



## Feedback to finalists – Centres for Excellence in Education (SFU) 2016

This document presents the expert panel's final assessment of the nine finalist chosen from the 22 applications for the 2016 call for Centres for Excellence in Education (SFU). Furthermore, it presents the expert panel's advice to the NOKUT board on which centres that the panel recommends receive the status of Centres for Excellence in Education 2016.

### Introduction

NOKUT issued the call for applications for new Centres for Excellence in Education on 17 February 2016, with 13 May 2016 as the deadline for submission.

The call stated that three to six new centres will be appointed in 2016. The centres will be allocated funds of NOK 4-8 million per year over a five-year period, with the possibility of extension for another five years. In total, according to Norway's National Budget for 2016, NOKUT can grant approximately 24 000 000 NOK annually to the new centres.

NOKUT received 22 applications from 12 institutions and appointed an expert panel to assess the applications:

- Professor and Chief Executive Stephanie Marshall, Higher Education Academy, United Kingdom (chair)
- Student Christine Alveberg, NSO, University of Agder, Norway
- Professor Peter Dieter, Gustav Carus Medical School, Dresden University of Technology, Germany
- Professor and Head of Development, Astrid Elbek, The Royal Academy of Music, Denmark
- Professor and Pro-Vice Chancellor Duncan Lawson, Newman University, United Kingdom
- Professor and Pro-Vice Chancellor Philippa Levy, University of Adelaide, Australia

The secretariat for the panel consisted of Project Manager Helen Bråten and Adviser Ingvild Andersen Helseth both from NOKUT, with assistance from Senior Advisor Kristian Jørgensen, Division of Financial Services, University of Agder.

The expert panel assessed the bids according to the [criteria for awarding status as Centre for Excellence in Education](#). The assessment process was divided into two phases. The first consisted of an assessment of the written documents sent in to NOKUT by 13 May 2016.

Due to possible conflicts of interest, Christine Alveberg and Kristian Jørgensen refrained from assessing the bid from University of Agder and Duncan Lawson from the ACT! bid from NTNU.

Each bid was graded on a scale from 1 to 6, where 1 is 'very poor' and 6 'excellent'. The bids that received grade 5 and 6 are considered as 'finalists'. The feedback to all the applicants can be found [here](#).



The following nine finalists went on to the second stage of the assessment process:

Institution	Centre	Grade
Lillehammer University College	CEFIMA - Centre of Excellence in Film and Interactive Media	5
NMBU	SITRAP - Centre for Integrated and Transdisciplinary Education in Planning	5
NTNU	ENgage - Centre for Engaged Education through Entrepreneurship	5
NTNU	ExcITED - Excellent IT Education	6
NTNU	SCOPE - Center for Excellence in Medical Education	6
Oslo and Akershus University College of Applied Sciences	INTERACT - Centre for Interprofessional Interaction with Children and Youth	5
University of Bergen	iEarth - Centre for Integrated Earth System Education	6
University of Oslo	CCSE - Center for Computing in Science Education	6
University of Tromsø	INTERPROF - Centre for Interprofessional Education in Health and Social Sciences	5

The finalists were invited to send in supplementary documentation on evaluation and impact measures, dissemination and sustainability.

The expert panel conducted site visits to all the nine finalists in August and September, and interviewed students, teachers, stakeholders, leaders and senior managers and centre leaders. Subject experts for each of the nine different discipline areas assisted the expert panel during the site visits.

The following subject experts participated:

Institution	Centre	Subject expert
Lillehammer University College	CEFIMA - Centre of Excellence in Film and Interactive Media	Director Harriet Cox, London Film School
NMBU	SITRAP - Centre for Integrated and Transdisciplinary Education in Planning	Professor Anna Geppert, Université Paris-Sorbonne
NTNU	ENgage - Centre for Engaged Education through Entrepreneurship	Professor Robert Blackburn, Kingston University



NTNU	ExcITEd - Excellent IT Education	Professor Tom Crick, Cardiff Metropolitan University
NTNU	SCOPE - Center for Excellence in Medical Education	Professor Janusz Janczukowicz, Medical University of Lodz
Oslo and Akershus University College of Applied Sciences	INTERACT - Centre for Interprofessional Interaction with Children and Youth	Professor emerita Elisabeth Hall, Aarhus University
University of Bergen	iEarth - Centre for Integrated Earth System Education	Professor Michael Hambrey, Aberystwyth University
University of Oslo	CCSE - Center for Computing in Science Education	Professor Judy Hardy, University of Edinburgh
University of Tromsø	INTERPROF - Centre for Interprofessional Education in Health and Social Sciences	Professor Berit Eika, Aarhus University

**Based on the written documentation, site visits, and the available funding, the international expert panel recommends that four centres are appointed:**

Institution	Centre	Level of funding
University of Oslo	CCSE - Center for Computing in Science Education	100 % of requested funding
Lillehammer University College	CEFIMA - Centre of Excellence in Film and Interactive Media	85 % of requested funding
NTNU	ENgage - Centre for Engaged Education through Entrepreneurship	85 % of requested funding
NTNU	ExcITEd - Excellent IT Education	85 % of requested funding

The international expert panel chose the four centres named above because of the way that they addressed NOKUT's criteria for the award of SFU status. The expert panel took into account information provided in the original submission and further insights gained from the site visits which reinforced or clarified points from the written submission.

