

Mid-term evaluation of ten National Research schools

Report submitted by the evaluation panel

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Report submitted by the evaluation panel

Division of Science



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Preface by the Research Council of Norway

The *scheme for national research schools (FORSKERSKOLER)* was launched in 2008. The purpose of the scheme is to enhance the quality and raise the academic level of PhD education in Norway based on national networks of cooperating institutions. Since the scheme was launched, the Research Council has issued three calls for proposals and allocated grants to a total of 22 national research schools. Five were started up in 2009, ten in 2013 and seven in 2015. A Nordic scientific programme committee was appointed in 2013, with responsibility for assessing grant applications, monitoring the progress of the FORSKERSKOLER scheme and serving as the evaluation panel for the mid-term evaluation in 2013 and in 2016/2017.

The task of the evaluation panel has been to: 1) evaluate the quality of and progress achieved by the ten research schools which were awarded funding in 2012 and launched in 2013; and 2) to provide recommendations as to whether funding should be continued to cover the full eight-year period or terminated after five years.

Continued funding is recommended for all ten schools to cover the full eight-year period, according to the proposed budget.

This report summarises the findings of the evaluation panel.

Oslo, May 2017

Anders Hanneborg
Executive Director
Division for Science

Abbreviations used in the report

| | |
|--------------|--|
| HiHM | Hedmark University of Applied Sciences |
| HiOA | Oslo and Akershus University College of Applied Sciences |
| HSN | University College of Southeast Norway |
| NHH | Norwegian School of Economics |
| NMBU | Norwegian University of Life Sciences |
| NTNU | Norwegian University of Science and Technology |
| UiA | University of Agder |
| UiB | University of Bergen |
| UiO | University of Oslo |
| UiS | University of Stavanger |
| UiT | UiT The Arctic University of Norway |
| COINS | Research School of Computer and Information Security |
| EPINOR | National Research School in Population-based Epidemiology |
| IRSAE | International Research School in Applied Ecology |
| LingPhil | Norwegian Graduate Researcher School in Linguistics and Philology |
| NAFALM | Norwegian Research School in General Practice |
| NANO-NETWORK | Norwegian PhD Network on Nanotechnology for Microsystems |
| NFIF | Norwegian PhD School of Pharmacy |
| NORHEART | Norwegian PhD School of Heart Research |
| NRSN | Norwegian Research School of Neuroscience |
| AMFF | Norwegian Research Fund for General Practice |
| NIFU | Nordic Institute for Studies in Innovation, Research and Education |
| NINA | Norwegian Institute for Nature Research |
| NOKUT | Norwegian Agency for Quality Assurance in Education |
| PRIO | Peace Research Institute Oslo |
| RCN | Research Council of Norway |
| SINTEF | Institute for Applied Research, Technology and Innovation |
| UHR | Norwegian Association of Higher Education Institutions |

1. Structure of the report

The Research Council of Norway (RCN) established the scheme for national research schools (FORSKERSKOLER) in 2008. The scheme was launched as a supplement to ordinary PhD programmes, offering specialised courses and networks across institutions.

In this report the evaluation panel presents the outcome of the mid-term evaluation of the ten schools awarded funding in 2012 and some insights gained from the overall review of the schools.

Chapters 2–4 provide an introduction to the Norwegian PhD education system and to the FORSKERSKOLER scheme. The evaluation process and the members of the evaluation panel are also presented.

Chapters 5 and 6 summarise the evaluation of each of the ten research schools:

- Norwegian Research School in General Practice (NAFALM)
- Norwegian PhD School of Pharmacy (NFIF)
- Norwegian PhD Network on Nanotechnology for Microsystems (NANO-NETWORK)
- Norwegian PhD School of Heart Research (NORHEART)
- Research School on Peace and Conflict
- Norwegian Graduate Researcher School in Linguistics and Philology (LingPhil)
- International Research School in Applied Ecology (IRSA)
- Research School of Computer and Information Security (COINS)
- National Research School in Population-based Epidemiology (EPINOR)
- Norwegian Research School of Neuroscience (NRSN)

The panel recommends that funding for all ten schools is continued for the full-eight year period, in keeping with the proposed budget.

The chapters also present recommendations for each of the schools, as well as some general advice for the schools and for the Research Council of Norway.

2. Introduction

The scheme for national research schools (FORSKERSKOLER)

The FORSKERSKOLER scheme was established in 2008, based on a report commissioned by the Ministry of Education and Research in 2006. The purpose of the scheme is to enhance the quality and raise the academic level of PhD education by encouraging leading national institutions to join forces. The national research schools are a supplement to ordinary PhD programmes. Thus, it continues to be the individual academic institutions, not the research schools, that confer PhD degrees upon their own candidates. All PhD candidates who take part in a national research school must first be admitted into an ordinary PhD programme at a degree-conferring institution, and must consequently fulfil the requirements defined by that institution.

The research schools are expected to contribute to increasing the degree completion rate and reducing degree completion time, as well as to ensure a broader base in researcher training. They should in particular strengthen doctoral training in specialised subject areas through organised cooperation between institutions. Typically each school will have a number of partners, one of which serve as the host institution and take a leading role in the consortium. The host institution must be a higher education institution offering PhD programmes. Most of the partners should also offer PhD programmes, but higher education and research institutions without PhD programmes may also join in as partners.

The FORSKERSKOLER scheme is financed by the Ministry of Education and Research and administered by the Research Council of Norway (RCN).

The first call for proposals was issued in 2008 and five national research schools were awarded grants for an eight-year period. Funding for the final three years of the period was made contingent on a positive outcome of a mid-term evaluation carried out after approximately four years.

The second call was issued in 2012. Ten research schools were awarded grants and started their activities in 2013.

The third call was issued in 2015 and seven research schools were awarded grants.

The Norwegian PhD system

The Norwegian PhD education system conforms with the Bologna reforms of 2002 and is part of the European Qualification Framework. It has a three-level degree structure, with bachelor's, master's and PhD degrees. The Norwegian Agency for Quality Assurance in Education (NOKUT) is responsible for accreditation and quality assurance of the higher education institutions, and the Norwegian Association of Higher Education Institutions (UHR) develops recommended guidelines for regulation of PhD degrees. The Norwegian PhD education system was evaluated in 2011–2012, and much of the information in this section is based on the evaluation report: *PhD education in a knowledge society: An evaluation of PhD education in Norway*, [NIFU Report 25/2012](#).

Within these regulatory frameworks, the *universities* and the *specialised higher education institutions* can stipulate more detailed regulations for PhD degrees at their own institution, although they generally follow the recommended guidelines for regulation of PhD degrees adopted by the UHR. NOKUT grants the right to award PhD degrees to the *university colleges*.

A PhD degree is only attainable by following a structured programme, consisting of a research component and a taught component (courses) of at least a half year of full-time study. "Doctoral education normally consists of three years of full-time study, and includes required coursework

comprising a minimum of 30 ECTS credits. The way in which doctoral education is organised is to be stipulated in the institution's regulations" (from the UHR guidelines).

Each institution normally has one general set of regulations for its PhD degrees. There may also be specific regulations for each PhD programme. According to the UHR recommendations, the degree-conferring institution is to sign a written agreement with each candidate admitted to one of its PhD programmes, regulating academic supervision, coursework and other training. The institution is responsible for providing adequate courses for the candidates at the institution itself or facilitating participation in relevant courses at other institutions. PhD-level courses taken at other institutions are to be approved according to the rules of the Act relating to universities and university colleges.¹

There are significant differences between the Norwegian higher education institutions regarding the balance between the coursework component and the research component of their PhD programmes. There is also significant variation regarding the proportion of ECTS credits assigned to mandatory courses and the proportion of the coursework which candidates are allowed to take outside the institution.

The volume of the PhD system

Most of the universities have one PhD programme per faculty, but each programme may have discipline-based specialisation tracks with different study plans. In the restructuring following the white paper on the structural reform of the university and university college sector (Meld. St.18 (2014–2015) *Konsentrasjon for kvalitet* [Consolidation for quality]), mergers between 33 higher education institutions have reduced the number to 21. This number is expected to be further reduced in the years to come. The ambition of the reform is to enhance the quality of education and research. It is expected that PhD education will also profit from the mergers. The landscape of higher education institutions is still heterogeneous, however, as are the PhD programmes.

The total number of persons enrolled in PhD programmes in Norway is presently about 10 000. Most of the research fellows are employed at higher education institutions, with some 1 000 employed at research institutes, university hospitals, etc. About 1 900 new PhD agreements were signed in 2015 and this number has been increasing every year. The total number of PhD degrees awarded nationally has also increased steadily, from 647 in 2000 to 1 436 in 2015. Fifty-two per cent of the degrees were awarded to women. The total number of degrees awarded has decreased slightly since 2015, when 1 436 degrees were awarded, the highest number ever.

3. The evaluation panel

The scheme for national research schools (FORSKERSKOLER) is coordinated by a *scientific programme committee* ("styringsgruppe") of Nordic scholars with significant experience from research schools in the other Nordic countries. The committee was appointed by the Research Council for a five-year period (spring 2013–spring 2018) with the following mandate: To be responsible for the process of assessing grant applications, to follow up the schools awarded funding, and to conduct the mid-term evaluation.

¹ Lov om universiteter og høyskoler – LOV 2005-04-01 nr. 15.

The following members of the scientific programme committee for the FORSKERSKOLER scheme thus constituted *the evaluation panel* during the mid-term evaluation period:

| | |
|---|-----------------------------------|
| Universitetslektor Göran Gustafsson (chair) | Chalmers University of Technology |
| Professor Hanne Marlene Dahl | Roskilde University |
| Professor Jens Jørgen Gaardhøje | University of Copenhagen |
| Professor Christina Gustafsson | Uppsala University |
| Professor Inga Sanner | Stockholm University |
| Vice-dean Lise Wogensen Bach, DMSci | Aarhus University |

The purpose of the mid-term evaluation is to assess the quality and success of the ten research schools in relation to their original objectives and plans and to provide a recommendation to the Research Council as to whether the funding for the individual research schools should be maintained for the full eight-year period or terminated after five years.

4. Evaluation process

The mid-term evaluation has been based on the following documents and background material from each of the research schools:

- A self-evaluation in a standardised form, submitted by the project manager and the chair of the board of each school. The research schools were asked to evaluate themselves in relation to their originally stated objectives and plans. Self-evaluations were also required to include an analysis of the research school, including courses and activities, PhD education, recruitment, organisational aspects, national and international collaboration, and any added value.
- An assessment by the partners, summarising the experience gained from being part of the national research school. (See the attached form.)
- An assessment by the PhD candidates, summarising the added value and experience of being a member of a national research school. The response rate from the PhD candidates varied from 18 to 74%, and this has been taken into consideration when assessing the evaluation forms submitted by the candidates. (See the attached form.)
- Dialogues with representatives of the ten research schools conducted by the panel at the RCN's offices at Lysaker on 23 and 24 January 2017. The dialogues consisted of:
 - Presentations delivered by each of the project managers (school directors) based on a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats);
 - Meetings with the project manager (school director), chair of the board and selected board members for each school (in all two to six representatives per school);
 - Separate meetings with one to three PhD candidates from each research school.

The panel has based its evaluation and recommendations for each of the schools on this background material together with the original grant applications submitted to the RCN.

The panel has also assessed the most recent progress reports submitted by each of the research schools. However, the structure of these reports makes it difficult to assess the individual school's financial situation.

In addition, the overall observations and recommendations in the report also benefit from the panel's having followed the schools from the beginning, and in general from the panel members' experience from research schools in Denmark and Sweden.

5. General observations and recommendations

The overall impression of the panel that conducted the mid-term evaluation is that the research schools clearly provide added value for the PhD candidates. The well-functioning national networks of PhD candidates built by the candidates themselves comprise one of the most important benefits. According to the majority of the PhD candidates, the research school with which they are affiliated plays an important or very important role for creating contacts and networking with other PhD candidates.

The majority of the PhD candidates who responded to the questionnaire view the quality of the courses, seminars and gatherings at their research school as very high. A large proportion of the PhD candidates also add that the research school has played a positive role in enhancing the quality of their own doctoral work.

The research schools' internationalisation efforts have also been successful. English is the working language at most of the schools, and several schools have international board members. Many draw on international experts for teaching and seminars. Several of the schools actively encourage PhD candidates to conduct a shorter stay abroad and offer financial support for such stays. The candidate groups are also highly international, although some more so than others. The partner institutions are on the whole very satisfied with the research school's internationalisation efforts and how these have promoted international networks and/or cooperation.

The evaluation panel has identified a set of problems common to most of the research schools, and would like to draw attention to the following:

- **Binding agreements.** There must be binding agreements between the host institution and the partner institutions that ensure:
 - Mutual approval of the number of ECTS credits earned for each of the courses at the research school. Ideally the partners should approve the same number of ECTS credits for all courses carried out by the research school.
 - Active participation on the part of all of the partners with regard to planning, organisation and scientific contributions.
- **Composition of the board.** The research schools are to seek to achieve gender balance on the board (between 40–60% of each gender). There should be at least two PhD candidate representatives on the board, and these should be elected by the PhD candidates. The candidate representatives should come from different institutions.
- **Generic skills.** Education and training in general skills, including career planning measures, should be an integral component of PhD education and may therefore also be included in the courses and activities offered by the research schools. This is particularly important in cases where the partner institutions are small and do not have sufficient capacity to provide these types of activities themselves.
- **Supervision.** High quality in PhD education is dependent on good supervision. As is the case with activities related to generic skills, competence development measures for supervisors are also suitable for inclusion in the research schools' portfolios.
- **Continued operation when Research Council funding ceases.** The research schools should draw up concrete plans for continued operation of the school as a whole, or find other solutions that ensure that best practice from the research school continues to be applied.
- **Webpages.** The research schools must have up-to-date webpages and course information must be easy to find. The webpages should also include easily accessible overviews of the management and administration, members of the research school and supervisors affiliated with the research school.

