13 259</strong></td>
<td><strong>13 387</strong></td>
<td><strong>13 521</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating costs – all years</th>
<th>Total</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff and indirect costs</td>
<td>37 954</td>
<td>7 149</td>
<td>7 363</td>
<td>7 584</td>
<td>7 812</td>
<td>8 046</td>
</tr>
<tr>
<td>R&amp;D services</td>
<td>4 500</td>
<td>1 100</td>
<td>1 100</td>
<td>1 100</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Equipment</td>
<td>16 700</td>
<td>3 400</td>
<td>3 300</td>
<td>2 700</td>
<td>3 700</td>
<td>3 600</td>
</tr>
<tr>
<td>Other operating costs</td>
<td>6 975</td>
<td>1 275</td>
<td>1 275</td>
<td>1 875</td>
<td>1 275</td>
<td>1 275</td>
</tr>
<tr>
<td><strong>SUM costs</strong></td>
<td><strong>66 129</strong></td>
<td><strong>12 924</strong></td>
<td><strong>13 038</strong></td>
<td><strong>13 259</strong></td>
<td><strong>13 387</strong></td>
<td><strong>13 521</strong></td>
</tr>
</tbody>
</table>

**SIMeLEARN – Motivation for costs**

The financial plan described for SIMeLEARN reflects the centre plan, the work packages and the organization of the centre.

**Contribution from Diku** is for establishing and run the centre organization, procurement of R&D services, and other operating expenses. The centre organization includes a full time position as centre leader, a 50% position as centre coordinator (administrative coordinator), and four 20% positions as Focus Area leaders (contribution from Diku will finance one of the Focus Area leaders). R&D services includes services for development of different simulation scenarios and e-learning tools for all four Focus Areas, and development of the digital library in Focus Area 4. In Focus Area 2 we will cooperate with the primary health care in a municipality in Rogaland, and parts of the budget for R&D services will used for this purpose. Other operating costs includes travel expenses both to visit external partners nationally and internationally, and for arranging and attending conferences, workshops and seminars. We plan to arrange annual workshops and seminars within all four Focus Areas. In addition, a SIMeLEARN national conference is planned for in the third year (2022). There will also be travel expenses for members of the Steering Committee and the Advisory Board. During the whole project period, there is a need for development of simulation based learning facilities and investments in equipment continuously vitalizing up laboratories and learning environment at the UiS campus. Equipment also includes new digital technology like Virtual Reality, Augmented Reality, and Mixed Reality.

**Own financial contribution** is for financing PhD positions, one for each Focus Area, and three of the Focus Area leaders. Stavanger University Hospital will contribute with one PhD position and one Focus Area leader, UiS with two PhD positions and two Focus Area leaders, and Laerdal
Foundation with one PhD positions. In addition, consortium staff will contribute continuously to SiMeLEARN with competence and expertise.

**Note:** Overhead includes a cost element for workplace and a cost element for activity based R&D.
CURRICULUM VITAE for Thor Ole Gulsrud, PhD

Personal information
Date of birth: 04.01.65, Sex: Male, Nationality: Norwegian

Education
2001 Ph.D. in digital image processing from the Faculty of Engineering and Science at Aalborg University, Aalborg, Denmark, in collaboration with Stavanger University College, Stavanger. Title of thesis: Texture analysis of digital mammograms.

1991 Sivilingeniør (MSc) in signal processing from the Department of Electrical and Electronic Engineering at University of Strathclyde, Glasgow, UK.

Experience
2018-date Head of Department, Department of Quality and Health Technology, The Faculty of Health Sciences, University of Stavanger (UiS).

2017-2018 Research Director, Medtech, NORCE - Norwegian Research Centre AS (former International Research Institute of Stavanger (IRIS)).

2016-2018 Associate Professor II, Health Technology, UiS.

2016-2017 Senior Advisor, Health Research, IRIS (now NORCE).

2013-2016 Senior Development Advisor, Corporate R&D, National Oilwell Varco.

2009-2013 Research Director, Drilling & Well, SINTEF Petroleum Research.

2008-2009 Senior Scientist, Drilling & Well, SINTEF Petroleum Research.

2006-2008 Senior Scientist, Product Specialist, and Technical Product Manager, Roxar Flow Measurement AS.

1999-2006 Associate Professor, UiS.

1997-1999 Group Manager/Project Manager, Norwegian Hydrographic Service.

1992-1997 Assistant Professor, Stavanger University College.


Commissions of trusts and major collaborations
2016-date Project manager for Norway Pumps & Pipes (www.pumpsandpipes.no).

2019 Member of Assessment Committee for the PhD thesis “Uncertainty quantification and sensitivity analysis informed modelling of physical systems”, Jacob Sturdy, Norwegian University of Science and Technology, April 2019.