What stood out in all four of these centres was the shared passion, enthusiasm and excitement for the Centre, repeatedly demonstrated in the various discussions between assessors and key groups including the proposed centre leadership, students, teaching staff, external stakeholders and senior management. The assessors were impressed by the leadership capability, which included resilience, demonstrated at strategically aligned levels: institutional, faculty and centre leadership. Additionally, all four Centres had clear visions for their centres, which had been developed in partnership with their students. These foundations were deemed to provide the right conditions to facilitate the development of four successful, world-class centres, capable of making a significant impact on student learning outcomes.



Whilst the characteristics described above were present in all four of these proposals, there was some variability between the proposals. In particular, the panel regarded the proposal for the Centre for Computing in Science Education (CSSE) at the University of Oslo as one that addressed all the criteria to a very high level. The panel regarded this proposal as being of **the highest quality**, which deserves to be fully funded at the level requested (which incidentally was the lowest of the four recommended centres).

The expert panel reflected long and hard on the other three proposals and concluded that, whilst each had considerable strengths, each also had some areas of weakness. Yet, overall, the panel felt that all these three proposals were of **good quality** and as having equal merit.

The total amount of funding requested by these three proposals, when added to the funds that it is recommended be awarded to CSSE, exceeds the total amount of funding available for SFUs. The panel noted that two of these three proposals had requested the maximum amount of funding and the third had requested more than CSSE. In view of the budgetary constraints, the panel recommends that each of these three be awarded SFU status and be funded at a level of 85% of the requested funding.

The panel noted that each of these three proposals had strong links with external stakeholders and recommends that these proposals, once awarded SFU status, explore with the stakeholders their willingness to make a financial contribution to enable these proposals to be funded at the level originally requested.

The panel was pleased to record much innovative and high quality practice in the other five proposed centres that they visited. They regarded much of the proposed activity as worthwhile. However, the panel also felt that in all five cases there were significant weaknesses, which meant that they did not have confidence that the proposed centres were yet ready to become an SFU. The panel hopes that the proposers of these other centres will learn from the feedback provided and continue to develop their ideas and activities for the benefit of their students and, when there is a further call for SFU proposals, then they will be in a good position to apply again.

The expert panel assessed each of the nine finalists as follows:



## Lillehammer University College: CEFIMA - Centre of Excellence in Film and Interactive Media Centre

The declared aim of the centre is to innovate education in modern artistic storytelling including new interactive media as a means of artistic expression. The challenge is to prepare students to exploit new technologies for telling meaningful stories that help us understand both intellectually and emotionally an increasingly complex world. The centre aims to lead a paradigm shift in terms of the development of students working in interactive media arts combined with creating a lifelong learning attitude in students and staff.

### Strengths and weaknesses

The Norwegian Film School (NFS) has a clear history of excellence with great student engagement and a focus on individual growth. The students are really engaged in the drive to learn for current and future needs of their practice. The academic standards are very high in terms of requirements to get into the school, throughout the studies and the jobs that the graduates go into. The school has developed an effective staff, student, and institutional community of practice with strong links to the industry.

At the site visit, the panel noted the premise is exceptional and customised as “fit for purpose” for the demand of the current and future film education and provides a safe space for learning/experimentation and risk taking. There was some concern in the general presentation that the focus was on the school rather than on the proposed centre. However, meetings with students made it very apparent that there was a real sense of ownership, with students hugely engaged in the visions for CEFIMA and keen to influence their own education and therefore wanting to shape the centre. Similarly, stakeholders were very committed, enthusiastic, involved, and keen to bridge the gap between technology and art. Stakeholders strongly emphasized the requirement for graduates capable of bringing together gaming and storytelling. The meeting with teachers and staff demonstrated an embedded collective philosophy and ethos with strong connections to the industry.