In conclusion, the panel would like to remind the research schools that they are receiving funding to enhance the quality of PhD education for PhD candidates. A number of research schools have members that are not PhD candidates. The panel does not object to this practice as long as it enhances the quality of PhD education and does not appropriate resources (such as travel grants and funding to cover course costs) that should be used on PhD education.

The panel would like to offer the following recommendations to the Research Council of Norway:

1. **New funding announcements for national research schools.** The Research Council should clearly inform the research schools that there are no concrete plans to announce new funding for research schools in the years directly following the termination of Council funding. If a new funding round is to be announced, priority will not be given to extending the operating period for existing national research schools.
2. **Success criteria.** In connection with any future funding announcements, the Research Council should draw up clear, verifiable performance indicators and success criteria for the research schools.
3. **Quality assurance.** The Research Council should request a description of a quality assurance system that includes both processes and documentable results for each research school.

6. Evaluation of the research schools

The panel recommends that funding for all ten schools in the evaluation is continued for the remaining project period, as defined in the contract between the Research Council of Norway and the research schools. Each of the evaluated schools is given specific advice for continued operations in the respective sections of this chapter.

6.1 Norwegian Research School in General Practice (NAFALM)

Facts about NAFALM 221823

- Operating period: 2013.01.01–2020.12.31.
- Grant (funding pledge) for the entire period: NOK 23.8 million.
- UiO is the host institution and there are 4 other partners: UNIRESEARCH, UiB, NTNU and UiT The Arctic University of Norway.
- PhD candidates are recruited from the 5 partner institutions and must submit an application to the school. The school also takes contact with PhD candidates who have received a grant from the Norwegian Research Fund for General Practice (AMFF).
- In its first year of operation, the research school admitted 17 PhD candidates as members and admitted an additional 39 PhD candidates in 2016. Two candidates have completed their dissertations.
- Two main courses are held annually, which together provide 8 ECTS credits. Twenty webinars, one research school seminar, and 2–4 elective PhD courses and workshops are also held annually.
- NAFALM has established binding agreements between the partner institutions on mutual approval of the research school's courses.
- All the partner institutions are represented on the scientific board, along with one PhD candidate representative and one international representative.

Objectives of NAFALM (from the contract)

The main aim is to develop and strengthen capacity for research training for PhD candidates in general practice through efficient collaboration in research.

The specific aims of the research school are:

- To secure a new generation of well-qualified researchers in general practice, both for the general practice university units and for the primary health care sector;
- To foster an excellent international standard of general practice research training in Norway;
- To create a national environment for theory and research methods development suitable for exploring specific medical problems in the general practice setting;
- To advance a creative and sustainable environment for general practice research in Norway;
- To stimulate general practice PhD candidate mobility nationally and internationally;
- To facilitate both multidisciplinary and interdisciplinary collaboration.

Achievements

General practice is a young and interdisciplinary academic subject. Assembling a sufficiently broad and creative environment has posed some challenges, but the responsible actors appear to have been successful. NAFALM has managed to recruit its target group – PhD candidates in general medicine – although the plan was to recruit an even greater number of candidates. The main target group – candidates who are clinically active in general medicine – constitutes about 80% (49 out of 61) of those who are admitted, with the remainder comprising PhD candidates from other accepted disciplines (nurses, pharmacists, anthropologists, social scientists and chiropractors) with dissertation projects of relevance to general practice. Participation in the courses is high, and both national and international qualified lecturers have been involved. Throughput is classified as high and articles are published in international journals. However, study time is prolonged because a large proportion of the candidates is clinically active and on half-time study. The supervisors are also clinically active part-time. Nevertheless, the research school is helping to strengthen the qualifications of a new generation of researchers in the field and is establishing an international standard of practice-based research in general medicine in Norway. The PhD candidates also agree that NAFALM is strengthening the field and has had a positive influence on PhD education in the field.

Well-functioning cooperation between the partner institutions has made it possible to develop and implement the special methodological courses required in general medicine. Research collaboration between partner institutions also has increased to some extent. There is a binding agreement between the partners regarding mutual approval of ECTS credits for the research school's courses.

Many PhD candidates are working part-time as general practitioners far away from the university cities, which means that their role as PhD candidates has enabled them to build networks across the country. With the help of ICT – webpages, digital learning platforms, web-based seminars (webinars) and Facebook – the actors have been able to develop creative environments.

NAFALM has managed to encourage candidates to conduct a stay abroad to a varying extent. Two candidates have conducted a research stay abroad of more than three months and another five have conducted a shorter stay abroad. Participation (with presentations) at international conferences is high (18 candidates at a Nordic conference in 2015 and 19 candidates at a European conference in 2016), although there is no funding available to cover travel expenses in connection with conferences. Participation in the annual general medical congress in Norway is high.

Recruitment of PhD candidates from other disciplines has helped to promote both multidisciplinary and interdisciplinary cooperation. Several lecturers with different disciplinary backgrounds (statisticians, historians, biologists, pharmacists) have been hired.

Management and structure

The management and organisation of NAFALM appear to be functioning well. This is confirmed by the student survey, although the answers regarding fragmented opportunities to influence the educational process are less clear. The meetings of the scientific board of the research school are held in connection with the annual research school seminar, and there are two or three web-based meetings a year as well. The web-based meetings have helped to cut costs. In addition to an administrative coordinator and a project manager, three of the partner institutions also have scientific coordinators. These coordinators have provided a basis for ongoing contact with the candidates in the local environment in relation to courses and follow-up of study planning.

Coordination, facilitation and national network

Cooperation between the partner institutions is very good. According to the host institution, the other institutions are fulfilling their obligations to a very high degree. All the institutions contribute both to courses and to supervision, and there have frequently been contributors from different

institutions to the same course. The partners are very positive to the cooperation and consider the research school to be a success. One discrepancy here is that some of the PhD candidates who answered the questionnaire feel that cooperation between the NAFALM supervisor and the supervisor at the home institution has not been optimal. However, not all of the candidates have a NAFALM supervisor (16 of 34 respondents).

Activities

The teaching language is primarily Norwegian. This is a conscious choice determined by the subject area. However, sometimes the teaching language is English. The PhD candidates are positive to this. The research school's activities consistently receive positive or very positive reviews by the candidates, although several candidates expressed a desire for more training in, for example, qualitative research approaches. A total of nine different courses, both mandatory and optional, have been held since NAFALM was started. One course has been offered four times, two courses three times, one course twice and the other five courses once. The courses range from one to five ECTS credits, and they have generally been offered in connection with the annual research school seminar. The optional courses have been open to external participants. One course has been offered in collaboration with the Norwegian PhD School of Pharmacy (NFIF). In addition to one course focusing on the general medical canon, courses have focused on methodology, qualitative and statistically oriented research methods, research dissemination and presentation skills. Seventeen candidates have participated in each of these courses on average. It is added value that the courses offered by the research school generally do not overlap with courses at the partner institutions.

Four two-and-a-half-day research school seminars have been held. The first three were open to PhD candidates and supervisors. Alumni were also invited to the most recent seminar in 2016. All seminars have been well attended (28 the first year, increasing to 74 participants last year). A workshop for the supervisors focusing on a specific theme has been held three times. At the research school seminars there have also been opportunities to present posters, training sessions for defence of dissertations and plenary lectures. A one-day workshop on using focus groups as a research method (12 participants) was held, in addition to a shorter symposium aimed at creating a network for future primary health care research in collaboration with research schools in Sweden and Finland. The partner institutions have emphasised the importance of developing this network. According to the PhD candidates, the research school provides added value in the form of informal supervision and exchange of experience at meetings and through networking, better presentation, writing and methodology skills, and an overall understanding of general practice rather than simply subject-specific knowledge.

The PhD candidates' background as active practitioners in general medicine is regarded as both a strength and a weakness. The advantage is that participants are motivated and that working in general practice offers good opportunities for clinical projects in general, whereas longitudinal studies or interventions require a longer period of time. The disadvantage is that the dissertation project takes longer; the average age of those who complete their doctorate is 40 years. There are only a few young candidates; about one-third of the questionnaire respondents are under 35 years.

ICT is very important for communicating with the PhD candidates. Gatherings in cohorts and webinars has led to networking both within the cohorts and between the cohorts. Some of the candidates feel that the technology has not functioned optimally.

Internationalisation

In addition to networking within and between the different PhD cohorts, several established networks in Europe are involved in NAFALM. It is mentioned that 11 articles have been co-authored by NAFALM's PhD candidates and international partners. One of the editors of *The Lancet* has ties to the research school. This is an important element in the internationalisation process and in the effort

to increase international publication frequency. NAFALM and its activities have also been presented at three international conferences, which has led to an EU grant application for establishing a Nordic research school that includes NAFALM's courses. There is a desire for NAFALM to encourage more candidates to conduct a stay abroad, and two of the scientific coordinators will now focus specifically on this. One problem is that the candidates are working professionally part-time and a stay abroad requires full-time study as well as replacement of staff in the clinical practice.

According to the answers to the questionnaire, the knowledge about financial support for stays abroad varies among the PhD candidates. Candidates who have been abroad write travel reports on the research school's blog and are also invited to give a presentation at the annual research school seminar. Contacts and networking with other PhD candidates have been highly appreciated. Nine different awards at national and Nordic conferences have been presented to six PhD candidates enrolled in the school.

In summary, NAFALM has adequately fulfilled the internationalisation requirement with different types of actions. However, in the self-evaluation there are several proposals for improving goal achievement with regard to internationalisation, e.g. more lecturers from abroad and more and longer stays abroad for the candidates.

Future perspectives

When it comes to plans for continuation of the school after funding from the Research Council has ended, there are suggestions pointing in different directions. The evaluation panel sees a genuine interest on the part of both the host institution and the partner institutions in continuing the school, and the proposals that have been put forward are reasonable alternatives on their own and taken together. One idea is for each partner institution to finance its own scientific and administrative coordinators. Expenses for research school seminars and webinars could be covered by the PhD projects' operating funds. Another suggestion is to collaborate on courses and workshops at the national and Nordic level as well as with research schools in general medicine in the Netherlands and Belgium. There are also plans to seek external funding for continuation of operations. The alumni themselves took the initiative to establish the currently active alumni group and this may be seen as an indication of a continued need for ties to an established research environment.

Gender aspects

More than two-thirds of NAFALM's participants are women, and this reflects the gender distribution of students in medicine and health science. From 2017 there will be a predominance of men on the scientific board. However, the scientific leader and the administrative coordinator of the research school are women, as are three of the five scientific and administrative coordinators at the partner institutions.

Overall evaluation and recommendations

NAFALM has a good reputation and is highly appreciated by the PhD candidates and the partners in the consortium. The response rate to the survey was good. The internationalisation requirement has been fulfilled to a varying extent. The research school would like to see the candidates conduct more and longer stays abroad. There are binding agreements between the partner institutions regarding mutual approval of ECTS credits. A lower level of involvement on the part of the supervisors has been noted; the responsible leaders state that too few activities have been targeted towards supervisors. Concerning the future, all partner institutions are eager to ensure that the research school is continued. NAFALM has several proposals for continuation, e.g. collaboration within Norway and with international research schools. It would also be possible for each partner institution to be responsible for certain expenses. However, there is a threat that there could be too few candidates for NAFALM in the longer term.

In conclusion, NAFALM appears to have followed and achieved its original objectives, although enrolment has fallen somewhat short of initial expectations. The overall picture is that NAFALM is a research school that performs an important function for a target group that would otherwise probably have chosen specialist training. Continued funding is recommended. There is, however, room for improvement. The panel therefore recommends the following:

- Information about stays abroad should be clearer and steps should perhaps be taken to provide greater encouragement.
- In the event of changes to the scientific board, NAFALM should strive for a more even gender balance.
- All good proposals for continuing the research school after funding from the Research Council ends should be taken up for discussion already now to ensure that implementation plans for continued operations are drawn up.
- A foresight analysis should be conducted on the technical aids used, especially in connection with the webinars, so that the candidates do not have reason to complain about this.

6.2 Norwegian PhD School of Pharmacy (NFIF)

Facts about NFIF 221832

- Operating period: 2013.01.01–2020.12.31.
- Grant (funding pledge) for the entire period: NOK 23.75 million.
- The School of Pharmacy at UiO is the host institution. There are 4 other partners: Nord University (previously University College of Nord-Trøndelag), UiB, UiT and HiOA.
- Course participation is voluntary, but all PhD candidates in pharmacy at the partner institutions automatically become members of NFIF. Other students have to apply for membership.
- In its first year of operation (2013) there were 95 PhD candidates registered at the school, and this figure was the same in 2016. Fifty-eight PhD candidates have completed their dissertation.
- The school holds an annual conference. In addition, 2 of the institutions organise breakfast meetings for PhD candidates. Three to 7 PhD courses are held each year, along with annual networking gatherings for PhD candidates and post-doctoral fellows.
- NFIF has established binding agreements between the partner institutions on mutual approval of the research school's courses.
- The board is comprised of 11 members, and all the partner institutions are represented. There are 6 women members, 4 PhD candidate representatives and 1 external member on the board. In addition, the school also has a scientific board comprised of members from UiO, University of Helsinki, University of East Anglia (UK) and UiB.

Objectives of NFIF (from the contract)

The purpose of the PhD school is to coordinate and improve the PhD studies at the five universities and colleges that educate pharmacists and PhD students in Norway. The school will be organised by the School of Pharmacy at the University of Oslo. The PhD school aims, through a yearly seminar/workshop, two shorter courses/workshops (yearly) and exchanges of visiting students between the five educational institutions and international contacts (universities and industry), to improve PhD education. The seminars, courses and workshops will be open for all registered PhD students whether engaged primarily at one of the five the institutions or performing their studies elsewhere. The school will arrange an advisory and discussion session for PhD supervisors in connection with the yearly seminar to exchange knowledge and to further collaborate on arranging new PhD courses. The school will support some PhD student travelling to international conferences.