2017-2019 Project manager for HelseCampus Stavanger (www.uis.no/samfunn-og-samarbeid/helsecampus/).


2005-2006 Chairman, Norwegian Association of Research Workers at UiS (FFUiS).

2003-2004 Founder and Manager of MammoScan AS (technology for early detection of breast cancer).

Teaching activities

2018-2018  Advanced Control and Robot Technology - University of Stavanger, Norway.

**Supervision of graduate students and research fellows**
1994-date  3 PhD and 10 Master Students. University of Stavanger, Department of Electrical Engineering and Computer Science.

**Mobility**
1995-1995  Visiting University of California, San Diego, USA, as a part of my PhD study.

**Selected publications**
CURRICULUM VITAE
(April 2019)

Personalia

- Name and Address: Ingunn Aase, Granmeisveien 23, N- 4328 Sandnes
- Date of Birth: 06.04.57
- Marital Status: married, 2 children (33, 30)
- Title: Associate Professor in Nursing

Contact information

- Work-address: University of Stavanger, Faculty of Health Sciences, N-4036 Stavanger
- Cell phone: +47 99166123 / Business telephone: +47 51834167
- E-mail: ingunn.aase@uis.no

Education

- 2016: Interprofessional teamwork training for nursing and medical students in Norway- Thesis UiS no. 309.
- 2012: Patient Safety; PhD-course, 10 ECTS; UiS.
- 2010: Kvalitative metoder i samfunnsvitenskap; Phd-kurs, 10 ECTS; UiS.
- 2009: Vitenskapsteori; PhD kurs innen samfunnsvitenskap, 15 ECTS; UiS.
- 2006: English for pedagogic personell, UiS.
- 1998-1996: Sykepleievitenskap, mellomfag og grunnfag, UiB.
- 1993: Sykepleiefaglig veileder, Godkjent av norsk Sykepleierforbund.
- 1983: Ex.Phil., UiO.

Employed

- 2016- : Associate professor, Faculty of Health Sciences, teaching at Bachelor and Master level
- 2011-2016: Assistant professor and PhD student, University of Stavanger, Department of Health Studies
- 2000 - 2011: Assistant Professor and Study-programme -coordinator, University of Stavanger, Department of Health Studies
- 1998-2000: College Teacher, Stavanger University College, Department of Nursing Education
- 1986-1998: Head Nurse, Children Care Ward, Stavanger
- 1985-1986: Head Nurse, Neonatal Care Ward, Oslo
- 1982-1984: Nurse in Neonatal Care Ward, Oslo
- 1981-1982: Nurse in Elderly Home and in Hospital for Women Diseases, Bergen

Teaching and Supervision

- Clinical training in nursing home, Patient safety, Interprofessional teamwork, Simulation

Research projects

- QualinClinStud her
- SAFE LEAD her

Reviewer

- Journal of Interprofessional Care
- Journal of Nursing Education and Practice
- Journal of Clinical Nursing
• Opponent PhD defence: Sygeplejersker som organisatorisk lim i sundhedsvæsnet, by Anne Døssing, Aalborg Universitet, 2018

Researcher mobility

• Visiting researcher at University of California in San Francisco for 3 months 2013

Publication


• Wiig, S. Ree, E. Johannessen, T., ... Aase, I., ... Aase, K. et al (2018). Improving quality and safety in nursing homes and home care: the study protocol of a mixed-methods research design to implement a leadership intervention. BMJ Open Volume 8:e020933.(3) s. 1-8


• Aase, I. (2016). Interprofessional teamwork training for nursing and medical students in Norway (PhD thesis)


• Aase, I., Sætre Hansen, B., Aase, K., & Reeves, S. (2014). Developing interprofessional simulation based learning: a Norwegian perspective. ATBH (All together better Health) VII Conference. Pittsburgh, US. June (Poster)


• Aase, I. (2012). Students’ perceptions regarding their future role as nurse or physician in interprofessional teamwork(oral presentation) SESAM- international simulation conference, june-Stavanger


• Aase, I. (2012). Kvalitet og sikkerhet i helsesystemer Tverrprofesjonelt teamarbeid i helseutdanningen. Helsefaglig pre-konferanse, Sola Strandhotell (Presentasjon av forskningsprosjekt)


• Aase, I. (2011). The role of non-technical skills in health education. Oral presentation at Clinical skills conference in Prato, 22-25 of May

PERSONAL INFORMATION
Date of birth: 15.01.1971, Sex: Female, Nationality: Norwegian
Countries worked in: Sweden, Tanzania, Zimbabwe, South Africa, and Uganda