There are aspects of the written bid that are unclear, however the site visit enabled the assessors to ask relevant questions and gain greater clarity around how the aim of the project was to be achieved. In fact, it rapidly became apparent that the bid had been developed further since the original proposal had been submitted. The paradigm shift is forward thinking for film education and hence inherent in the bid is the dilemma of how to define actual outcome for creative education. We understood clearly from the discussion groups, that, to be successful, the process of research and exploration must remain fluid.

Lillehammer University College is supportive of the proposal for the Centre as outlined in the bid. The centre leader was very convincing, although the management structure around the centre was somewhat unclear, especially the administrative support for the project. This needs to be addressed for the centre to function efficiently.

Collaboration seems to be a key feature in order to bridge the gap between technology and art and put the project on an international level. However, none of the links to partner institutions had been formalized. Indeed, without the partnership with NTNU (Gjøvik), the proposed pedagogic shift could not happen. The assessors would have liked to have seen this link formalized, so as not to constitute a major risk to the project. The dissemination plan had clearly been thought through and the assessors applauded this. Planning is already under way for the initial Train the Trainer conference.



Overall, the expert panel viewed the likelihood of this project delivering the identified outcomes as very strong. The projects has the potential to make a real impact on the future of the gaming industry – via NFS graduates influencing the industry - moving it more into the sphere of narrative and storytelling. This is something for which Norway has been so famous for many centuries. This proposed paradigm shift is very relevant to film schools around the world, as it is seeking the creative space to pioneer a synthesised and transferable model of a film school that educates practitioners for the future.

This bid strengthens life-long learning and continued professional development for staff; it has the potential to enhance the future for the coming generations of students and has the value of working with and informing the growth of an industry. Such an impact will result in young people around the world engaging in a more imaginative and grounded cultural activity.



## NMBU: SITRAP - Centre for Integrated and Transdisciplinary Education in Planning Centre Centre

The vision set out for the Centre is to educate a new generation of professionals to take a leading role in planning and implementation of the Green Shift. This will be achieved through the development and implementation of trans-disciplinary learning methods, which integrate academic thinking with professional methodologies and allow students as future professionals to break down sectoral barriers and act beyond disciplines.

### Strengths and weaknesses

SITRAP is led by the Department of Landscape Architecture and Spatial Planning at NMBU and addresses an area of huge societal importance, namely the Green Shift. The leaders have assembled a wide-ranging coalition including NIBIO, Centre for the Study of Professions at HiOA, Finance Norway, the Norwegian Centre for Design and Architecture, the magazine KOTE, the Oslo Regional Alliance and the Centre for Continuing Education at NMBU. All these organisations could potentially play important roles in supporting SITRAP's aims. However, the nature of the involvement of these various bodies has not been fully established. Greater clarity is needed about which bodies are formal partners and which are simply "interested parties". There appeared to be some competing agendas within these potential partners and differing understandings of what SITRAP's key purposes are.

There is strong support for SITRAP at senior levels within the management of NMBU. It was clear to the expert panel that there was significant potential for SITRAP, if successful in its SFU application, to have an impact across the institution beyond the lead department, in terms of raising the profile of excellent education. There was a definite will to make this happen.

The expert panel was pleased to learn of the consultation with students before drafting the proposal and that a small number of students had been involved in developing the proposal.

The value of breaking down sectoral and disciplinary barriers was clearly demonstrated by the proposal leaders. However further work is necessary to create a common understanding within the department and amongst the partners of the differences between inter-disciplinary, cross-disciplinary and trans-disciplinary approaches. The expert panel was surprised to find low levels of awareness across the department of the fundamental ideas within the proposal and this gave serious concerns about the likelihood of eventual success.

The proposed arena for knowledge and experience sharing that is at the heart of Strategy 2 of the proposal forms a sound basis from which to start dissemination. Beyond this, there is a need for further work to ensure that dissemination actually achieves more than simply knowledge of what SITRAP is doing.

The expert panel found the suggested approach to evaluation to be quite limited in both its scope and its depth, and recommends that further work is needed to develop this into something that can make a real difference to the project.

Overall, although this proposal has significant potential, in the end it disappointed. The ideas at the heart of the proposal have considerable merit, but there is a need for further development work to, in particular, clarify the roles of different partners and secure much wider ownership of the proposed activities.



## NTNU: ENgage - Centre for Engaged Education through Entrepreneurship

### Centre

The stated aim for the Centre is to develop education for students from all disciplines and professions who will constantly challenge accepted truths and innovate for the better, in both the private and public sectors. The Centre interprets entrepreneurship in a much wider sense than simply starting new businesses. Instead, the focus is upon developing change agents: citizens able to respond to the complex challenges of the modern world through an “entrepreneurial mind-set”.