Achievements

Some of NFIF's objectives are more concerned with establishing the framework for study than with the expected results of educational processes. This framework have been realised. The other objectives have been achieved for the most part, especially the internationalisation objective. In addition, the management has added another objective, innovation including entrepreneurship, that

is expected to lead to different types of partnerships such as networks, courses, meetings between industry and academia, as well as collaborations with other research schools. In their assessments, the partner institutions generally emphasise the higher quality of the education. However, in the self-evaluation, the host institution emphasises internationalisation and the ability to take advantage of talent, although it does note that the courses/activities have been successful ventures. The annual research school conference is regarded as important for the coordination of the different institutions and for upholding their commitment. An activity for the supervisors is also organised at these conferences.

Management and structure

The management of the research school appears to be well organised. The composition of the school board is based on certain criteria, the board has the firm support of the partner institutions, and it meets four times a year. One board member comes from a national research school that started earlier. The board is gender balanced and includes four PhD candidates. NFIF has also a scientific advisory board, which currently consists of three men; this gender imbalance is commented on in the self-evaluation. The topic has been discussed with the scientific advisory board members and the NFIF board members, who do not view the composition of the board as a problem. However, it was decided to test it out the coming year and if necessary recruit new members. According to the questionnaire, some PhD candidates consider the organisation to be very good, while other candidates are moderately positive.

Coordination, facilitation and national network

One partner institution points out that NFIF has contributed to increased national cooperation. The research school has formed networks of PhD candidates and supervisors and its courses are accepted at the partner institutions. However, there is some doubt as to whether all of the partners are fulfilling their responsibility. No partner has expressed that NFIF has increased research cooperation to a very high degree. In certain places it has been difficult to involve both supervisors and candidates.

The numbers in the candidate questionnaire are difficult to interpret. One candidate, for example, would like local activities at UiB. According to the self-evaluation, UiB, whose educational structure in the field of pharmacy is described as fragmented, will contribute more in the coming years. On the other hand, UiB's PhD candidates are described as very committed.

Coordination and the national network function smoothly for the most part, and it is emphasised that there is good cooperation on courses, good information and good financial support for the candidates' internationalisation activities. The partner institutions responded that the administrative workload has increased, that the course portfolio should be expanded and that there is a desire to see more supervisors participate in joint activities.

Activities

NFIF has many reported activities, some of which take place on a recurring basis. A two-to-three-day annual conference has been held four times, with roughly 70 participants. The research school has chosen to offer both generic courses and specific courses. There are binding agreements between the partner institutions regarding mutual approval of ECTS credits.

In the period 2013–2016, UiT was responsible for five courses, UiO for four courses and HiOA for two courses. There were more activities organised in 2016 than in previous years; four of the seven courses held had, however, been offered before. Two courses were held in connection with conferences in Germany and Sweden. The number of course participants is low in proportion to the number of registered PhD candidates – averaging nine participants, with the exception of a course connected to a conference. It appears that many candidates take only a single course or no courses

at all from the courses offered by NFIF. In order for a course to be held, there must be at least six participants. NFIF therefore allows associate participants to fill up the courses.

Locally, UiO organised four (two, three planned) breakfast meetings for PhD candidates, with 25–30 members present. During autumn 2016, UiT also organised breakfast meetings; three were held with 10–15 participants and two more are planned. In addition to these activities, a network of PhD candidates (about 10) and post-doctoral fellows met six times in 2015 and three times during the first nine months of 2016. In 2016, a guest lecturer from Canada visited NFIF for a couple of days (35 participants) and the Norwegian Microbiology Meeting took place with 40 participants from the research school.

The annual meetings are seen as a type of networking meeting between PhD candidates and teachers. Apart from these, there is no mention of special networks of candidates and teachers created between the institutions.

In addition to the annual meetings, the actors can communicate electronically and via a website that is updated with news and information for both the candidates and the supervisors. Travel reports and defence of doctoral dissertations are disseminated regularly. A newsletter is sent out four times a year via email, and Facebook and Twitter are also used to spread news. Thus, several communication channels have been chosen to disseminate information, but their effectiveness does not seem to have been evaluated.

Almost one-fourth of the registered candidates answered the PhD candidate questionnaire. The respondents are predominantly positive to content and courses, but there are individual negative comments. Very few candidates have had supervisors through the research school. According to half of the respondents, the research school is not of any importance to the completion of their PhD degree.

From the actors' point of view, an extended course portfolio would be desirable and the supervisors could be more involved. NFIF offers financial support for creating new courses for the research school; information about this is available on its webpages.

Internationalisation

It appears that NFIF gives priority to enabling PhD candidates to conduct a research stay abroad and also offers financial support for conference participation. Both the partner institutions and the candidates stress that the school has a successful travel grant scheme. It is unclear what constitutes an international collaborative partner for NFIF, but such partners have their own international networks.

As a result of international cooperation, 23 publications were co-authored with an international colleague in 2015. All courses have involved international speakers. Two courses have been organised abroad. Seventy-nine travel grants to destinations all over the world (but mostly to the US) have been allocated, and 12 of the candidates have stayed abroad for a continuous period. Prior to autumn 2016, research stays abroad of more than three months were not permitted. As of late autumn 2016, it has been possible to apply for grants for research stays abroad of over three months. Given that a large proportion of the budget goes to support for travel in connection with conferences and stays abroad, it is very positive that NFIF has listened to the PhD candidates' opinions and experiences and has also evaluated the benefits of these investments. Five candidates have received awards in five different international activities, such as, for example, for the best poster, the best oral presentation and the best scientific presentation.

The PhD candidates' feelings about international guest lecturers, international experts and the like are unclear. When the candidates mention internationalisation, they mainly refer to financial support received for conference participation or stays abroad. The partner institutions emphasise that this type of support could not be awarded without the research school.

Future perspectives

Plans for continuation of the research school have obviously been discussed. The host institution believes that attractive courses will be continued after funding from the Research Council has ended, and there is an ambition to ensure that the courses will be continued. One idea is to investigate the possibilities for seeking funding from other sources, e.g. NordForsk. Another idea is for the NFIF partner institutions to create a joint fund that would provide a basis for further cooperation and financing of various activities. Another proposal is to bring in the pharmaceutical industry as a sponsor.

Gender aspects

The gender distribution at NFIF is unclear, as is the gender distribution among the supervisors. The board has an even gender balance; two of the four PhD candidates are women and two are men. The scientific advisory board consists of three men at the moment; this has become a topic of internal discussion but there are no concrete plans to change this.

Overall evaluation and recommendations

NFIF's original objectives have been achieved. The addition of the new objective for innovation and entrepreneurship should be seen as an interesting development. Likewise, it is positive that NFIF has taken steps to establish industry contacts. It is, however, still too early to see the results of this effort. The board and scientific advisory board are very active. The internationalisation objective has successfully been achieved by offering travel grants and financial support for stays abroad; this is also something that the candidates and the partner institutions both mentioned most frequently. There is no doubt that this was seen as the research school's greatest added value. NFIF has used various names (Nasjonal forskerskole i farmasi, the National PhD School of Pharmaceutical Sciences, the Norwegian PhD School of Pharmacy and the acronym NPSPS). Regardless of which keyword is entered in a browser search, one ends up at the website for the School of Pharmacy under the Faculty of Mathematics and Natural Sciences at the University of Oslo. Once there, NFIF's webpages are informative and easy to navigate. With the exception of the annual meetings, the students do not appear to feel particularly tied to NFIF, even though they automatically become full members when they are admitted to a doctoral programme in pharmacy at one of the partner institutions. There have also been difficulties involving supervisors. From the activities offered it can be deduced that so far two partner institutions, together with the host institution, have taken on major responsibility. The future of the research school has been discussed. There is an ambition for the courses to continue. One plan is to investigate the possibilities for seeking funding from other sources and another proposal is to bring in the pharmaceutical industry as a sponsor. The evaluation panel recommends that funding be continued. There is, however, room for improvement, and the panel recommends the following:

- The uneven accountability among the partner institutions should be discussed and a plan that includes all the institutions should be developed.
- For many candidates as well as the partner institutions, the possibility of receiving travel grants and financial support for a research stay abroad for a continuous period appears to be the most essential benefit of NFIF. The panel would like to see this issue explored in greater depth: is this sufficient for achieving the internationalisation objective?

- NFIF should consider whether the three male members of the scientific advisory board should themselves decide whether the group should be expanded.
- Given that expectations for the new objective – innovation, including entrepreneurship – are high, the discussion of how to evaluate achievement of this objective should begin now so that the necessary documentation procedures can be introduced as soon as possible.
- The research school should use only one name and acronym when talking and writing about the school.

6.3 Norwegian PhD Network on Nanotechnology for Microsystems (NANO-NETWORK)

Facts about NANO-NETWORK 221860

- Operating period: 2014.01.01–2019.12.31.
- Grant (funding pledge) for the entire period: NOK 17.7 million.
- NTNU is the host institution. Present partners are SINTEF IKT, UiB, HSN (previously the University College of Vestfold) and UiO.
- PhD candidates are recruited from the partner institutions and from other institutions where there are PhD candidates with projects that fall within the thematic framework of the research school. Participation is voluntary.
- In 2016, there were 118 PhD candidates and 27 post-doctoral fellows enrolled in the school. Thirty-five PhD candidates have completed their dissertation thus far.
- Eight courses in compact format and one workshop are held annually. The research school also finances participation in lab courses for PhD candidates.
- There are no binding agreements between the institutions on mutual approval of ECTS credits.
- The board consists of 7 members. All the partner institutions are represented on the board, along with an external, international board member and a PhD candidate representative.

Objectives of NANO-NETWORK (from the contract)

The chief objectives of this proposal are to coordinate, integrate, and support doctoral training in the field of nano- and microsystems engineering in Norway, to be achieved by continuation of the national PhD network on "Nanotechnology for Microsystems" (cf. <http://www.nano-network.net/>) established 2009 with funding (through 2013) from the RCN's NANOMAT programme. Drawing on the strengths of the partner institutions and the research infrastructures available in the NorFab consortium and the UiB nanostructuring facilities (cf. <http://www.norfab.no>), the network will serve to expand in scope and depth and to improve the scientific quality of PhD training programmes in this field nationwide. Secondary objectives are: (i) increased and more timely completion of PhD degrees, (ii) extended contacts between the academic research community and the Norwegian microsystems industry, and (iii) improved international visibility of Norwegian research in the field of nano- and microsystems technology.

Achievements

The NANO-NETWORK school offers PhD courses organised in a compact format, i.e. two to three blocks of one-week duration. The school advertises courses on its webpages and offers participants

travel and accommodation allowances. A call for financial support for participation in conferences and summer/winter schools is issued twice a year.

Seventy-nine PhD candidates completed their degrees in the period 2009–2016. The PhD candidate population in any given year is around 100. The organisation of the annual workshop rotates among four institutions, and the workshop has contributed importantly to the development of networks among candidates and supervisors.

Overall, the school appears to have succeeded in establishing a strong network in Norway, drawing on the research infrastructures of the NorFab consortium and the UiB nanostructuring facilities. The self-evaluation highlights the scientific quality, the networking and the access to state-of-the-art facilities for candidates as the clearest achievement of the school relative to its objectives.

It is less clear whether completion time has been reduced. Likewise, there are no statistics on employment of the candidates after degree completion

Management and structure

The NANO-NETWORK board comprises representatives from the partner institutions, a PhD candidate representative and a (Norwegian) professor from Stanford University. The NANO-NETWORK management team is listed as a further source of information. This team consists of three representatives from NTNU (the head and deputy head of the network and the coordinator) and a representative from each of the four partner institutions. The management team meets four to six times a year.

The board plays an important role in evaluating and approving the budget and accounts. This is considered to work well. The role of the supervisor community is not specified. The participation of the partner institutions varies.

However, it is a challenge for the school concept (in general) that supervision is the responsibility of the partner institutions, with the main authority belonging to the home (degree-conferring) institution.

It is seen as a problem that there are administrative barriers between partner institutions (in terms of flexibility of registration, advertising school PhD courses on own webpages, etc.).

According to the management team, feedback from the PhD candidates is generally good and candidates have a say in all school-related matters.

The PhD candidates are very satisfied with the opportunity to meet other PhD candidates working on different dissertation projects at workshops and courses and establish new professional networks. The travel grants and access to national and international laboratories are considered essential. According to some candidates, a stay abroad during the study period should be a formal requirement.

Coordination, facilitation and national network

It is mentioned in the self-evaluation that the various partner institutions operate with their own, divergent rules concerning approval of curricula and credits, but that in practice all partners recognise the ECTS credits for activities carried out under the school umbrella.

It is difficult to evaluate the degree to which partners fulfil their obligations, as the host institution mentions that the responsibilities of the partners were not clearly defined at the outset. Overall, the partners generally express satisfaction with the school, its activities and its impact.

The extent of participation of the various partners in school activities varies. The courses are held most often by a member of the management team. It has proven easier to get researchers and other staff to participate in the workshops.

The partner institutions express that they are generally very satisfied with the school and that it has increased mutual cooperation.

Only two of the partner institutions state that there are binding agreements between the school and the institutions (one partner does not know whether such agreements exist). It is also mentioned that some of the partners could be more involved.

Activities

The partner institutions' contribution to course activities has decreased each year since 2013 (15-15-11-10, respectively). There is a similar development in relation to external contributors and possibly for international lecturers, etc. as well. It is not clear whether this reflects a trend or a deliberate choice. Several courses will be held again. Generally around ten students have participated in each course. Some courses are also offered as master's courses, which has worked less well.

Twenty-seven PhD candidates responded to the questionnaire. Seventy per cent of the respondents are between 26 and 30 years of age. The evaluation panel notes that the response rate is rather poor for a population of over 100 students.