EDUCATION
2009-2012: PhD, Institute of International Health, University of Oslo
2010: Advanced EU SIM Simulation Instructor Course
1992-1999: Faculty of Medicine, University of Oslo

CURRENT AND PREVIOUS POSITIONS
2017 – Head of Research, Simulation and Global Health
    Department of Research, Stavanger University Hospital, Norway
2013 – Associate Professor, Faculty of Health Sciences, University of Stavanger, Norway
2012 – Advanced Facilitator and Senior Researcher, SAFER, Stavanger, Norway
2002 – Anaesthesiologist, Department of Anaesthesiology and Intensive Care, Stavanger Hospital

SUPERVISION OF GRADUATE STUDENTS AND RESEARCH FELLOWS
2012 – 2019: Main supervisor of 2 and co-supervisor of 3 PhD Students who have completed
    Co-supervisor of 3 Master Students who have completed
2013 - Main supervisor of 6 and co-supervisor of 7 ongoing PhD students

TEACHING ACTIVITIES
2017 – Partly responsible for the Master Course in Simulation, University of Stavanger
2009 – International Faculty of Helping Babies Breathe simulation-based trainings
2008 – Involved in simulation-based trainings of Residence Doctors in Anaesthesiology, Stavanger
2008 – Involved in simulation-based trainings of medical- and nurse-students at SAFER
2008 – Faculty at “Grunnkurs II” for Norwegian medical doctors in Anaesthesiology

ORGANISATION OF SCIENTIFIC MEETINGS
2012: SESAM simulation congress, Stavanger: 550 international participants.
2015: Co-chair Utstein Meeting, Norway: Implementation of Helping Babies Survive and Helping
    Mothers Survive simulation-based programs; 46 expert participants from 22 countries.
2018: MedSimNorway congress, Stavanger: 250 participants. Leader of the Program committee
2019: MedSimNorway congress, Porsgrunn: 350 participants. Member of the Program committee

INSTITUTIONAL RESPONSIBILITIES
2004 – 2016 Member of the Educational Committee (Leading the Committee 2009-2013),
    Department of Anaesthesiology and Intensive Care, Stavanger University Hospital.

COMMISSIONS OF TRUST
Scientific Consensus Processes
2015: Evidence Reviewer International Liaison Committee On Resuscitation – Neonatal Group
2020: Evidence Reviewer International Liaison Committee On Resuscitation – Neonatal Group

    Scandinavica, Acta Anaesthesiologica Scandinavica, PloS One, Paediatrics and International Child
    Health, Archives of Disease in Childhood, JAMA Pediatrics, BMC journals

PhD Evaluation and opposition
Served as 2. opponent for PhD Anne Marthe Boldingh, University of Oslo 2017
Served as 1. opponent for PhD Christiane Skårer, University of Oslo 2019
Appointed as expert opponent for Janneke Dekker, LUMC, Netherlands 2019
SELECTED MAJOR COLLABORATIONS/RESEARCH PROJECTS
The Safer Births project (www.saferbirths.com) Role: Principal Investigator and Project Manager
Description: A research, development and implementation project to improve fetal heart rate monitoring, newborn resuscitation and perinatal outcomes worldwide. Data-collection in Tanzania Safer Births is a collaboration between several Tanzanian, Norwegian, and international institutions, Stavanger University Hospital, University of Stavanger, SAFER, Laerdal Global Health and Medicals.
Size/funding: The project has an overall budget of approximately 100 million NOK with around 100 researchers/research staff and engineers - a multidisciplinary team-work - including 12 PhD fellows, 11 Master students, and around 20 supervisors with PhD. It is funded by Globvac - the Norwegian Research Council, The Laerdal Foundation, Saving Lives at Birth Grand Challenge, The Southern and Eastern Regional Health Trust, Stavanger University Hospital, Vision 2030 (Innovasjon Norge), SkatteFunn, and Laerdal Global Health (not-for-profit).

Safer Healthcare – Role: Leader of the network
Main collaborators are University of Stavanger, Stavanger University Hospital and SAFER
Description: Patient safety research focusing on need assessments in clinical care, simulation-based learning/training/education and implementation of best practice with local, national and global perspectives and collaboration.