### Strengths and weaknesses

ENgage brings together a range of partners with complementary skills: NTNU School of Entrepreneurship, Nord University Business School, NTNU Experts in Teamwork, NTNU TrollLABS and Spark NTNU. These partners have many years’ experience in different aspects of entrepreneurship education. The expert panel was particularly pleased to see the important position and roles of students and student organisations within ENgage.

A key mission of the proposed centre is to provide opportunities for students from all disciplines to gain entrepreneurial experience. This will be achieved in a number of ways including the introduction of new learning approaches in existing programs. Vital to the success of this initiative will be support from senior management within the University. It was very clear to the expert panel that this support is already in place and that this development aligns with the University’s strategic direction.

A diverse range of external stakeholders is committed to the development of ENgage as an SFU. These stakeholders can enrich the SFU through demonstrating the entrepreneurial mind-set in a range of settings and by providing advice, mentoring and real-world problems for students to address. The Centre leader impressed the expert panel with his vision and understanding of what is needed to make the SFU a success. However, to be successful the centre leader needs active management support from all the leaders at all levels associated with the centre. He will have an important role to play in ensuring that the different partners and work packages come together to form an integrated whole rather than operating in separate silos. The proposed Steering Group has a vital role in supporting him to achieve this and the expert panel felt that the membership of the Steering Group should be revised to include the Vice-Rector.

The relevance of this proposal to higher education across Norway is evidenced by the fact that, since the publication of the SFU short-list, a number of universities had approached ENgage to seek involvement with the proposed activities. These approaches provide ENgage with potential opportunities for ‘dissemination for action’ and the team will need to build these into their, as yet, embryonic dissemination plan.

In common with most proposals, there are weaknesses in the team’s understanding of evaluation and impact frameworks. The Centre leader will need to work closely with the individual work package leaders to ensure that evaluation and impact are integral from the outset of the project. This will ensure dynamic feedback, generating ongoing improvement rather than just a static end of project final judgement.

Overall, the international expert panel viewed this as an exciting proposal with the potential to make a significant impact across the whole of Norwegian higher education. Whilst still in need of some refinement, it has a good likelihood of success.





## NTNU: EXcITEd - Excellent IT Education

### Centre

The Centre of Excellence in Computing and IT proposal is a collaboration between NTNU and Nord University. The aim of this Centre is to enhance tertiary IT education in Norway, to include outreach activities addressing diversity issues in computing, especially gender. It will do so by increasing students' learning through project-based education, earlier involvement of students in research and development activity.

### Strengths and weaknesses

The Faculty has a history of excellence in terms of inputs, process factors and outputs, with committed student engagement and a focus on individual growth. The academic standards are high, with a differing focus to the delivery of student learning outcomes across the campuses that will be involved e.g. the main Trondheim campus, which has a tradition of excellence in research-led teaching, and Nord and Gjøvik (NTNU), which has a tradition of excellence in practical application. The school is in the process of developing a strong staff and student community of practice crossing the two campuses, which was in evidence in the meetings with students and with staff.

NTNU is very supportive of the proposal for the Centre as outlined in the bid, particularly as a bid from this Faculty was submitted in the last round. The expert panel had expressed some concerns with the written bid regarding the effectiveness of collaboration amongst the recently merged institutions that are now all part of NTNU. The site visit showed that there has been effective collaboration taking place for some time, pre-dating the official merger.

At the site visit, the panel was pleased to receive a very thorough and competent presentation, which also covered areas where the panel had requested further input and information. For example, the issue of 'additionality' was addressed (i.e. would the project still go ahead, but at a much slower pace, if not funded). In subsequent student meetings, it became very apparent that students had been very involved in the development of the proposal, and there was a real sense of ownership amongst students who were hugely engaged in the vision and plans for EXcITEd, and keen to influence their own education, and therefore wanting to assist the shaping of the centre. They saw themselves as change agents, and the project enabled them to fulfil this role even more, particularly work package 1, getting more young people, particularly females, to think about higher education in IT. Students at the Trondheim campus did, however, see themselves as still receiving too traditional a curriculum, with assessment being a key area of concern. They hoped that the Centre would address this issue, and assist the Faculty to learn from approaches at Nord, which focused much more on practical assessments. The expert panel was concerned to learn that at NTNU innovation in learning and teaching, particularly with assessment, was being hindered by administrative processes and university regulations. Another area of concern to students was their lack of understanding of how they might progress to post-graduate study.

The stakeholders were very committed and enthusiastic but suggested that their interactions were normally bilateral discussions, exploring possibilities for research opportunities and placements rather than curriculum development or activities that could really make an impact. They were particularly keen to assist with work package 1 alongside changing the understanding amongst pre-university learners about IT and its spectrum of applications – offering a range of ideas that would certainly benefit the project. They viewed the proposed SFU most favourably, stating that it afforded the opportunity to provide a holistic framework for the wide range of activities in IT, which they suggested currently, is very fragmented (regionally and nationally).