A majority of those who responded to the questionnaire express satisfaction with the school as far as quality and preparation for future work situations are concerned, and slightly less satisfaction as regards training for the doctoral work itself. This appears to be a consequence of the division of responsibilities between the school and the degree-conferring institutions. The research school clearly strengthens networking around the courses and the access to lab facilities.

Some PhD candidates have seen the self-evaluation and express that it reflects the situation at the research school well. Some courses have been evaluated. This has led to a subsequent discussion.

About two-thirds of the candidates who answered the questionnaire state that they receive good supervision and that sparring on career prospects and issues is good.

However, most candidates have not received direct supervision from the research school itself (but from local supervisors instead).

Internationalisation

The research school provides financial support for travel in connection with conferences, and for research stays abroad of both up to and over three months. The school also pays for international guest lecturers and access to international laboratory facilities and supports international conferences in Norway. The PhD candidates can apply for funds twice a year, but will usually only receive one grant during their study period. The maximum amount of support for participation in international conferences has been increased to NOK 20 000 and an individual candidate may be granted up to NOK 40 000 for (longer) stays at special (lab) facilities. The supervisor must certify that the application is relevant. Teachers and post-doctoral fellows are also eligible for support from the school, but priority is given to PhD candidates. No stays beyond three months were reported. Details on other types of stays/support were not provided.

The majority of the published articles include the participation of international authors. The research school also mentions that the scientific activities are the responsibility of (and paid for by) the candidates' own institutions. As such, the scientific production is not necessarily an outcome of the research school. It is difficult to assess whether the school's activities have directly led to an increase in quality.

It would be useful and important to try to estimate the degree to which internationalisation has increased as a result of the school's activities, beyond the obvious benefit from funding travel and stays abroad.

The replies and comments from the PhD candidates vary. In general, the candidates express satisfaction with the research school and its activities, which supports the impression of an overall well-functioning school as far as the basic deliverables are concerned.

Future perspectives

There are no clear plans for continuation after funding from the Research Council has ended, but there is an expectation that network activities will continue on a bilateral basis. There are ideas about how to approach industry more actively with the aim of obtaining external financing.

Effort should be made to develop a plan for continued activities.

Gender aspects

The board consists of seven members (six men, one woman). The research school's management team consists of four men and three women. Out of the 27 respondents to the PhD questionnaire only four (18%) were women. Is this representative for the field, or are there other elements at play?

Overall evaluation and recommendations

Overall, the school appears to have succeeded in its basic mission, which is to develop a national and international network, ensure access to laboratory facilities, improve the quality of researcher training in the field, provide general courses not available at the individual institutions, and bring together a sizeable population of PhD students in the field from across Norway.

- There is some room for improvement in the relationships between the partners. The evaluation panel recommends that formal agreements with partner institutions are drawn up and signed, and are used as a basis for regulating the relationships and mutual competencies between the school and the partners. The partners should clearly specify their mutual commitments and responsibilities
- The formal organisation of the school could be addressed in greater depth and improved, particularly relating to the issues of shared responsibilities, supervisor involvement, lecturers, formal approval of ECTS course credits, etc
- The response rate for the PhD candidates is unsatisfactorily low, which is a pity since their input is crucial in evaluating how the school is functioning. Furthermore, the response is inhomogeneous and partly contradictory.

In summary, the "professional" aspects appear to be working well. Nevertheless, the evaluation panel is left with the impression that added value can be augmented if the school concept is fully exploited.

The panel recommends:

- Drawing up a clear plan for partner cooperation and involvement
- That efforts are undertaken to create a concrete plan for continuation of the school after funding from the Research Council has ended

6.4 Norwegian PhD School of Heart Research (NORHEART)

Facts about NORHEART 221876

- Operating period: 2013.03.01–2021.02.28.
- Grant (funding pledge) for the entire period: NOK 23.8 million.
- UiO is the host institution, and there are 3 other partners: NTNU, UiB and UiT.
- Membership in the school and participation in courses is voluntary. PhD candidates register online.
- There were 129 registered PhD candidates in 2016, of which 3 were from an international institution. A total of 41 candidates have received their PhD degrees.
- NORHEART has held more than 13 PhD courses, workshops, 3 symposia and 1 seminar thus far. There are 2–4 annual PhD courses.
- There is no general *a priori* agreement on common ECTS credits, with one exception: the course on Imaging in Cardiac Research has a formal agreement on ECTS approval between all the medical faculties.
- The steering committee consists of 15 members, and all the partner institutions are represented. There are 5 women and 3 post-doctoral fellows on the board, but no PhD candidates.

Objectives of NORHEART (from the contract)

The Norwegian PhD School of Heart Research will promote excellence in Norwegian cardiac research through education of future researchers.
The PhD school will be established to:

- promote international quality in Norwegian cardiovascular research;
- improve efficiency of PhD execution for candidates within the cardiovascular field;
- improve career opportunities for PhD candidates;
- strengthen national research networks, comprising leading academic centres and independent research groups.

Achievements

The school has a clear primary objective and four secondary objectives. The school's activities are aligned with these to a great extent.

The school offers two introductory and several specialised courses which have little overlap with the ordinary courses at the participating institutions.

World-leading scientists in heart research, including Nobel laureates, attend the school's annual symposium as well as seminars where they interact directly with the PhD candidates.

The cross-institutional networks give the PhD candidates insight into different career alternatives, and there are elements of lectures and discussions addressing what a career in science means. The school also promotes its PhD candidates and their work by presenting them on the school's webpages. They are not, unfortunately, presented in any discernible order, which makes it difficult to find a particular individual.

The school cooperates with other networks and promotes PhD candidate mobility and contacts with networks through a travel and exchange programme.

Management and structure

More than half of the 248 members of the school are PhD candidates. The school is as much a meeting place for heart scientists at different stages of their careers as it is a PhD school, which explains the large number of members. This is also consistent with the school's objectives. The school's first two years of operation were devoted to establishing the organisation and the following two years to enhancing quality. During the next four years, which is the second half of the period financed by the Research Council, the plan is to reach out to and involve all national heart researchers and PhD candidates as members.

The steering committee is comprised of 15 members, and the host institution has more representatives than the other three partners since most of the school's activities take place in Oslo. This imbalance in formal influence is, however, not perceived as negative by the other partners. There has been no representative for the PhD candidates on the steering committee since September 2016, when the previous representative completed her PhD degree. She will be replaced as soon as possible. The school does, however, extensively involve its student members in planning and organising the activities. Those students who do the lion's share of this work can put it on their CVs, and they also receive a small remuneration.

A clear majority of the candidates think that the organisation of activities is fairly or very good. There are lower scores regarding the PhD candidates' possibilities to cooperate and participate in the design of the activities, which appears to contradict what was said in the previous section. This may, however, be due to the fact that the PhD candidate who was a member of the steering committee until September 2016 was not well known among her colleagues. This is an indication of the importance of making sure that all student members know who their representative/representatives is/are, and that it is easy for them to take contact.

It is not clear from the webpages how the school is managed.

Coordination, facilitation and national network

The partners fulfil their obligations to a very high degree. They basically appear to be very satisfied and mention only a few things that could be improved. One is an economic-administrative issue which should be possible to sort out, and another is the possibility of including all PhD candidates in Norway in the school, which has not yet been accomplished. It is, however, an explicit aim for the next four-year period.

There is a formal *a priori* agreement for common ECTS credits for only one course at the school. The interviews clarified, however, that many more courses are at least preapproved by the institutions. When this is not the case, the student has to apply for approval, which is normally not a problem. Ideally there should be an agreement for common ECTS credits for all of the school's courses that is signed by all of the partner institutions.

Activities

The school has had a basic programme with three courses and an annual symposium in place since 2014. These have been held annually since then, together with a seminar in 2015 and a workshop in 2016. The "more than 13" PhD courses that the school says it has is in reality only five different courses which together have been held 13 times. From the point of view of expansion/change/development of new courses, not much "progress" appears to have been made over the years. However, it is also stated that the past two years have been devoted to strengthening the quality of the activities.

Almost all courses – with the exception of the generic ones – end with exams and written course evaluations. The latter are considered important; there are several cases of lecturers’ making changes in response to critique from the students. Quality is also an important factor in the development of new courses and in choices of who is to be responsible for giving a course.

Unfortunately, only about 10% of the PhD candidates responded to the survey, so the results are of little value. This was partly due to a misunderstanding. The school was under the impression that it was to select about 50 candidates to send the questionnaire to. These candidates were recruited from among those who had recently attended courses and other activities at the school. The PhD candidates who *did* respond to the survey are very satisfied with the activities.

Supervision in the school is in principle decentralised. Four of the 14 respondents did, however, also receive some supervision through the school.

Communication with the PhD candidates is generally good, but there is room for improvement when it comes to the candidates’ possibilities to influence activities and to making the school more “visible”. This indicates that better use should be made of the webpages as a means of communication.

The PhD candidates are very satisfied with the opportunities for networking, and these are considered to be top class.

The PhD candidates seem very satisfied with almost everything, e.g. the course quality and the networking opportunities. One potential improvement mentioned is more courses, but it appears that the present course offering is a very good complement to the partners’ own courses.

Internationalisation

There is extensive research collaboration with top universities in other countries. World-class teachers, including Nobel laureates, attend the annual symposium and interact with the PhD candidates, which is highly appreciated. The school has a travel and exchange programme to support research stays abroad for its PhD students, and it also has PhD students from abroad as members. This programme is not limited to the institutions with which the school has formal agreements on exchange. There is no indication that anyone who wanted to travel has not been able to do so. Applications for travel grants are usually answered the same day they are received.

There are many ongoing collaborations between groups at the member institutions and research groups at universities abroad, which have resulted in a large number of joint publications. The attendance of world-class researchers at the annual symposium has provided the school’s PhD candidates with an opportunity to access and interact with the best researchers in the field.

Since only 10% of the PhD candidates responded to the questionnaire, the result is of limited value. However, the answers given in the questionnaire and in the interviews express great satisfaction with almost everything. The school is considered to be well organised and to function very well; it is exciting and relevant. The candidates have become acquainted with other environments than their own, and the threshold for taking contact with others has been lowered. Everybody should be given the opportunity to attend the school (this is still not the case).

Future perspectives

There is a stated ambition to further develop NORHEART into a cardiac research institution with even broader ambitions when the present support from the Research Council ends. There is potential for and ideas about even further expansion and improvement, possibly by including more clinical research. In this development process, which is fast-paced, it will be important to ensure that

quantity does not take precedence over quality. A continued level of financing of about NOK 3 million per year is expected to be needed; intensive effort will be devoted to raising this until 2021. A substantial part of the necessary funds could possibly be contributed by the partner universities themselves. The shape the future organisation will take is an open question, but the present autonomy has been appreciated because it has helped to ensure quality and efficiency. There is continual focus on how to use available resources to produce optimum quality.

Gender aspects

Fifty-five per cent of the PhD candidates in the school are women.

There has only been one PhD candidate representative, a woman, on the steering committee. She has remained on the committee since completing her PhD in September 2016, but in another role. She has not yet been replaced by a new PhD candidate.

Overall evaluation and recommendations

The initial period of Research Council funding has inspired long-term thinking, and thinking along new lines in Norwegian heart research. The overall impression of NORHEART is that the school functions very well, with good cooperation among the partners, that it is in a good financial position and that the PhD candidates are satisfied with the activities and the opportunities to interact with each other as well as with international students and researchers (with a reservation for the low response rate on the questionnaire). The school constitutes a strong national research and educational network which has provided new opportunities for all concerned, i.e. not only for the PhD candidates but also for their supervisors and the senior researchers. And although the school is spread among many institutions, it has access to all students in the field in Norway.

The evaluation panel has several recommendations for NORHEART:

- Establish a formal agreement between all the partners that guarantees mutual approval of all joint courses (ECTS)
- Clarify, on the webpages and elsewhere, how the school is organised and governed to make it easier for interested parties to know how to approach the school to suggest new courses and activities, etc
- In order to simplify and encourage communication, list (primarily) students on the webpages in alphabetical order or in some other useful order so that they are easy to find
- Encourage PhD candidates to become even more active in the further development and follow-up of the school's activities
- Given the present ambition to not only maintain but to further develop the school and continue the activities when support from the Research Council comes to an end, draw up a concrete plan for the transition, including how to finance it.

6.5 Research School on Peace and Conflict

Facts about the Research School on Peace and Conflict 221901

- Operating period: 2013.01.01–2020.12.31.
- Grant (funding pledge) for the entire period: NOK 21.4 million.
- UiO is the host institution, and there are 2 other partners: PRIO and NTNU.
- The research school admits 10–15 PhD candidates each year. In 2016, members included 27 PhD candidates from Norwegian institutions and 44 PhD candidates from institutions abroad. In addition, 33 non-members participated in activities under the auspices of the school in 2016. Twenty-two PhD candidates have completed their degrees.
- There are 6–8 courses held annually, in addition to other activities such as symposiums, writing and presentation courses, conferences, networking gatherings and a monthly Junior Researcher’s Forum, which is a lunch meeting open to members of the research school and researchers at PRIO.
- The research school has established binding agreements between the partner institutions on mutual approval of the school’s courses.
- The steering group consists of 6 members and all the partner institutions are represented. There is one PhD candidate representative and one observer in the group. There are 3 women in the group: the candidate representative, the observer and the leader of the steering group. The group meets once every semester.

Objectives of Research School on Peace and Conflict (from the contract)

The Research School on Peace and Conflict aims to form a strong network of PhD candidates and supervisors who work on themes related to peace and conflict matters from various research environments in Norway, in a setting which promotes academic excellence as well as international networking and cooperation. The immediate reason for the establishment of this cooperation is the acknowledgment that an increasing number of scholars focusing on peace and conflict themes in Norway work at disparate institutions, which means we are missing a structured, thematically oriented, training network which would secure a broad offer of courses and bring candidates in contact with active research groups. The proposed research school also ensures a secondary objective, namely to keep Norway at the research front on peace and conflict matters.