PUBLICATIONS and DISSEMINATION
56 paper published since 2012, 10 manuscripts are currently under review. 5 Selected papers:

Abstracts More than 100 abstracts submitted and presented at international congresses since 2012

Invited as speaker 40 times since 2010 at peer-reviewed, international conferences. Selection:
- Erdsal: “Effects of simulation” Keynote lecture, MedSim Norway congress, Porsgrunn, Norway, April 2019
- Erdsal: “Low-dose high-frequency simulation training – saving lives of babies on a global scale” Keynote lecture, ASPIH congress, Nottingham, UK, November 2014
- Erdsal: “Helping Babies Breathe – a simulation-based teaching system” Keynote, ERC congress, Krakow, Poland 2013
- Erdsal: “Taking simulation beyond boarders and frontiers” Keynote lecture, SESAM congress, Granada, Spain 2011

Selected Scientific Publicity
- “Saving millions of newborn lives”. Meeting with the Norwegian Prime Minister and Minister of Trade, February 2018. https://erna.no/2018/02/26/livets-storste-skatt/ and Television https://www.tv2.no/nyheter/9696410/
- Visjon 2030: Hvordan Norge kan nå nye og ambisiøse mål for helse og utdanning globalt, 2015
- Forsker for de fattigste: Norges Forskningsråd nettsider, Januar 2015
- Dagens Medisin: Presentation of Helping Babies Breathe project, May 2014
- Aftenbladet Plus: Story of Laerdal, Helping Babies Breathe, Safer Births and Haydom, April 2014
- Helsedepartementet – Fellesrapport fra spesialisthelsetjenesten 2013: Dying the Day of Birth
- Erdsal HL: Bistands Aktuelt: Discussing the Norwegian commitment to Neonatal and Maternal Global Health issues, May 2013
- Dagens Medisin: Presentation of the Safer Births project, October 2013
CURRICULUM VITAE BJØRG FROYSLAND OFTEDAL  MD, PH.D

PERSONAL INFORMATION
Date of birth: 4th April 1967. Sex: Female, Nationality: Norwegian

CURRENT AND PREVIOUS POSITIONS
2018- Professor in Health Sciences. Faculty of Health Sciences, University of Stavanger (UiS), Stavanger, Norway
2017 - Vice-Dean for Education, Faculty of Health Sciences, UiS, Stavanger, Norway
2016 - 2017 Vice-Dean for Education, Faculty of Social Sciences, UiS, Stavanger, Norway
2013 - 2015 Associate Professor II, Department of Nursing, Stord/Haugesund University College, Haugesund, Norway
2011 - 2018 Associate Professor, Department of Health Studies, UiS, Stavanger, Norway.
2006 - 2011 Doctoral student, Department of Health Studies, UiS, Stavanger, Norway
2002 - 2006 Assistant Professor, Department of Health Studies, UiS, Stavanger, Norway
1997 - 2002 Teacher in clinical studies, Bachelor in nursing, Stavanger University College, Stavanger, Norway

EDUCATION
2011 PhD in Health Science, Department of Health Studies, UiS, Stavanger, Norway.
2003 - 2004 Teaching qualifications, Diakonhjemmet University College, Oslo, Norway.
2000 - 2002 Master of Science degree in Nursing Science (MSc), Faculty of Medicine, Department of Health Studies, University of Oslo, Norway (120 ECTC).

TEACHING ACTIVITIES
2018- Course coordinator and teacher: Master programme MHV261: Health technology in clinical practice, Faculty of Social Sciences, UiS.
2011-2016 Course coordinator and teacher: Bachelor thesis in Nursing, Department of Health Studies, UiS.
2011-2014 Course coordinator and teacher: Nursing with focus on health promotion and user involvement, Bachelor in Nursing, Department of Health Studies, UiS, Norway.
2002 – 2011 Foundations of Nursing Practice, Community Health Nursing, Advanced Nursing with Complex Health Problems. Bachelor of Nursing, Department of Health Studies UiS.

SUPERVISION OF PH.D AND MASTER STUDENTS
2008 – Two Ph.D candidates have completed and two PhD candidates are ongoing.
MSc students: Six students have graduated and one are ongoing.

RESEARCH LEADER

INTERNATIONAL AND NATIONAL COLLABORATIVE RESEARCH PROJECT:
2014 – 2017 Development and Implementation of Interactive Mobil E-learning Apps
for European Nursing Education (DIMEANE). Erasmus+ - 3.9 mill NOK.

2018 - SmartJournal for oral health in nurse home. Project group consists of interdisciplinary researchers.

2013 – 2018 Promoting patient and professional competencies in diabetes care and management - a prerequisite for high-quality evidence-based health care (DiaHealth) (project number 221065). Funded by the Norwegian Research Council – 15.9 mill NOK.

COMMITTEE AND MEMBERSHIP

2018 Chair PhD Committee, two PhD Candidates. Faculty of Health Sciences, UiS
2018 Member of the Steering Board for developing Masters degrees in Midwifery, Faculty of Health Sciences, UiS and Stavanger University Hospital, Norway
2018- Member of the committee for developing digitalization strategy, UiS, Norway.
2017 Member of the Regional Cooperation in Education. Western Norway Regional Health, Norway.
2018- Leader of the Study Programme Committee, the Faculty of Health Sciences, UiS
2017- Member of the Steering Board for Uniped (Teaching at University), UiS
2016- Member of the Education committee, UiS.