The meeting with teachers and staff demonstrated a strong collective philosophy and ethos, combined with huge enthusiasm for the project. The Centre leader outlined a well thought through management and governance structure. There was great commitment and ability shown by most of the proposed team.

The expert panel felt that the work package leaders showed varying levels of understanding of and commitment to the requirements of the work for which they would be responsible. In particular, questions relating to evaluation and impact were sometimes answered quite generically. However, since the submission of the proposal, the management structure has developed through the creation of the position of Centre Scientific Leader and the expert panel saw this as a very positive development particularly the intention to create and maintain a dynamic project dashboard for key performance indicators should effectively support the operational planning.

The teachers have already created a community of practice, which appears to be having success in sharing good practice across the campuses, as well as engaging internationally with key domain experts. The proposed dissemination plan requires considerable further development and the expert panel felt that this community of practice could have an important role, were it to be widened to include colleagues from other institutions.

Overall, the panel thought that the site visit confirmed their views of the proposed centre further to the original documentation – i.e. a proposal that had the potential to make a real impact on the recruitment of students into Computing and IT, particularly females, and providing a more grounded and practice-based curriculum. The expert panel felt that the proposal had a strong likelihood of success, particularly given the strong commitment offered by not just the Vice-Rector and Faculty Dean, but also the staff at the local level.



## NTNU: SCOPE - Center for Excellence in Medical Education

### Centre

The vision of the centre is to foster lifelong learning for improved public health and patient care. The aim is to develop educational models to strengthen students' awareness of how practices can be reshaped by research and give students confidence and capacities needed to challenge established practices. In short, the centre will enable the students to initiate change. The strategy of the centre is to facilitate student involvement and learning in how to ensure that clinical practice is continually updated, based on new knowledge. The centre will focus especially on skills in receiving and giving supervision and assessment methods mirroring real life situations.

### Strengths and weaknesses

The site visit confirmed that the existing academic, educational and managerial competence is overall committed to excellence and the centre plan.

The student engagement and activity is of extraordinary high quality. The students are happy with the way the faculty respond to their suggestions. They were involved in the bid writing and conceptualisation. The stakeholders are somewhat disengaged. They were not involved in the bid writing; some of them had not even seen or read the bid. However, they all emphasized the need for interdisciplinary, interprofessional education.

The teachers demonstrated no sense of collective ownership. They were not involved in the bid writing; some of them had just read the bid before the meeting. They had fragmented and differing ideas of what SCOPE is about. Most of them are very enthusiastic about their own ideas of interdisciplinary, interprofessional teaching. They all expected that SCOPE would give them more resources.

The managers and leaders have a lack of consistency as to where interdisciplinarity or interprofessionalism fits in. The leader of the centre could not answer questions in a convincing matter with respect to measuring progress (e.g. surveys, assessments, exams). The question "what is the innovation" of SCOPE was not answered at all. The leaders stated that internal and external dissemination is still a challenge. The answers on evaluation and impact were very weak and there was no understanding of methodological approaches.

Overall, the focus and objectives of SCOPE remained unclear. There was a lack of understanding of the project amongst many people. The likelihood of success seems to be very low and a stronger, more focussed and thoughtful collective leadership with an ongoing stakeholder engagement is needed. Dissemination, evaluation and impact have not been sufficiently worked out. There was confusion about whether the application comes from the Faculty of Medicine and includes only medical students or from both the Faculty of Medicine and the Faculty of Health and Social Sciences including students from both Faculties, soon merging.

These items need addressing through further reflection and planning in order to produce a proposal that NOKUT could confidently expect to succeed.



## Oslo and Akershus University College of Applied Sciences: INTERACT – Centre for Interprofessional Interaction with Children and Youth

### Centre

The objective of the centre is to enhance interprofessional collaboration between educational provision addressing children and young people's wellbeing, health and education. A key feature of the proposed centre is the co-design and co-production of learning resources by students, staff and practitioners.

### Strengths and weaknesses

One of the biggest strengths in this proposal is the strong engagement from students, teaching staff and stakeholders. The students act as change-agents and proved to be a driving force for the idea of this centre. All the mentioned parties were able to clearly conceptualize and persuade the panel of the aims and the need for the proposed centre. The panel was impressed by the huge buy-in to this centre.

The objectives of this centre are aligned with public policies for this field. This strengthened the picture of external support, possibilities of dissemination and impact.

During the site visit, the panel became aware of what seemed like hindrances in the institutional administrative structure. Teaching staff were concerned with their workload and hindrances in solving this. There was also some evidence of silo thinking, which was concerning. The proposed centre was viewed as a possible solution to these challenges. The institutional management did not have the same concerns and did not show an understanding of this.