Achievements

The research school has partially achieved its objective to “form a strong network of PhD candidates and supervisors”. This has been attained through the creation of an international, dynamic and constructive research environment. The school offers a broad portfolio of high-quality courses, including generic courses (on methodology and on writing skills) and more specific, thematic courses. As in most Norwegian research schools funded by the RCN, the involvement of supervisors has been a challenge. Thus, the school has not fully achieved its objective despite attempts to do so. Regardless of this, the research school fills a national and international gap for an interdisciplinary school in peace and conflict studies.

Management and structure

The self-evaluation by the school gives the impression of a well-run research school with a large course portfolio, including two annual symposiums, and good cooperation between its three Norwegian partners (NTNU, UiO and PRIO). The school also has collaboration agreements with the universities of Uppsala and Copenhagen. There are plans to expand collaboration with other departments at UiO and to another university in Norway (UiT).

According to the survey, which had a very high response rate, the PhD candidates are positive about the courses, administration and content. They have the opportunity to experience an international, interdisciplinary and stimulating environment. The webpages are useful, and the PhD courses are announced sufficiently in advance.

Coordination, facilitation and national network

Cooperation appears to be good, and the ECTS guidelines from UiO are also the standard for the other institutions. The partners have a division of labour concerning the PhD courses (though this is not specified), and they cooperate on a summer school held every second year.

In the grant application, the research school states that there was “an expressed interest for concrete collaboration and partnership” with a master’s programme at UiT and Noragric at NMBU. The school also planned to pursue an expansion of the network to the universities in Bergen, Stavanger and Agder, and to investigate potential partners at the university colleges. However, this does not seem to have been pursued thus far and the evaluation panel wonders about the reasons for this, especially since the Norwegian base appears to be rather exclusive and the school does not have the character of a *Norwegian* research school.

Activities

There is a high level of activity with approximately six to eight PhD courses a year, including thematically oriented and generic courses. In addition, there are symposiums twice a year, work-in-progress meetings and *ad hoc* seminars. The PhD courses often have four to ten guest lecturers and are evaluated very positively. In contrast, the work-in-progress meetings where PhD candidates present their own work are negatively evaluated in the questionnaire, partly due to the lack of attendance by senior staff.

There is a quality assessment process in place, managed through surveys of the PhD candidates and dialogue with the responsible courses. The broader courses such as those on civil war and gender and violence are held each year, whereas narrower PhD courses are offered less frequently. At the same time, attention is given to new topics emerging on the research front, e.g. security in the Arctic. PhD candidates would like to have more influence on determining the topics of the PhD courses. This is a problem, as a dynamic research school needs to be attentive both to the needs of the students and to changes in the research agenda. This is something that can be improved, given that the research school itself expresses a desire to see more courses initiated by the PhD candidates themselves. The research school also offers generic courses on presentation and writing skills which are highly valued by the PhD candidates. In addition, the school has organised sessions on supervision at a symposium and has held discussions on supervision and the student-supervisor relationship.

PhD supervision in the school is mostly informal, i.e. takes place during PhD courses and in informal conversations. This is evaluated positively. Most PhD candidates have taken fewer courses than expected and thus have looser ties to the school than envisioned. One-third of the PhD candidates express dissatisfaction with the lack of cooperation between their supervisor at their home institution and their supervisor at the research school. A lack of cooperation is a serious impediment to fulfilling the aims of the research school.

The research school has successfully created an international network of fellow PhD students in various countries and with senior staff. The PhD candidates at the research school are extremely satisfied with the way the school has created a solid academic platform for them with relevant and high-quality PhD courses in a trusting environment.

Internationalisation

The research school recruits half of its course organisers and keynote speakers from its Norwegian partner institutions. This is not a problem, as the research field is highly internationalised, with international scholars working at PRIO. The school has formal collaboration agreements with several institutions abroad, e.g. the University of Copenhagen and Uppsala University, and is looking to collaborate with other universities abroad. Two-thirds of the students who attended PhD courses in Norway were from abroad and were eligible to apply for support to cover travel expenses. There were also grants available for senior staff and PhD students from abroad to conduct a stay at PRIO. In contrast, 48% of the respondents to the student survey did not know whether financial support for stays abroad was available for Norwegian PhD candidates. According to the self-evaluation, the research school does not provide either short or longer-term grants for Norwegian PhD candidates to study abroad. Here there is room for improving the ability of Norwegian PhD candidates to conduct a stay abroad, as there appears to be little money for this at their home departments.

Future perspectives

There is no doubt that this is a highly international research school with an excellent, interdisciplinary research environment. The school's plans for the future are to expand collaboration internally and internationally. In Norway, the school plans to cooperate with the Norwegian Nobel Institute, UiT The Arctic University of Norway, and other departments at the University of Oslo. Internationally the school plans to explore cooperation with the Sant'Anna Institute in Italy, the Global South (Colombia) and the Nordic countries. Grants from the RCN and the EU are also mentioned as future financing options.

However, strategic issues such as the role of the generic courses on presentation and writing skills in an interdisciplinary research school and the changing recruitment of PhD candidates are important to consider. The generic courses are very important for the PhD candidates, but the role of a research school in providing these should be discussed. There may not be many generic courses for PhD candidates at smaller university colleges. PhD candidates coming from larger universities are more likely to have writing courses at their universities. Another challenge in the future will be changes in the recruitment of PhD candidates, as an increasing number of PhD candidates from abroad are taking courses offered by the Research School on Peace and Conflict. In 2013, one-third of the PhD candidates were from abroad and in 2016 the figure was two-thirds. Thus, only one-third of the PhD candidates are from Norway. What role will this play in the plan to seek continued financing?

Gender aspects

There is strong gender imbalance in the steering group, as there is only one woman among the six members – and this happens to be the PhD candidate representative. No data have been provided concerning the gender distribution of keynote speakers and organisers of PhD courses. This is a problem in relation to equality and to the recruitment of future women researchers in the field inspired by female role models, i.e. the keynote speakers.

Financial aspects

The financial aspects are difficult to evaluate, as the evaluation panel was not provided with data on the expenditures in different years, the costs of various courses and the comparative price of various activities, e.g. costs for visiting scholars versus costs for PhD courses in writing and methodology. It is difficult to evaluate whether the use of resources is cost-efficient.

Overall evaluation and recommendations

The Research School on Peace and Conflict is a well-run, highly international research school offering high-quality PhD courses. There is room for improvement with regard to support for Norwegian PhD candidates seeking to conduct a stay abroad, coordination between supervisors and the research school, gender mainstreaming, the number of PhD candidate representatives in the steering group and the strategies for continuation of the research school after 2020.

- The panel urges the research school to consider its financial and practical support of Norwegian PhD candidates who want to study abroad. Here there appears to be an asymmetry between the situation of incoming PhD candidates from abroad and their Norwegian counterparts seeking financial support for stays at research universities abroad
- The panel recommends that the research school investigates problems regarding coordination between the research school and the supervisors at the home institution, and also considers strategies to minimise these problems and ease the (cross) pressure on the PhD candidates
- The panel urges the research school to reflect on the role of keynote speakers and their gender in relation to the future recruitment of women professors in the field
- In line with the general recommendations, the panel also urges the research school to increase the number of PhD candidate representatives in the steering group in order to enhance communication with the PhD candidates, among other things
- The panel recommends that the research school expands its Norwegian base to include more universities and departments, with the aim of becoming a truly interdisciplinary Norwegian research school. The panel also recommends that the school clarifies its strategies in relation to funding after 2020 and whether the school should be Nordic, European or more international in focus. This is particularly pertinent in relation to the changing recruitment of PhD candidates (more members from abroad than Norwegian members), to the core activities of the research school, and to the strategic considerations regarding the choice of international partners and their willingness to contribute not only PhD candidates, but also financial support or in-kind contributions in the form of teaching PhD courses in the future

6.6 Norwegian Graduate Researcher School in Linguistics and Philology (LingPhil)

Facts about LingPhil 221904

- Operating period: 2013.01.01–2020.12.31.
- Grant (funding pledge) for the entire period: NOK 23.69 million.
- NTNU is the host institution, and there are 5 other partners: UiB, UiT, UiA, UiO and NHH.
- Membership of the school and participation in courses is voluntary.
- There were 123 PhD candidates registered at the school in 2016, and 35 candidates completed their PhD degrees in the period 2013–2016.
- In 2016, LingPhil offered 9 PhD courses, a PhD conference, a summer school and 6 master classes.
- LingPhil has established binding agreements between the partner institutions on mutual approval of the research school's courses.
- The governing board is comprised of 12 members. All the partner institutions are represented on the board, which also includes 3 PhD candidate representatives and 2 external members. Eight of the board members are women. The governing board meets twice a year.

Objectives of LingPhil (from the contract)

1. Ensure cooperation among the participating institutions so that they complement and strengthen each other in the training of doctoral candidates.
2. Ensure predictable and sustainable course offerings adapted to candidates' needs.
3. Ensure a holistic career training design, encompassing the initial stages to the final completion stage (the defence).
4. Create national and international meeting places for PhD candidates.
5. Ensure international participation and high standard in the training component of PhD programmes beyond what can be handled locally.
6. Increase recruitment to linguistic research, especially from professional programmes (teacher training programmes).
7. Strengthen and develop the quality of supervision in researcher training.
8. Strengthen national cooperation and best practice exchange in supervision.
9. Ensure an up-to-date training component providing a link between subject field and professional/labour market by offering generic and transferable skills training.

Achievements

LingPhil has achieved its stated objectives for the most part. The research school clearly provides added value in relation to the study programmes offered at the participating institutions. The courses function smoothly, and the activities of the research school are perceived as relevant by a majority of the PhD candidates. The candidates have the opportunity to establish contacts with other PhD

students and researchers outside their own institution, including international contacts. Career guidance at the school focuses on developing generic skills, and supervisors have the opportunity to develop their supervisory skills in dedicated seminars.

Management and structure

The research school is led by a governing board comprised of 12 members, including two external members and three PhD candidate representatives from the partner institutions. The governing board meets twice a year, and meetings are hosted by the partner institutions on a rotating basis.

In the interviews with the PhD candidate representatives it was apparent that they view themselves as representing the students from their own institution rather than the research school's PhD candidate population as a whole. An important task in the years ahead will be to clarify the role of the PhD candidate representatives on the governing board.

The number of PhD candidates has grown considerably since the start, and there are now 123. The participating institutions are required to enrol PhD students in the school. Master's students also participate in a number of the school's activities, in an effort to create a better transition to researcher training. The school offers a relatively comprehensive course programme and organises a range of other activities, including a summer school, master classes and seminars.

The administrative tasks relating to the research school are carried out at the host institution, NTNU, and the administration is led by a coordinator. There are also contact persons at the individual partner institutions, but in the view of the evaluation panel, there is a need to improve contact with these institutions.

Although the research school has its own webpages, the information about both the organisation and the activities is inadequate. There was no information about or contact details for the members of the governing board of the research school or for the PhD candidate representatives. The name of and contact details for the administrative coordinator were not provided either. The information on several of the partner institutions' webpages is inadequate as well. There is only limited information about the school's activities. The PhD candidates would like to see better planning and information regarding courses and other activities. The governing board is working to rectify this by simplifying the procedure for board approval of courses, among other things.

Coordination, facilitation and national network

The school's activities are planned at meetings of the governing board, which includes representatives of all the partner institutions. All of the institutions have a hand in organising the activities, although to a somewhat varying degree. PhD candidates from the various universities take part in courses and other activities, although it is not clear how evenly these activities are distributed among the institutions. Senior researchers from the partner institutions also participate, although the number of researchers has dropped from 21 in 2015 to 12 in 2016.

Participation among the PhD candidates appears to differ from institution to institution, which some of the candidates view as negative. This is due in part to the fact that a number of the candidates are affiliated with the MultiLing network, whose activities overlap somewhat with the activities of the research school. The research school is aware of this and is working to achieve a better distribution of activities between the school and the MultiLing network.

According to the self-evaluation, an agreement on mutual approval of the research school's courses is in place between the partner institutions. However, at least two of the institutions say that there is no such agreement and one does not know whether one exists, which suggests that this matter

needs to be clarified within the school and all of the partners must have access to the necessary information.

The supervisors regularly receive information from the research school, but the school would like to see greater involvement on the part of the supervisors.

Activities

The research school has held a large number of courses, most of them in the past two years (eight in 2015 and nine in 2016). The majority have been organised by the host institution, but all of the partner institutions have served as co-organisers at least once. The number of participating PhD candidates is relatively large, although it would be desirable to see a greater number of international PhD candidates.

The courses and other activities are evaluated on a regular basis. The PhD candidates are highly satisfied with the courses overall, and particularly with the summer school and master classes. Most of the candidates consider the activities to be highly relevant to their educations. However, some candidates (it is unclear how many) question the relevance of the activities for their research field, which for the most part has to do with the focus of the school. The school's management is aware of this and will seek to design courses that are more targeted towards the candidates' needs.

The research school has held a very popular course on communication and career planning, which is planned to be held annually. There has been good experience with inviting alumni – candidates who have already defended their doctoral dissertation – to discuss future career opportunities in relation to the school's research focus. The PhD candidates also point out that the research school is a forum where generic skills, such as giving research presentations and organising conferences, can be developed without the need for a dedicated course.

The majority of the PhD candidates have supervisors at their home institutions who are not involved in the school's activities to any great extent. The candidates emphasise the importance of the more indirect guidance they receive within the framework of the research school in the form of comments and feedback from internationally recognised researchers. The master classes are considered particularly successful and are often attended by supervisors from the local institutions. Although there is no major conflict between the supervisors and the research school, there is a certain gap that the school is attempting to bridge. Steps are being taken to encourage the supervisors to take greater initiative in relation to courses and seminars for further developing supervisory skills. The school has organised activities targeted towards supervisors, included a seminar on supervision of dissertations, which was very popular and attracted some 20 supervisors.