FIVE SELECTED SCIENTIFIC PUBLICATIONS


SELECTED ABSTRACTS FOR ORAL PRESENTATION

1. **Oftedal, Bjørg Froysland**; Navarro-Illana, Esther; Wharrad, Heather; Hvidsten, Venche; Lokken, Atle; Windle, Richard; Whittingham, Katharine; Ustad, Kristin Hjorthaug (2018) What can be learned about the translation and adaption process from Norwegian interactive e-learning materials in nursing education implementation into Spanish and English language. INTED; 5th – 7th Mars, Valencia, Spain.

SELECTED SCIENTIFIC PUBLICITY

# CURRICULUM VITAE

**Name:** Brynjar Foss  
**Date of birth:** 12 June 1973  
**Address:** Njordveien 31, N-4028 Stavanger, Norway  
**Phone:** +47 99 25 07 87  
**e-mail:** brynjar@lyse.net | brynjar.foss@laerdal.com  
**LinkedIn:** www.linkedin.com/in/brynjarfoss

## EMPLOYMENT

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018 – present</td>
<td><strong>Product Manager, Educational Solutions</strong>, Laerdal Medical, 4002 Stavanger, Norway</td>
<td></td>
</tr>
<tr>
<td>2015 – 2018</td>
<td><strong>Blended Learning Manager</strong>, Laerdal Medical, 4002 Stavanger, Norway</td>
<td></td>
</tr>
<tr>
<td>2014 – 2015</td>
<td><strong>Adjunct Professor</strong>, Faculty of Health Education, Stord/Haugesund University College, Haugesund, Norway</td>
<td></td>
</tr>
<tr>
<td>2014 – 2015</td>
<td><strong>Professor</strong>, Department of Health Studies, University of Stavanger, N-4036 Stavanger, Norway</td>
<td></td>
</tr>
<tr>
<td>2006 – 2014</td>
<td><strong>Associate Professor</strong>, Department of Health Studies, University of Stavanger, N-4036 Stavanger, Norway</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td><strong>Project assistant</strong>, The Blood Bank, Haukeland University Hospital, N-5021 Bergen, Norway</td>
<td></td>
</tr>
</tbody>
</table>

## EDUCATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Degree</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-2005</td>
<td><strong>Practical pedagogical education</strong>, Stord/Haugesund University College, N-5409 Stord, Norway</td>
<td></td>
</tr>
<tr>
<td>1998-2001</td>
<td><strong>Doctor of Philosophy</strong> (PhD), Institute of Medicine, University of Bergen, N-5020 Bergen, Norway [www]</td>
<td></td>
</tr>
<tr>
<td>1995-1997</td>
<td><strong>Master of Science</strong> (MSc), Department of Physiology, University of Bergen &amp; The Blood Bank, Haukeland University Hospital, N-5021 Bergen, Norway</td>
<td></td>
</tr>
<tr>
<td>1992-1995</td>
<td><strong>Bachelor of Science</strong> (BSc), Department of Physiology, University of Bergen, N-5020 Bergen, Norway</td>
<td></td>
</tr>
</tbody>
</table>

## AFFILIATIONS:

<table>
<thead>
<tr>
<th>Year</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Task force member, Student active learning and modern teaching at the University of Stavanger, University of Stavanger.</td>
</tr>
<tr>
<td>2013</td>
<td>Task force member, Biobanks in Helse Vest Region, Norway.</td>
</tr>
<tr>
<td>2011-2015</td>
<td><strong>Program committee</strong>: 5th-9th European Conference on Game Based Learning</td>
</tr>
<tr>
<td>2011-2015</td>
<td>Board member, Faculty of Social Sciences, University of Stavanger.</td>
</tr>
<tr>
<td>2000</td>
<td>Board member, Faculty of Medicine, University of Bergen, Bergen, Norway</td>
</tr>
<tr>
<td>2000</td>
<td>Board member, Institute of Medicine, University of Bergen, Bergen, Norway</td>
</tr>
</tbody>
</table>