The management structure of the centre is unclear and undecided. This is an important part of the centre's likelihood of success. There were few ideas of how this would be organized and the management of the institution and the proposed centre leader did not seem to understand the importance of a good management structure. Key personnel were not decided upon and the management were not able to reassure the panel of potential candidates, although teaching staff seemed eager to take on the tasks. The expert panel acknowledged that work strand leaders was not yet determined, however it should still have been possible for the proposed centre leader and the institutional management to convince the panel of how the proposed centre would be evaluated. Unfortunately, they did not do so. Little understanding was shown of how "the theory of change", which was referred to in the bid, would be applied. Considerable work is needed to develop a clear plan in regards to evaluation and impact.

In conclusion, the expert panel felt that the proposal for this centre initially had a good vision, but there were too many shortcomings. Even though the buy-in to this centre is impressive, the panel is not convinced that the centre has the potential to succeed because of challenges with the structures of the centres and the institution.



## University of Bergen: iEarth - Centre for Integrated Earth System Education

### Centre

The aim of iEarth is to build a national consortium with broad international networks and to transform Earth Science education in Norway. The proposal recognises that there is an on-going shift in emphasis in Earth Science away from exploration for fossil fuels and minerals, to environmental issues, and that traditional geology teaching needs re-assessment. The proposal suggests achieving this by connecting excellence in research with excellence in student-active learning by: 1) creating a national competence centre for earth science education, 2) developing a generic approach to cross-disciplinary earth science education, and, finally, 3) establishing a coherent system of evaluation to foster teaching excellence and identify best practices to disseminate worldwide. The proposal is a collaborative effort of four institutions, to be hosted at the Department of Earth Science, University of Bergen.

### Strengths and weaknesses

The proposal demonstrated very solid quality of input, process factors and outputs, and this led the assessment panel to view the written application most favourably. At the site visit, the panel was impressed by a number of factors – most notably the students and the quality of the lecturers at Bergen who would be delivering the project. However, there were a number of areas where the panel would have liked to have seen a tighter presentation of the operationalization of the project, particularly around the pedagogic focus.

Students (all from Bergen) were very satisfied with the current provision, and there was not any drive from the students for a culture change. They did express, however, a desire for better links with employers and more access to real-time case studies. The panel heard that there had been limited student input to the development of the SFU proposal – the Student Council had been shown a copy of the proposal and asked for comments. Most students were unaware of the proposal until being asked to take part in the meeting with the panel. Student engagement appeared limited, and restricted to, primarily, traditional feedback methods.

In discussion with stakeholders, the panel was impressed by the extent of dialogue between employers and the department already in place. There had been some input from some employers into SFU proposal, with some stakeholders having good ideas for possible real-time projects (but they did not provide convincing answer to the question “Why have these things not already happened?”). Stakeholders suggested they would like more input into the curriculum – as they, too, want to see more applied learning since there was a feeling that some students are not able to transfer their theoretical knowledge into practical application.

In the meeting with teachers and staff (all from Bergen), there was huge enthusiasm and commitment from those present – however, the expert panel were disappointed not to meet teachers from other consortium institutions. Curriculum review had commenced and had already produced some good outcomes and the panel was pleased to hear intelligent and considered approaches to a set of questions around this review. However, the means of delivering work package 3 in terms of culture change did not seem to be fully thought through. The need to challenge individual ownership of parts of the curriculum and create shared ownership of all the curriculum was understood and it was claimed that the process was well underway at Bachelor's level. The panel appreciated the frank and honest discussion around this aspect of the transitioning that would be required to achieve the centre's goals.

In discussing evaluation and impact, the group were less clear. The panel was impressed that some of the work strand leaders wanted to explore how they could better evaluate and determine impact, leading to some excellent discussion.



The meeting with leaders and managers was the first meeting attended by colleagues from beyond Bergen, with Tromsø notably absent. Oslo and UNIS were represented and gave good accounts of their commitment to the partnership. For the panel, the complete absence of colleagues from Tromsø raised grave concerns, which were not assuaged by the description of their involvement in previous meetings with the core Bergen team. The panel was not convinced that they were, indeed, actively engaged as partners.

The panel was impressed by the commitment of the University of Bergen, Head of Department and Vice-Rector, who came across as strong and committed leaders. Discussion of evaluation and impact here demonstrated a better understanding, but illustrated that there still was room for improvement. Student engagement appeared limited, and restricted to, primarily, traditional feedback methods.