Internationalisation

The research school works actively to promote internationalisation. Two members of the governing board are from outside Norway (York, UK, and Utrecht, Netherlands), and several senior researchers and PhD candidates from other countries take part in the school's activities. A number of the research school's PhD candidates have conducted research stays abroad, and it is positive to note that these stays have become longer in recent years. However, only three PhD candidates are planning a research stay abroad in 2017.

Overall, the PhD candidates are very positive to the international researchers who participate in the various activities. Several conferences have had an international focus, primarily within an Anglo-Saxon context.

Future perspectives

The research school builds on a network that was active before the school was formally established. The hope is that this network will remain active after the school comes to a close. There will, however, be a need for funding for organising joint courses, for example. This will hopefully be obtained in the form of contributions from the respective institutions. There may also be opportunities for collaboration with the MultiLing network. There are no specific plans beyond this, and the research school is encouraged to address the situation well in advance of the end of the period of operation.

Gender aspects

There is a clear predominance of women at the school. This is not a topic of discussion in the governing board or otherwise at the school, and there appear to be no thoughts on how to address this issue. It should be noted that gender perspectives have been incorporated into a number of research projects at the school.

Overall evaluation and recommendations

In general, the research school is characterised by dynamic activity and should absolutely continue to receive funding. The school offers a variety of activities to a large number of PhD candidates. The overall impression is that the research school clearly provides added value in relation to the study programmes offered at the respective institutions and serves a vital function in further developing the research field. The PhD candidates at the school receive qualified training in theory and methodology and have the chance to make contact with senior researchers and PhD candidates outside their own institution, both nationally and internationally.

The career planning activities offered by the school are popular. These include both formally organised activities and informal activities that are the result of being a PhD candidate affiliated with a research school. Inviting alumni to discuss future career opportunities has been very successful, and the school is encouraged to continue this.

There are a number of potential areas of improvement:

- The information on the school's main webpages must be reviewed. Names and contact information for the members of the governing board, including the PhD candidate representatives, should be provided. The name of and contact information for the administrative coordinator should also be provided. Information about the school's activities should be available well in advance of when they are scheduled. The information on several of the partner institutions' webpages should be expanded and made more accessible
- The role of the PhD candidate representatives on the governing board should be clarified and information about this should then be disseminated to the entire PhD candidate population
- The governing board is encouraged to collate information about the participation of the PhD candidates from the various partner institutions. Clear strategies should be drawn up to increase the involvement of supervisors and other researchers at the institutions in the school's activities
- An important issue that should be addressed is the overarching scientific focus of the research school, given that there is some discord between differing views and a risk of decreased participation because certain PhD candidates perceive the school to be less relevant to their own research. It is important to determine how to address this. Perhaps there is creative potential in the differing views and ways to handle these constructively.

Alternatively, the school should communicate its focus more clearly to avoid creating unrealistic expectations

- International contact is good, but routines should be established to help international PhD candidates to apply for funding to participate in the school's activities
- The procedure for approval of courses should be clarified, and clear information about this should be provided to the members of the school

6.7 International Research School in Applied Ecology (IRSAE)

Facts about IRSAE 222699

- Operating period: 2013.01.01–2020.12.31.
- Grant (funding pledge) for the entire period: NOK 23.2 million.
- HiHm is the host institution, and there are 14 other partners: 4 partners from different departments of the Swedish University of Agricultural Science (SLU), Norwegian Institute for Nature Research (NINA), Karlstad University Service Research Centre, Aarhus University, NMBU, Norwegian Institute for Agricultural and Environmental Research (Bioforsk) (now part of the Norwegian Institute of Bioeconomy Research (NIBIO)), HSN, Fondazione Edmund Mach Research and Innovation Centre, Nord University, Agricultural University of Iceland and UiT.
- Most of the partners offer their PhD candidates membership of the network.
- There were 74 PhD candidates registered in 2013, 81 in 2016, and 115 in 2017. Roughly half of these are international students. Seven candidates have successfully defended their doctoral dissertation.
- Fourteen PhD courses will be offered throughout the entire period, and 4–6 courses are offered on an annual basis. In addition, the school offers mobility grants to cover travel costs, partner visits and some networking.
- PhD candidates must apply to their home institution for approval of ECTS credits from IRSAE. Approval practice differs among the institutions.
- The steering board consists of 8 members, of which 2 are PhD candidate representatives. Four of the board members are external representatives and 2 are women. The research school is planning to reorganise the board in 2017.

Objectives of IRSAE (from the contract)

IRSAE will advance the quality of PhD education within various research fields coupled to Applied Ecology, thereby producing responsible future scientists and managers that can progress the present-day front in applied ecology further. In addition, IRSAE, will facilitate and improve recruitment of PhD candidates, and make the research education more effective through collaboration between institutions with similar research profiles.

IRSAE attempts to achieve its mission by:

- 1) establishing a national and international interactive network of contacts and collaboration among PhD students, supervisors, researchers and managers;
- 2) supplying PhD students with ecological theory and enabling them to employ this theory in tackling applied research and management issues;
- 3) the exchange and facilitation of information between parties involved regarding the availability of existing PhD courses, seminars, research funding, career opportunities, etc., and to create new PhD courses, and PhD meetings.

Achievements

The research school appears to have achieved its objectives by creating a strong international network of partners, presently 15, of which seven are domestic, that the PhD candidates can take advantage of. (One of the original international partners, Åbo Akademi University, left IRSAE on its own initiative.)

The PhD candidates can take advantage of a series of high-quality courses in the field that were previously lacking. The summer schools in particular have been very popular (although none was held in 2016).

Management and structure

In the early days of IRSAE, all partners were represented on the school's steering board, but this was seen as being too complex an organisation. The steering board is therefore now comprised of six senior members and two PhD candidate representatives. It adheres to a consensus-based decision-making process and is responsible for the strategic development of IRSAE, the budget and applications from new member institutions.

The research school is managed by a secretariat with three members: the programme director, an associate professor and a scientific secretary. The secretariat did not become fully operational until recently, however, which has most likely contributed to some of the problems that the school has encountered. The present administrators appear to be very committed, which is mentioned by the school as a strength.

It is worth noting that four of the six senior members of the steering board represent international institutions. Since the Norwegian researchers do not appear to be particularly keen on conducting a stay abroad, it is necessary to bring the world to Norway instead. The conviction that it is important to ensure that the activities are firmly rooted in an international context is a decidedly positive one.

The PhD candidates' response rate was 27%, very likely due to the fact that the enquiry emails in many cases were caught by spam filters, and also because it was apparently not entirely clear that the sender was the Research Council of Norway. It is therefore difficult to gauge how representative the answers are. The vast majority of those who answered are, however, very satisfied with the thematic and generic courses and the summer school and find that these support their work and studies.

It is difficult to find individual PhD candidates on the roster on the school's webpages since they do not appear in alphabetical order. There is no discernible order at all. The PhD candidates interviewed do not know how their representatives on the board are elected. The webpages as well as social media are mentioned by the school itself as possible areas for improvement. The school has two to three PhD candidate members from each partner institution.

Coordination, facilitation and national network

According to the self-evaluation and the interview, the degree of activity among the partners has varied. There is now a plan to reinvigorate the school by moving towards a workgroup-based structure consisting of five applied ecology themes:

- Movement ecology;
- Sustainability and society;
- Freshwater ecology;
- Conservation conflicts;
- Natural research management under climate change.

It is expected that this will make it easier for a partner to identify a topic relevant to its own subject area at the home institution. This will encourage partner engagement in and responsibility for the topic, which will in turn both generate and encourage increased activity. The school will also allocate funds to the various themes.

Eight out of 15 responded to the partner survey. Overall, the partner institutions seem to be very satisfied with the courses and other activities, although several report a significant overlap with their own courses.

There is no agreement on mutual approval of joint courses (ECTS credits). Instead the school asks each course organiser to suggest an ample number of credits for the course, but it is the student's home institution that ultimately decides how many credits he/she will be awarded. An obvious consequence of this is that two students who take the same course may earn a different number of credits for it. IRSAE is pessimistic about the potential to reach an agreement between the partners on this issue. The PhD candidates who were interviewed did not see any of this as a problem for themselves, but they understand that it could be for others.

The management of IRSAE conveys a picture of a group of partners with different academic cultures, which is of course challenging when trying to create joint activities. This disparate view on some things is reflected in e.g. the inability to agree on the mutual approval of course credits. The steering board and the PhD supervisors also have divergent views when it comes to transferable skills. The former sees them as an important part of the (new) course programme, while the latter think that the course time available should be devoted to other topics. So it is unclear whether the school will continue to offer courses on transferable skills.

The long distances between partners necessitates the use of telephone and email for communication. Physical meetings are rare.

The continuous changes in the PhD education resulting from political decisions are mentioned as a threat.

Activities

The school holds two to six courses a year, apparently mainly to complement the partners' own courses (although there is quite an overlap). There was no summer school in 2016 due to the reorganisation of the school and a lack of administrative resources to market it.

The courses are very popular, although it is difficult to engage lecturers to teach them, as many have time constraints. According to the management, some of the most successful courses have been the transferable skills courses in writing and communication.

The school provides local supervision in the form of advice as needed. Only two of the responding PhD candidates report that they have been supervised through the school. Two do not know if they have(!).

The above-mentioned reorganisation has led to a shift from supervisor/student relationships to research groups made up of several students and supervisors. Due to the lack of time on their part, it has been difficult to engage the supervisors in school activities such as the summer schools, which was previously an ambition. Only a few participate. The management of the school does not, however, regard this as a big problem for the PhD candidates.

The communication and dialogue with the PhD candidates could be better, although the school now works more directly with the PhD candidates at the partner institutions rather than with the seniors there. It is reported that the candidates reply to emails much more quickly and are more involved. The school's webpages are seen as satisfactory, but could be used to market courses better. It appears that some PhD candidates in the field are still unaware of the school's existence. All PhD candidates who are active within relevant themes are, however, welcome to join the school, without exception or restrictions.

Much of the school's activity is said to be devoted to promoting the careers of candidates who have completed their PhD degrees. It is also said that more should be done for Master's students and post-doctoral fellows.

The school's PhD candidates are dispersed throughout Norway, the Nordic countries and the rest of Europe in small research environments, and they are very satisfied with the networking possibilities offered by the school. The management hopes that the new structure of the school featuring working groups under different themes will further strengthen these opportunities, extend them to more students and bring the students even closer together, culminating in a joint meeting at the summer school. Every PhD candidate should be associated with a theme.

The PhD candidates are generally satisfied and feel that they benefit from the school's activities and that they can influence them. One candidate mentions that students are not specifically invited to join in designing or organising events, but that there are possibilities for doing so for those who are interested. PhD candidates can apply for funding to organise their own conference or course. Special appreciation has been expressed for:

- The opportunities to meet and network with international students who share the same interests, as well as with students in related fields.
- The mobility grants, which make it possible to take courses abroad.
- The summer schools, which feature useful courses and good, international teachers who have time for discussion with students. This is of particular importance to those students who work in small environments at their home universities.

Due to changes in the secretariat the activity level at the school fell in 2016, when there were fewer courses and no summer school. The level of activity is expected to return to normal in 2017. Possible new activities for the school include:

- Courses on writing research grant proposals (Marie Curie, Erasmus+ etc.);
- Courses on transferable skills – if there will be any joint courses of this type – in terms of increasing supervision competence, communication and writing skills;
- Mentorship (the PhD candidates would like to have mentors who are not traditional supervisors);
- A forum for PhD education, society and policy.

Internationalisation

The school has had some guest lecturers and there have been two research stays abroad. Travel grants are available for international PhD candidates as well as the school's own PhD candidates. According to the self-evaluation, all of the PhD candidates from abroad are members. According to the responses to the questionnaire, 50% of the PhD candidates do not consider themselves to be members and only participate in some courses and seminars. Some clarification is clearly needed regarding what constitutes a membership.

The degree to which supervisors encourage their PhD candidates to go abroad varies among the supervisors. Some candidates have problems taking advantage of the opportunities due to family reasons.

Internationalisation activities are incorporated into IRSAE at several levels: increased collaboration between partners on PhD courses, summer schools and mobility of PhD candidates. Approximately 50% of the PhD students come from outside Norway. In the self-evaluation, IRSAE considers the most successful internationalisation activities to be support for mobility of PhD candidates and the summer schools. There was, however, no summer school in 2016, which, together with the widely varying levels of contact with the PhD candidates at the partner institutions, is likely to have contributed to the drop in the number of mobility grants this year.

According to the self-evaluation, the internationalisation efforts have contributed significantly to achieving the objectives of the school.

There is an international mix of PhD candidates at the school, and they are satisfied with the school's activities as well as with the support that they have received to be able to take part in activities abroad.

Future perspectives

It is unclear how the school plans to continue operations in the future after the period of funding from the Research Council has ended.

Gender aspects

One-half of the PhD candidates at the school are women, as are two of the six senior members of the steering board. No data are available on gender distribution among the keynote speakers at PhD courses and summer schools.

Overall evaluation and recommendations

IRSAE is a successful graduate school which has connected PhD candidates across Norway and Europe and created an improved course portfolio for both national and international PhD candidates.

There is a willingness at the school to try new actions if something is not working according to plan. The management should address the following weaknesses:

- The overlap between IRSAE courses and local courses at the partner institutions must be reduced, which will require better communication among the partners
- An improved communication strategy on upcoming PhD courses is needed
- Like at other national graduate-level research schools, the challenge of mutual approval of courses (ECTS credits) must be dealt with

- The issue of transferable skills must be dealt with, as it is a real problem since there are so many small partners in the school and it is difficult for all of them to run such courses on their own, but there is no common view on how to solve this

The school should consider the composition of the steering board in relation to its future plans. Here important issues are whether the new strategy basing PhD education on research themes will be successful and whether IRSAE wants to continue after 2020 as primarily a Norwegian, a Nordic or a European researcher training network.