## E-LEARNING DEVELOPMENT (HIGHER EDUCATION):

<table>
<thead>
<tr>
<th>Year</th>
<th>MOOC: <strong>Basic Pharmacology</strong> (for nurse students)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>On-demand lectures (Mediasite): <strong>Foss, B. Basic Pharmacology</strong> (for nurse students)</td>
</tr>
<tr>
<td>2014</td>
<td>On-demand lectures (Mediasite): <strong>Foss, B. Microbiology</strong> (for nurse students)</td>
</tr>
<tr>
<td>2014</td>
<td>On-demand lectures (Mediasite): <strong>Foss, B. Anatomy &amp; Physiology</strong> (for nurse students)</td>
</tr>
<tr>
<td>2014</td>
<td>MOOC: <strong>Medication calculation</strong> (for nurse students)</td>
</tr>
<tr>
<td>2013</td>
<td>On-demand lectures (Mediasite): <strong>Foss, B. Medication calculation</strong> (for nurse students)</td>
</tr>
<tr>
<td>2012</td>
<td>Digital MindMaps (for Android): <strong>Foss, B. Pathophysiology</strong> (for nurse students)</td>
</tr>
<tr>
<td>2012</td>
<td>Game-based learning (PilleSpillet): <strong>Drug administration</strong> (for nurse students)</td>
</tr>
<tr>
<td>2011</td>
<td>Game-based learning (PilleSpillet): <strong>Mathematics &amp; medication calculation</strong> (for nurse students)</td>
</tr>
<tr>
<td>2010</td>
<td>E-compendium: <strong>Foss B., Sæterdal LR. Medication calculation</strong> (for nurse students, 66 pages)</td>
</tr>
<tr>
<td>2010</td>
<td>E-compendium: <strong>Foss B. Hematological diseases</strong> (for nurse students, 41 pages)</td>
</tr>
<tr>
<td>2009</td>
<td>E-compendiums: <strong>Foss B. Anatomy &amp; Physiology</strong> (for nurse students, 14 issues, 429 pages)</td>
</tr>
<tr>
<td>2009</td>
<td>E-compendium: <strong>Foss B. Basic Pharmacology</strong> (for nurse students, 43 pages)</td>
</tr>
<tr>
<td>2009</td>
<td>E-compendium: <strong>Foss B. Microbiology</strong> (for nurse students, 53 pages)</td>
</tr>
</tbody>
</table>

## SCIENTIFIC PUBLICATIONS (INTERNATIONAL PEER-REVIEWED JOURNALS):


EDITORIAL BOARD MEMBER & ASSOCIATED EDITOR (INTERNATIONAL PEER-REVIEWED JOURNALS):

2012-2016 World Journal of Hematology (Baishideng Publishing Group) [www]
2011-2015 World Journal of Experimental Medicine (Baishideng Publishing Group) [www]
2012-2015 Hematology and Leukemia (Herbert Open Access Journals) [www]
2013-2014 Journal of Biosafety & Health Education (OMICS Publishing group) [www]
2012-2014 American Journal of Medical and Biological Research (Science and Education Publishing) [www]
2011-2013 Journal of Hematological Malignancies, Associated Editor (Sciedu Press) [www]
2009-2014 World Journal of Stem Cells (Baishideng Publishing Group) [www]

ORAL PRESENTATIONS ON E-LEARNING (NATIONAL CONFERENCES & MEETINGS):

2015 The Third Nordic forum for Nurse Educators, Mo i Rana, Norway, 12-14 October.
2015 The Third Nordic forum for Nurse Educators, Mo i Rana, Norway, 12-14 October.
2015 OnlineEducaBerlin, Berlin, Tyskland, 2-4 desember.
2015 National meeting for international cooperation in higher education. Tromsø 11.-12. March. [www]
PERSONAL INFORMATION
Dieckmann, Gerhard Peter    Nationality: German
Date of birth: 11. November 1973   mail@peter-dieckmann.de
Languages: German (Native), English (Fluent), Danish (Fluent), Norwegian (Good understanding)

EDUCATION
2007  “Psychodrama Director” (DAGG), Institute for Psychodrama and Training, Heidelberg
2005  PhD, Carl-von-Ossietzky University Oldenburg, Germany
2000  Diplom Psychologe (Dipl.-Psych.), Carl von Ossietzky University Oldenburg, Germany

CURRENT AND PREVIOUS POSITIONS
2019  Professor II for Healthcare Education and Patient Safety, Department of Quality and Health Technology, University of Stavanger
2016  External Lecturer, Department of Clinical Medicine, University of Copenhagen
2007  Senior Scientist Copenhagen Academy for Medical Education and Simulation (CAMES), Capital Region of Denmark, Herlev Hospital, Herlev Denmark
before Tübingen University (Germany); Swiss Federal Institute of Technology (ETH) Zürich (Switzerland); University of Heidelberg (Germany) – Details available upon request

SELECTED FELLOWSHIPS, AWARDS AND PRIZES
2016  Fellow of Academy of the Society for Simulation in Healthcare (SSH) as one of the 12 inaugural invited members of the Academy
2012  Award for Outstanding Contributions to Health Care Simulation by the Society for Simulation in Health Care (www.ssih.org)

TRACK RECORD
Reviewed journal articles  60
Book chapters    35
Books    2
PhD Co-supervisions    7 (5 finished)
Master supervision    2 (1 ongoing)
Master Co-supervisions    3
Bachelor Supervision    2 (1 ongoing)
Project funding    1.016.159 € (2004 – 2018)
Course income    1.815.995 € (2004 – 2018)
Numerous invited keynote speaks and workshops at international conferences

CORE COMPETENCIES
Use of simulation for education, training, and research  Patient safety theory and practice,
Qualitative (visual) research methods (eye tracking)  Innovative teaching concepts.