Overall, the panel had viewed this as promising proposal with the potential to make a significant impact if it were to fully engage with all the collaborators and students in a discussion of how best to achieve the desired outcomes – to include overhaul of the whole curriculum. The concept is a solid one, but needs much discussion with collaborators and students as to how to undertake the root-and-branch review that is outlined in the proposal, alongside on-going staff upskilling.



## University of Oslo: CCSE - Center for Computing in Science Education

### Centre

The Centre will lead curriculum development and research at the University of Oslo in the integration of computing into science education. It will leverage innovative curriculum renewal in the sciences, integrating computing throughout from the first year in order to prepare students more effectively for the contemporary interdisciplinary workplace. Building on the demonstrable success of curriculum re-design that has already been undertaken in parts of the science curriculum at the University, it will engage students in science learning through the application of computing techniques to authentic, research-near problems in science. In partnership with students, the Centre will embed computing throughout the whole curriculum, develop professional educational material to support adoption at other institutions, underpin development activity with research, and extend methods and practices to other institutions nationally and internationally.

### Strengths and weaknesses

The site visit confirmed to the panel that the proposal for CCSE has many strengths. The panel received an excellent presentation by the proposed Centre Manager and Dean. The significance of the project's goals to the Faculty, the University and the wider field of science education was convincingly articulated, as was the project's very clear conceptual framework arising from several years of prior development work.

The case made in the proposal documentation for existing educational excellence based on inputs, process factors and outcomes was confirmed throughout the panel's discussions during the site visit, not least at the meeting with students who demonstrated very strong engagement with the goals of the Centre and with their own learning. They emphasised the value, including intellectual stimulation and deep learning, which being exposed to an integrated approach to computational methods from the very start of their undergraduate science education had brought them. They described this as a powerful enabler for science learning, giving examples of active approaches to learning and flexible assignments, well supported by staff. They loved the authentic, real-world tasks that they had undertaken using computing in science, explaining benefits including fostering of self-confidence in learning and making transition to university-level study easier. The students were eager for all their courses to be elevated to same level of quality as the best. They also expressed a very strong sense of staff-student community, with genuine attention paid to the student voice.

The stakeholder group provided key perspectives from research and industry. Stakeholders were strongly supportive of the vision for the Centre and demonstrated active engagement as champions and partners in the achievement of its goals. They emphasised the importance of breaking down silos between disciplines, and the importance of computational capabilities in science graduates for graduate employment in industry and research sectors. They confirmed the high value placed on graduates from the faculty's programs in which computational methods already are embedded.

The strong engagement of teaching staff in the Centre's vision was another strength, with the proposal having solid foundations in the collective buy-in of teachers. The panel was especially impressed and encouraged that this engagement was evident across a range of disciplines. The impression was given of a coherent, cohesive and shared basis for future collaboration across disciplines in the work of the Centre. Teaching staff expressed strong commitment to the 'no silos' ambition of the Centre, emphasising working across the disciplines to develop collective practice. The project leader demonstrated excellent participatory leadership style in action during the discussion, which was reflective and focused. More widely, a supportive institutional infrastructure for teaching was evidenced. While it is clear that the faculty has already demonstrated commitment to listening and responding to the student voice, the panel felt that there would be



a need to take this to the next level of genuine partnership working with students in the enhancement and innovation activity of the Centre. The panel was reassured that the plans for embedding educational research expertise into the project, by drawing in required external expertise, are well thought-through.

There is very strong championing of the goals of the Centre by institutional leaders and managers, as demonstrated by the allocation of resources to the prior developmental work, including pilots, and by the consistency of the message both from top leadership and leadership at other levels. The panel would have welcomed a clearer response to questions relating to anticipated challenges to be overcome in achieving the Centre's goals, especially as regards work package 3, but overall the project leadership demonstrated impressive experience, pragmatism and credibility, combined with support from a critical mass of innovators. It was very positive to note that the Centre leaders envisaged that CCSE would gain benefit from interaction with another, previously funded, Centre. The panel also noted that while stakeholder involvement in governance and management had not yet been fully scoped, the proposals made during the site visit were convincing.

The panel commends the 'learning' approach to dissemination strategy. Further development of the evaluation plan, while it demonstrates a good foundation, is required; the research/evaluation focus on measurement of students' 'computational thinking' was identified by the panel as an important element of the work.

In summary, with the exception of limited existing excellence in science education research, CCSE is very strong on all excellence indicators. There is a very persuasive rationale for the SFU, and strong evidence of the fruits of ten years of patient and committed development in computing in science education, resulting in a conceptual framework and pedagogical foundation with real depth. The educational philosophy and prior implementations are convincing. Students and stakeholders are highly motivated and there is strong collective teacher commitment. Management and leadership are very solid with clear strategic leadership and commitment, and a well-planned management structure combined with a strong and clear focus for the first five years of work. There is strong buy-in across disciplines/departments in the Faculty, promising well for the sustainability of the project. Some work package leaders may benefit from particular support for taking on the new responsibilities of their role.