6.8 Research School of Computer and Information Security (COINS)

Facts about COINS 222703

- Operating period: 2013.01.01–2020.12.31.
- Grant (funding pledge) for the entire period: NOK 12.8 million.
- NTNU (previously the University College of Gjøvik) is the host institution, and there are 6 other partners: NTNU (Trondheim), UiB, UiT, UiS, UiA and UiO.
- All the PhD candidates in information security at the partner institutions are members of the school. 80% of the PhD candidates in information security are recruited internationally. There were 65 members in 2016. Eight PhD candidates have completed their degrees.
- A winter school, a summer school, 6 PhD courses and student seminars are held annually.
- COINS has not established binding agreements between the partner institutions for mutual approval of the research school's courses.
- The steering committee consists of 10 members and all the partner institutions are represented. Two committee members are PhD candidate representatives, and one is a woman. COINS also has an academic advisory board consisting of 5 members.

Objectives of COINS (from the contract)

COINS has the following specific goals and (measurable) objectives:

1. Integration of several research groups into a larger cooperation:

- Extended course portfolio for all partners in the school;
- Stronger relations between PhD students;
- Increased PhD student mobility by access to a broader network.

2. Better educated PhD students:

- Access to a broader pool of competent thesis advisors;
- Improved supervision by exchange of information security teaching experience;
- Creation of academic and industry contact networks for early-stage researchers.

3. More efficient PhD education:

- Better course delivery for all partners in the school;
- Expected completion (almost) in normalised time with a low dropout rate.

4. International visibility and recruitment:

- High quality applicants from Norway and abroad.

Achievements

There are currently some 65 PhD candidates enrolled at COINS. The school organises lectures, courses, winter/summer schools and an annual joint seminar at which students present their projects. Six courses of relevance for completing a PhD degree have been held. Courses appear to be of high quality and have good critical mass; thus the school avoids running courses with few participants.

The ambition of establishing a regular annual meeting place in connection with the winter school in Finse appears to have been successful.

There is a list of ongoing research projects headed by members as well as job announcements on the COINS webpages.

COINS has been able to attract the expected number of students. Networking appears to be effective and successful. There are many supervisors associated with the school (in fact about one per student), but there appear to be some problems with involving them.

Management and structure

The school has an academic advisory board with three external members (from Denmark, Sweden, and the US, respectively). The internal steering committee consists of 10 members, including two PhD candidate representatives (one of each gender).

The steering committee meets twice a year in connection with school activities and meetings. The board appears to function well.

The role of the supervisor community in the dialogue with the management and the steering committee is not specified. The research school is experiencing problems involving the supervisors.

About 55% of the PhD candidates consider themselves full members of COINS, while 39 % have only participated in some activities. However, the overall response rate is low (only 18 of 65 candidates responded to the questionnaire).

Coordination, facilitation and national network

COINS states that the partners fulfil their obligations to a significant degree, although there are cases where potential students are not proposed for enrolment and where relevant student-related issues are not raised with the research school.

There is a stated desire to improve the participation of the supervisors in COINS' activities. The winter school does, however, attract (some) supervisors.

It is mentioned in the self-evaluation that no formal agreements regarding ECTS credits have been established, although formal course and curriculum descriptions have been created. There appears to be an issue involving one partner institution that some courses have not been assigned credits due to a limitation on the number of credits that can be acquired at other institutions. This should clearly be solved; otherwise it invalidates the concept of a national graduate-level research school.

The partners generally express satisfaction with the school and highlight the advantage of financing for internationalisation activities.

In general, the school is considered to have raised the level of PhD education and network-building. However, the partners disagree somewhat when asked to describe the impact of the research school on local activities. One partner asserts that the school's activities have only had a minimal impact on

local activities, and one partner asserts the same to a lesser extent. Only one partner expresses that the school's activities have had a major (positive) influence on local activities.

Activities

COINS appears to have been successful in attracting students, including students from "niche" areas. Most students have been recruited via supervisors, active members, etc. It is stated that 80% of the students in information security are recruited from outside Norway.

Supervisors are located at the main institutions running the individual doctoral programmes. If there is a second supervisor, that supervisor is usually from the same university. There has been a 30–50% increase in the number of students with multiple supervisors.

Contact with other (external) supervisors is not formalised. The number of external supervisors has increased (from three to six). This is an area that could be strengthened.

Courses for supervisors have been discussed, but have not been implemented yet.

Eighteen PhD candidates responded to the questionnaire send out by the RCN. The response rate is very low in relation to the population of 65 candidates, and there is room for improvement here.

Only two candidates out of the 18 respondents seem to have received formal supervision via the school and have thus answered that part of the questionnaire.

The spirit of community between the PhD candidates appears to be good. PhD candidates express satisfaction with the number, content and quality of the PhD courses and winter and summer schools offered.

Overall, the students are highly satisfied with the activities.

Internationalisation

The school provides financial support to cover travel expenses in connection with conferences, expenses for international students participating in school activities and travel expenses for guest lecturers. Cooperation with the Swedish SWITS network has been established and has led to exchanges.

Students do not appear to be eager to take advantage of shorter stays abroad financed via the school. The school's self-evaluation mentions that there is room for improvement here. However, 80% of the PhD candidates are recruited from abroad so internationalisation on the recruitment side is clearly not a problem. The school should consider why it does not incorporate international students into its internationalisation efforts.

Cooperation at the Nordic level appears to be functioning well. The evaluation panel was supplied with a list of joint activities and exchanges.

There has been extensive networking at the summer and winter schools. Students who travel summarise their experiences for other students (debriefing).

The ways in which internationalisation has increased have not, however, been specified so it is difficult to evaluate this in detail.

Students express that the student cohort is an international mix. International lecturers contribute to supervision to a "fairly large extent".

In general, students express high satisfaction with the internationalisation initiatives, although it is mentioned that there are limited possibilities for longer stays abroad (in fact none appear to have been conducted).

Future perspectives

The research school has various ideas for continuation after funding from the Research Council ends. These include reduction of the course portfolio, reduction of expenses, a course fee, increased Nordic cooperation and contributions from private companies. There is an expectation that activities will continue within the network, which also has experience from previous networks (NSISnet and FRISC) and that cooperation with the SWITS network will continue as well.

It is mentioned that the cost of inviting guest lecturers is an issue. A reduction in the number of lecturers and/or the introduction of participation fees has been contemplated as a way of sustaining the main body of activities. Industry has been contacted with an eye to sponsorship, but it is difficult to maintain a sustained programme based on such sponsorship.

The central coordination and collection of statistics could be taken over by one of the universities.

Gender aspects

The steering committee consists of five members (three women and two men).

It is difficult to evaluate the gender mainstreaming efforts at the level of keynote speakers. It is recognised that recruitment of women professors in the field of information security is difficult, so the names and gender of the keynote speakers should be recorded.

Overall evaluation and recommendations

The school appears to have successfully achieved its primary objectives, i.e. promoting networking nationally and internationally, providing general courses not available at the individual institutions and assembling a sizeable number of PhD candidates at winter and summer schools. The school has a strong international profile, with a clear majority of the PhD candidates recruited from abroad.

- The evaluation panel recommends that formal agreements are drawn up with partner institutions and used as a basis for regulating the relationships and mutual competencies of the school and the partners. The partners should clearly specify their mutual commitments. The panel notes that it is unsatisfactory if students are not credited with ECTS credits for courses taken at the school. This should be discussed with the partner institutions. It is disturbing that only one of the partners expresses that the school has helped to expand the local network. This is inconsistent with the expressed satisfaction with the financial support available for internationalisation activities
- The response of the PhD candidates to the questionnaire is unsatisfactorily low, which is a pity since their input is important. The panel strongly recommends that efforts are made to ensure adequate feedback from the students
- Effort should be made to develop the present ideas for continuation of the school into a specific plan for continued activities after funding from the Research Council has ended

6.9 National Research School in Population-based Epidemiology (EPINOR)

Facts about EPINOR 222706

- Operating period: 2013.01.01–2020.12.31.
- Grant (funding pledge) for the entire period: NOK 23.8 million.
- UiT is the host institution, and there are 7 other partners: UiO, UiB, Norwegian Institute of Public Health, National Institute of Occupational Health, NTNU, UiS and the Cancer Registry of Norway.
- All PhD candidates with epidemiology-related projects have been admitted to EPINOR.
- Between 24 and 59 new PhD candidates are admitted as members annually. There were 148 registered PhD candidates in 2016.
- The research school holds an annual meeting and an annual summer school, in addition to gatherings at the individual universities.
- EPINOR has not established binding agreements between the partner institutions on mutual approval of the research school's courses.
- The steering committee consists of 10 members and all the partner institutions are represented. There are 2 women members and 2 PhD candidate representatives on the steering committee.
The research school also has an international advisory board comprised of 6 members.

Objectives of EPINOR (from the contract)

The main objective of the research school is to improve the quality and capacity of the Norwegian PhD education in epidemiological theory, methodology, and implementation of new statistical methods.

The national research school will:

- i) integrate epidemiology students nationally and internationally;
- ii) enable easier access to research networks and higher quality supervision;
- iii) increase throughput of students;
- iv) strengthen national and international scientific relations; and finally
- v) improve the quality of population based epidemiological research.

This will ensure future national competence and our position in the international research communities.

Achievements

EPINOR is a continuation of a previous research school within epidemiology based at UiT. EPINOR has succeeded in enrolling many PhD candidates. Although it is an objective to enrol students from abroad, the number of PhD candidates from institutions outside Norway is low. The PhD candidates have easy access to available courses within the field of epidemiology, and they rate this very highly. EPINOR offers an annual meeting and an annual summer school, which are highly valuable for the PhD candidates. EPINOR is praised for facilitating networking activities and creating new contacts nationally as well as internationally.

The evaluation panel acknowledges that it is difficult to fulfil the objective of increasing the quality of supervision. This is due to a low level of involvement on the part of the supervisors. However, this is a general problem, and not unique to EPINOR. The research school addresses the issue by holding a supervisor course targeting young scientists.

The main objective of the research school – which is stressed several times in the self-evaluation – is to enhance the quality of PhD education within epidemiology. However, no evidence of the impact of the research school on the quality of the PhD education was provided to the panel. The panel acknowledges that it is difficult to measure quality in researcher training. Quality assessment may be targeted towards several components of the researcher training programme: 1) recruitment to the research school (at present neither the PhD candidate nor the PhD project are evaluated upon enrolment in EPINOR); 2) the offered inputs, e.g. courses, summer school, annual meetings; 3) research output (publications and dissertations); and 4) employment after degree completion. It may be too early to evaluate these indicators, as the research school is only halfway through its period of operation. However, EPINOR should identify and formulate relevant parameters or indicators for future monitoring.

Management and structure

The management and organisation of the research school appears to be professional and functioning smoothly. The organisation is located at UiT and a number of activities are concentrated there. The main task is to establish an overview of available relevant courses and organise new relevant courses within epidemiology, summer schools and annual meetings. The PhD candidates are very satisfied with these activities. There are two PhD candidate representatives on the board, and two more will join in to order to involve PhD candidates from more partner institutions.

Coordination, facilitation and national network

It is obvious that UiT is a central hub for the school's activities. Efforts to strengthen EPINOR at the national level have recently resulted in initiatives to improve and facilitate the involvement of and input from the partner universities and to encourage local activities at partner institutions. The partner institutions are satisfied with the established overview of all relevant courses, the networking opportunities for PhD candidates (in the form of courses, summer schools, annual meetings) and the financial support for course attendance or shorter stays abroad. However, potential added value relating to the affiliated supervisors, e.g. increased research collaboration within the research school, appears to be minor.

Importantly, with the exception of one institution, there is almost no overlap between course activities among the partner institutions. Among the partner universities, there is a need for clear communication about ECTS and an agreement on approval of ECTS credits, which appears to exist. A majority of the PhD candidates who responded to the survey (50% of the affiliated PhD candidates) regard the solutions relating to organisation and practicalities as being fairly good to very good. However, 25% of the candidates responded "do not know", which reflects the observation that approximately 25% of the respondents do not have contact with the research school. EPINOR is also concerned about the lack of full involvement.

Activities

The main effort is to establish the online platform of relevant courses. EPINOR has contributed with one new course in scientific writing. The students are pleased with the financial support for attending national as well as international courses. The PhD candidates are very, very satisfied with the opportunities for peer networking. The network gives the students an academic platform for their research. It is also possible to network with the lecturers from abroad (senior PhD candidates). In general, the activities offered are rated from fairly good to very good.

It is difficult for the PhD candidates to see how the activities will promote their future career and some do not have any thoughts on this matter. The PhD candidates do acknowledge, to a certain

degree, the impact of the research school on the quality of their research and on degree progression and completion, although this could be improved. This is in line with comments in the self-evaluation.

The PhD candidates do not consider their supervisor to be part of the research school, but rather part of their home institution. This is an obstacle to fully exploiting the benefits and synergy of the researcher training both for PhD students and for researchers.

Only one partner institution claims that research activities have increased to a large extent under the research school.

Internationalisation

There are some contributions to the summer school and annual meetings from abroad. EPINOR offers support for shorter research stays abroad. The research school's PhD candidates travel abroad (10 to 12 have applied for funding) and the school enrolls PhD candidates from abroad. More detailed data, e.g. about length of stay and number of incoming PhD candidates would be beneficial.

The PhD candidates clearly express that there is an international environment at the research school in terms of supervisors from abroad, working language and population. There is satisfaction with the support for participation in courses away from the host institution and for shorter stays abroad.