CURRENT TEACHING ACTIVITIES
(provided are start dates - teaching activities between 2000 and 2004 available upon request)
2018  Master Modul “Patient Safety and Learning Culture” University of Copenhagen, Denmark (Course Director)
2018  Master Programme Module “Simulation based learning” at the University of Stavanger, Norway. (Faculty)
2016  Safety for Medical Students (in Danish) at the University of Copenhagen (3907-F16;Kursus i patientsikkerhed og kvalitetsudvikling), Course Director
2004  Founding member, course developer, course director, and faculty EuSim Group (www.eusim.org). Trained approximately 2000 healthcare professionals of different professions and from different disciplines

SELECTED WORK FOR ORGANISATIONS AND SCIENTIFIC MEETINGS

2017  S3 Asia’s First Collaborative Simulation Conference, Singapore, Co-initiator and member of the organising committee

2014  Utstein Meeting on the top five topics on how simulation can advance the case of simulation. Utstein, Norway, Member of the organisation committee.

2011  SSH Research Summit Consensus Conference – State of the Science, Jan 2011, New Orleans, USA. Co-initiator and co-chair of the core organising group
International Meeting on Simulation in Healthcare (IMSH)
Appointed Meeting Co-chair 2011 (2500 conference participants)
2nd European – Latin American Meeting on Healthcare Simulation and Patient Safety, Sao Paulo, Brasil Conference Co-Chair, Member of the scientific committee

2009  1st European – Latin American Meeting on Healthcare Simulation and Patient Safety, Coimbra, Portugal. The meeting was the spark for the establishment of the Latin American Simulation Meeting. Co-initiator and Conference Co-Chair

SSH  Society for Simulation Healthcare (www.ssih.org)
Member of the oversight committee 2011 - 2014
Chairman of the Development and Research Committee 2006 – 2009

SESAM  Society in Europe for Simulation Applied to Medicine (www.sesam-web.org)
Appointed Senior Editor for Advances in Simulation 2015 - present
Appointed Immediate Past President 2011 – 2013
Elected President June 2009 – 2011
Elected Vice President June 2007 – to June 2009

PROJECT MANAGEMENT EXPERIENCE

- Numerous project leads and project participations for research, development, and teaching projects in simulation, safety, and education, many in international and multi-professional collaborations.
- Proven records to collaborate with pre-graduate students in a way that results in research projects, innovative teaching activities, and publications in peer-reviewed journals.
- Initiator of student led-workshops at international conferences, including International Meeting on Simulation in Healthcare and SESAM Annual Conference

SELECTED PUBLICATIONS

Level ratings according to the Norwegian Database for Statistics on Higher Education (NSD)


To whom it may concern;

Letter of Support relating to Center of Excellence in Education Application:

Laerdal Medical (www.laerdal.com) hereby expresses its enthusiastic commitment to the SIMeLEARN consortium’s application for support to establish a Center of Excellence within Education.

In 2006, the Faculty of Health Sciences at the University in Stavanger, the Stavanger University Hospital and Laerdal Medical co-founded the SAFER Simulation center in Stavanger. This Center has over the subsequent years become an internationally leading simulation center, as evidence by this ten year report and by further information on www.safer.net.

Laerdal Medical has over all these years been a strongly committed industrial partner to SAFER and together with the Laerdal Foundation, provided significant support to the development of the center. This includes an annual announcement of a PhD stipend and a recently established collaboration to fund a three years collaboration program between SAFER and the India Nursing Council to establish simulation-based nurse education in India.

We are confident that the establishment of a Center of Excellence in Education would greatly contribute to the two bachelor programmes, seven master programmes and one continuing education programme offered by the Faculty of Health Sciences at the University in Stavanger.

If the application from SIMeLEARN receives funding, Laerdal on its part would be committed to contribute required funding for an additional PhD fellow.

With kind regards,

Tore Laerdal, Executive Chairman
To whom it may concern  

April 26 2019  

Letter of Support relating to Center of Excellence in Education Application:

The Laerdal Foundation ([www.laerdalfoundation.net](http://www.laerdalfoundation.net)) is pleased to confirm its commitment to SIMeLEARN, a consortium to continue the long established collaboration with the Faculty of Health Sciences (HS) and Stavanger University Hospital (SUS) and Laerdal Medical. 