Overall, the panel considers that the Centre offers strong potential for genuinely transformative impact, leading a breakthrough in science education not only involving step-change locally at the University but also offering a cutting-edge exemplar nationally and internationally. The potential for powerful research development is strong, as long as research expertise is brought in from a collaborating partner as planned.





## University of Tromsø – INTERPROF

### Centre

INTERPROF seeks to redesign clinical education in health and social care by exploring novel models of interprofessional (IP) learning for students. It will extend IP learning for 13 health and social care programmes, involving authentic student-led encounters with clients in need of health care. Six partners - five municipalities and the University hospital - will host two pilot models, collaborating with the University and fellow municipalities/hospitals. Typical clinical placement venues will host the IP activities (preventive care, nursing homes, home-based service, health centres, the mental health service and patient pathway). A digital platform will be developed to explore possibilities for virtual IP collaboration. The clinical placement sites and students will serve as ambassadors for the new models, and experiences and results will be widely disseminated.

### Strengths and weaknesses

The panel appreciated a good presentation by the proposed centre leader, which included an overview of the Centre's further development since 2013, when a previous submission had been made to the SFU programme. The presentation convincingly demonstrated how the Centre seeks to 'walk the talk' on IP learning and it was emphasised that efforts had been made to more strongly engage internal and external stakeholders. The success of existing initiatives was highlighted. The presentation could have been strengthened by further clarification of the extent and nature of innovation involved in the planned 'learning by doing' approach. A stronger conceptual framework for research-informed teaching also would have been useful.

Students confirmed some amount of IP learning was taking place in their programs, especially in the Inter-base programme, which they appreciated. While they personally had not been involved in the development of the bid they fully expected that students would be involved as partners if the Centre were to be funded. They expressed great confidence in the University's ability to deliver the goals of INTERPROF. However, overall, the impression was given that students perceived IP learning primarily taking place more coincidentally than in a planned way at present.

Stakeholders expressed strong support for the proposal, emphasising the importance of IP learning for students in relation, ultimately, to patient benefit and they expected good value from a SFU grant for the region as well as the University. The impression was confirmed of a project with good anchoring in the community, although to date patient involvement in the development of the Centre's vision and activity appeared less strong than it could have been.

Teachers, some of whom had been involved in the development of the bid, generally were extremely keen for the Centre to leverage the breaking down of the silos between practitioner disciplines and expected that a Centre would provide the opportunity for academic staff to work together much more closely between the different programmes. They expressed strong motivation and, mostly, a strongly shared belief in the value of IP learning. A number of examples of good IP practice were offered, especially in the smaller study programmes. However, discussion suggested possible differences in the strength of support for the goals of the project among disciplines, and also some lack of a strong coordinating and cohesive framework for IP learning up to now. The impression was given of possible weaknesses in coordination between pilots, in student involvement as partners in the Centre, and in the current connection between research and teaching.



The panel appreciated the detailed discussion with managers and senior leaders, and noted clear strengths in the plans and personnel as well as strong international connections. While it was emphasised that the value of an SFU would be in providing status and recognition for IP learning, capacity-building in the municipalities, and a more systematic approach to IP learning in the curriculum – taking the leap from successful pilots to full embedding – the existing excellence and the ‘additionality’ (added value) of an SFU could have been more powerfully articulated especially in the context of recent government policy already driving development in this area. Clearer evidence of student involvement in the development of, and plans for, the Centre, would have been helpful, as would a clearer explanation of plans for evaluation and plans for tackling the challenges of engaging all (including medical) disciplines in the work of the Centre. Broad plans for research were outlined but further clarity on the role and nature of the PhD projects would have been helpful. There was a concern about possible over-reliance on the role of the coordinator.

In sum, the site visit confirmed effective IP pilots, strong links to municipalities and other stakeholders (with the possible exception of strong patient stakeholder involvement) and to international contacts, and convincing motivation in the University. Strengths in networking offer a good foundation for dissemination. Operational strategies seem broadly robust, although the ambition for the Centre could perhaps have been higher and the overall added value of SFU funding was somewhat unclear. The impression was given of strong WP leadership. Clearer evidence of strong central Centre coordination/leadership, and of engagement in its mission across all disciplines including Medicine, would have strengthened the proposal, as would evidence of more concrete and convincing plans and models for impact evaluation. The site visit was very positive in confirming good progress since the previous SFU submission, but some of the panel’s concerns about the readiness of INTERPROF for SFU status remained.