We have been delighted to see how SAFER over the years has established itself as an internationally leading patient simulation center, serving both nursing education at the Faculty of Health Sciences and ther continuing education of several thousand medical staff at the Stavanger University hospital, as well as several other user groups, as reported at [www.safer.net](http://www.safer.net).

The Laerdal Foundation has ever since the establishment of the SAFER simulation center in 2006, provided significant financial support to practically related research activities at the Center, including

- a 3-year center support to Safer of NOK 3 m  
- support for the SAR and Safer HealthCare research programs (NOK 1 m per year for the 2013-2022  
- an annual announcement of the Bjorn Lind PhD stipend, which has been awarded 13 times, of which six stipends have been awarded to fellows at the Stavanger University  
- funding for a Professor II position in Patient Simulation at the Faculty of Health Sciences (HS)  
- support for Safer for 3-year collaboration program with the India Nursing Council (NOK 5m)  

We are confident that the establishment of a Center of Excellence in Education would greatly contribute to the two bachelor programmes, seven master programmes and one continuing education programme offered by the Faculty of Health Services This would further solidify the basis for future financial support from the Laerdal Foundation.

With kind regards,  
For the Laerdal Foundation

Tore Laerdal  
Executive Director
The Faculty of Health Sciences  
University of Stavanger

Letter of intent

Stavanger University Hospital (SUS) hereby confirm our support to be part of the consortium SIMeLEARN together with the Faculty of Health Sciences (HS) and Laerdal Medical. Together we will strengthen the two bachelor programs, seven master programs and one continuing education program offered by the Faculty of HS. In total, the consortium and SIMeLEARN will have a direct impact on more than a 1000 students.

SIMeLEARN’s ambition to provide excellent, innovative learning methods to properly prepare and educate health personnel for professional practice, lifelong learning and continuous quality improvement is in line with Laerdal medical’s own ambitions, and so are the three objectives for the center:

1. Develop and globally implement innovative simulation and e-learning methods in collaboration with students, faculty and the professional practice field.

2. Prepare learners for the transition from student life to professional life by using simulation and e-learning to expose them to realistic professional and clinical challenges, thereby equipping them with lifelong learning skills.

3. Use simulation and e-learning to identify and implement quality improvement in clinical practice, thereby enhancing the students’ learning experiences.

Stavanger University Hospital has a long and successful history and experience within the use of and research on simulation methods, technology and clinical effects. The hospital will comply with the objectives, add our best competencies and provide the resources as outlined in the project budget.

Kind regards

Svein Skeie
Director, Department of Research
Letter of Intent

Scope of the LoI: The partners will contribute to the development of SIMeLEARN as a centre for excellence.

Bjerkreim municipality will cooperate with Excellent Simulation and eLearning - SIMeLEARN. The consortium of SIMeLEARN consists of the Faculty of Health Sciences at University of Stavanger (UiS), Leardal Foundation, and Stavanger University Hospital.

Bjerkreim will contribute in one of the SIMeLEARN Focus Areas – Collaborative Learning between Students and Professionals.

Signed by:
Thor Ole Gulsrud
Head of Department of Quality and Health Technology

Signed by:
Øyvør L. Sønstabø
Director of Health
To whom it may concern;

Letter of Confirmation – Centres for Excellence in Education (SFU)

The Faculty of Health Sciences (HS) at the University of Stavanger hereby confirm to be the host institution for SIMeLEARN. Together with our consortium partners, Laerdal Medical and Stavanger University Hospital, we will strengthen the two bachelor programmes, seven master programmes and one continuing education programme offered by the Faculty of HS. In total, the consortium and SIMeLEARN will have a direct impact on more than a 1200 students yearly.

SIMeLEARN’s ambition to provide excellent, innovative learning methods to properly prepare and educate health personnel for professional practice, lifelong learning and continuous quality improvement is in line with the Faculty of HS’s own ambitions, and so are the centres three objectives:

1. Develop and globally implement innovative simulation and e-learning methods in collaboration with students, faculty and the professional practice field.
2. Prepare students for the transition from education to professional practice by using simulation and e-learning to expose them to realistic professional and clinical challenges, thereby equipping them with lifelong learning skills.
3. Use simulation and e-learning to implement quality improvement in clinical practice, thereby enhancing the students’ learning experiences.

The Faculty of HS will comply with the objectives and provide the resources as outlined in the project budget.

Sign.

Kristin Akerjordet
Dean of Faculty of Health Sciences, University of Stavanger