Future perspectives

There is no doubt that EPINOR has a strong research programme and the ambition, interest and willingness to continue and even further develop the research school. EPINOR has identified several weak points to be targeted in the future. EPINOR aims to develop new, highly valued and relevant methodological courses, to enhance its international profile, and to reach out to and attract all relevant PhD students. Furthermore, the school plans to reach out to young supervisors by offering attractive courses and events. Finally, the steering committee has the ambition and the willingness to increase the partner universities' ownership and involvement.

The suggestions for continued financing beyond the period of Research Council funding include applying for funding for an Innovative Training Network (one of the Marie Skłodowska-Curie Actions under the EU framework programme). However, financial planning needs to be more concrete.

Gender aspects

There is an even gender balance on the international advisory board. There are more men than women on the steering committee, and more women than men among the PhD candidate population. An issue that has not been addressed is the gender ratio of supervisors and keynote speakers, which is important as they serve as role models for the PhD candidates.

Overall evaluation and recommendations

The strengths of EPINOR are that the research school enrolls many PhD candidates in the field of epidemiology, provides easy access to available PhD courses in the field of epidemiology and holds valuable annual meetings and summer schools. EPINOR is praised for facilitating networking activities and creating new contacts nationally as well as internationally. EPINOR has fulfilled its obligations, although there still is room for improvement. Therefore, the evaluation panel has the following recommendations:

- Partner institutions must participate in decision-making to a greater extent and take "ownership" of the research school. This is a two-way interaction between UiT and the partner universities. The school is therefore highly encouraged to pursue the idea that UiT committee members visit partner universities to promote increased involvement and ownership among the partners

- All partner institutions should work together to develop new courses and/or workshops; this will be a platform for facilitating involvement in the research school
- Internationalisation activities should be strengthened, e.g. more of the school's PhD candidates should conduct a stay abroad and more international PhD candidates should conduct a shorter or longer stay in Norway
- EPINOR should develop new, strong methodological courses
- Given that EPINOR seeks to increase the quality of PhD education, potential indicators for quality should be discussed, identified and communicated

6.10 Norwegian Research School of Neuroscience (NRSN)

Facts about NRSN 222712

- Operating period: 2013.03.01–2021.02.28.
- Grant (funding pledge) for the entire period: NOK 23.8 million.
- NTNU is the host institution, and there are 3 other partners: UiB, UiO and NMBU.
- Voluntary membership and participation.
- Between 39 and 89 PhD candidates are admitted each year. There were 197 registered members in 2016. Thirty PhD candidates have successfully defended their dissertation.
- Three to four PhD courses are held each year. Four PhD courses were held in 2016. A PhD conference and a writing course were held in 2016 as well. The research school has previously organised workshops for students and for supervisors.
- NRSN has established binding agreements between the partner institutions on mutual approval of the research school's courses.
- The board consists of 11 members, and all the partner institutions are represented. There are 4 women on the board, 2 of whom are PhD candidates.

Objectives of NRSN (from the contract)

The primary objective of NRSN is to organise and secure a broad, diverse, and nationally coordinated neuroscience training programme for PhD students that will be internationally competitive.

The secondary objectives are:

- To develop additional training opportunities to complement existing programmes/courses;
- To secure a coherent and harmonised national PhD training in neuroscience;
- To facilitate the organisation of an annual intense summer school;
- To stimulate and facilitate international training experiences through existing or yet to be established international networks;
- To establish an annual meeting organised by and for neuroscience PhD students, providing a platform for interdisciplinary exchange and a meeting point between different disciplines in basic, translational, and applied neuroscience;
- To facilitate training opportunities in applied neuroscience, exchange with and experience in commercial research activities;
- To provide tailored education and training in writing, and presenting.

Achievements

NRSN has succeeded in achieving its stipulated objectives, and evaluating these objectives is a relatively straight-forward task.

The research school has achieved its objective on training by establishing a national network for PhD candidates within neuroscience, and offering a platform comprising relevant PhD courses, an annual

PhD conference organised by and for PhD candidates, and summer schools. Furthermore, NRSN has established a scientific writing course and a course on innovation and career planning. The school offers its members financial support to attend neuroscience courses abroad. The school is praised for facilitating national as well as international networking activities.

Management and structure

The organisation and management of the research school are very lean and professional, and based on the activities of the individual board members. The board approves national and international courses and other activities offered to the PhD candidates. Evaluations of the various activities are presented to the board, which provides feedback as follow-up. This comprises a system for quality assurance. Four PhD candidates are members of the board. However, this is not mirrored in the perception of influence as reported by the PhD candidates who responded to the survey. (It should be noted that the response rate was 25%.) The board appoints the PhD candidate representatives. The partner institutions are dedicated and contribute to NRSN's activities. There is no formal international advisory board, but there is a long list of international collaborators. This indicates that there is a well-functioning international network, but a formal advisory board could strengthen the researcher training programme.

Coordination, facilitation and national network

The board, including the scientific director (who is from NTNU), and the administrative staff are efficient and competent. The responses from the four partner institutions all support the objectives of NSRN and express satisfaction with the disciplinary courses, the networking opportunities for PhD students (courses, summer school, annual meeting) and the financial support for attending national and international meetings, conferences, etc. The partner institutions also make a concrete contribution to the different activities in the form of manpower. Thus, as stated above, all partners are dedicated and engaged in NSRN's activities. There is minimal overlap of course activities; one partner expresses concern here. There is a formal agreement on ECTS approval. However, there is a need for clear communication about this, as some partners are unaware of the existence of the agreement. A majority of the PhD candidates who responded the survey regard the solutions relating to organisation and practicalities as fairly good to very good.

All PhD candidates within neuroscience are eligible to be members of the research school, based on a recommendation from their supervisor. Recruitment takes place through local board members, networking, the NSRN webpages, Facebook, etc. The enrolment of PhD candidates is based on the support of the individual student's main supervisor, who may be more or less supportive. The self-evaluation expresses concern about shortcomings in the recruitment of all relevant PhD candidates. There may also be an imbalance between basic and clinical neuroscience students in favour of those within basic neuroscience. A more translational and interdisciplinary profile is sought. The fact that only a few PhD candidates do not take part in the offered activities is a clear strength.

Activities

A majority of the PhD candidates who responded to the survey (25%) characterise the school's activities as fairly good to very good. The evaluation of the individual activity takes place as part of the final examination. The main advantage of the research school is its established course platform with national as well as international courses. Some of the PhD candidates find it difficult to see how the activities will promote their future career. Thus, the research school needs to place greater emphasis on career development and planning. The candidates are pleased with the financial support for attending national and international courses.

According to NRSN, the responsibility for supervision and supervisor training lies with the host institution. In line with this, the PhD candidates who responded to the survey identify their supervisors as belonging to their home institution and NOT to the research school. This may have some implications, e.g. that the supervisors are less supportive, and may pose an obstacle to fully

exploiting the benefits and synergy of the research school. The evaluation panel acknowledges that NRSN otherwise supports supervision by:

- 1) Establishing a tailor-made course for young supervisors, which will be continued.
- 2) Providing supervision and feedback during the annual PhD conference. Peer-review is an excellent method of training. However, more senior facilitators will be necessary to maintain an international standard.
- 3) Engaging international speakers and guest lecturers in areas where there is a lack of knowledge in Norway. The PhD candidates are given the opportunity to interact with and get feedback from these guests. However, it does take extra effort on the part of younger students to interact with international guests in senior positions. This kind of networking should therefore be facilitated.

Although only a subpopulation (25%), and perhaps a selected segment, of the PhD candidates affiliated with NRSN answered the survey, the panel notes that the PhD candidates consider the research school to have a beneficial effect on the quality of their research and on degree progression and completion.

Internationalisation

There are some contributions to the courses, summer school and annual meetings from abroad. NRSN provides support for participation in conferences and workshops abroad but not for shorter or longer stays. In 2017, NRSN will begin to fund longer stays abroad and organise laboratory rotations abroad. It would be beneficial to know the exact number of students attending courses and workshops outside Norway. Also, there is no information about the number of international PhD candidates participating in activities in Norway. Such data would document the international profile of NRSN. The individual partners and board members have international collaborators and thereby access to European organisations. Hopefully, these networks will also include the PhD candidates, allowing them to achieve a higher degree of synergy. The PhD candidates have a clear sense of the school as an international environment in terms of e.g. working language and staff composition. The partner institutions express that they have, to a varying degree, increased their research activities within the framework of the research school; one institution to a large extent. It would be interesting to know if there is one partner in particular that is benefitting from most of the added value of the research school.

Future perspectives

NRSN has a sincere interest in and strong commitment to continuing the research school. NRSN will continue to offer researcher training at a high international level, including national and international courses, a summer school, an annual PhD conference, workshops, and funding for outgoing PhD candidates. NRSN will strengthen the recruitment of PhD students from basic and clinical neuroscience to promote interdisciplinary research within neuroscience. Finally, the research school will seek to achieve its objectives by reaching out to more supervisors, monitoring success rates and following up alumni career paths. A dedicated, well-functioning board that ensures quality will in turn ensure continued activities. There is no doubt that the research school will succeed. However, NRSN must develop concrete plans for continuation after funding from the Research Council has ended.

Gender aspects

The gender balance in the group of senior members of the steering committee is fairly good, but could be improved (four out of 11 are women). The gender balance in the group of PhD candidates in the steering committee should reflect the balance in the PhD candidate population. This is predominantly female, much like other PhD programmes/research schools in the Nordic countries. The gender ratio of supervisors and keynote speakers is unknown. This issue is important, as they serve as role models for the PhD candidates.

Overall evaluation and recommendations

Without a doubt, NRSN is a strong research school and has the ambition and willingness to continue and further develop the training programme. The future plans for the research school are realistic and will further strengthen the school's national and international profile. Based on its evaluation, the panel recommends the following:

- NRSN should increase its visibility and tailor the content of its activities to improve recruitment of PhD candidates and involvement of supervisors
- Workshops/matchmaking events that build a bridge between basic and clinical scientists should be held to improve recruitment of clinicians
- International collaboration and networking activities should be strengthened to benefit the PhD candidates. These activities will also increase the possibility of applying for international grants, e.g. for Innovative Training Networks
- Collaboration with med-tech researchers and industry should be strengthened
- PhD candidate representatives on the steering committee should be elected by the PhD candidate population to strengthen their independence and objectivity
- To increase NRSN's visibility, the information provided on the webpages should facilitate networking activities, e.g. there should be a list of members of the school and contact information for the members of the steering committee, including the PhD candidate representatives. Furthermore, publication of a monthly newsletter should be considered

Attachments

1. Call for proposals for national research schools, 2012-2020. To be found here:
<http://www.forskningsradet.no/no/Utlysning/FORSKERSKOLER/1253976259874>
2. Questionnaire to
 - The national researcher school
 - The PhD-candidates
 - The partner institutions

Midtveisevaluering av nasjonale forskerskoler 2012–2016

Forskerskolens egenvurdering

[Tittel forskerskole]

Prosjektnummer:

Maksimum lengde på vurderingsskjemaet: 15 A4-sider

Frist for innsending: 12.10.2016

Bakgrunn

Målet med egenvurderingen er å få presentert hvordan forskerskolen vurderer sin aktivitet de fire første årene, sett opp mot opprinnelige planer og mål. I tillegg til forskerskolens rapport skal ph.d.-kandidatene og hver av partnerinstitusjonene også levere sin egenvurdering av forskerskolen.

Egenvurderingen (og øvrig materiale) kan skrives på norsk eller engelsk.

Del A Mål og suksesskriterier

(jamfør e-post "Anbefalinger ifbm fremtidige evalueringer" datert 4. april 2014)

Målsetning hentet fra revidert søknad:

1. Beskriv hvordan forskerskolen har operasjonalisert målene (begrenset til de fem viktigste).
2. Vurder hva som er suksesskriteriene for forskerskolen, basert på målene?
3. På hvilket område har forskerskolen oppnådd mest?

Del B Hovedaktører

Organisering og ledelse

4. Vær vennlig og legg ved en liste over styrets medlemmer med navn, funksjon i styret, institusjonstilknytning og tittel.
5. Har forskerskolen andre rådgivende organer enn styret? (Sett ett kryss.)

| | |
|----------|--------------------------|
| Ja | <input type="checkbox"/> |
| Nei | <input type="checkbox"/> |
| Vet ikke | <input type="checkbox"/> |

- a) Hvis ja, hvilke?

6. Har du kommentarer knyttet til styrets arbeid?

Koordinering og tilrettelegging

7. Fyll ut tabellen:

| | |
|--|-------|
| Daglig drift: | |
| Navn på faglig leder | [...] |
| Stillingsprosent faglig leder | |
| Navn på administrativ leder/koordinator | |
| Stillingsprosent administrativ leder/koordinator | |
| Administrative tilleggsressurser omregnet i hele stillinger pr. år | |

8. I hvilken grad oppfyller partnerinstitusjonene sine forpliktelser? (Sett ett kryss.)

| | |
|---------------------|--|
| I svært liten grad | |
| I ganske liten grad | |
| I varierende grad | |
| I ganske stor grad | |
| I svært stor grad | |
| Vet ikke | |

Eventuelle kommentarer:

9. Er det etablert forpliktende avtaler mellom medlemsinstitusjonene for gjensidig godkjenning av forskerskolens kurs (ECTS)? (Sett ett kryss.)

| | |
|----------|--|
| Ja | |
| Nei | |
| Vet ikke | |

Eventuelle kommentarer:

10. Eventuelle kommentarer om koordinering og tilrettelegging?

Ph.d.-kandidater og postdoktorer

10. Vær vennlig og fyll ut hver linje nedenfor med antall registrerte kandidater per år.

| Antall | 2013 | | 2014 | | 2015 | | 2016 | |
|------------------------|----------------------------|---------------------------------|----------------------------|---------------------------------|----------------------------|---------------------------------|----------------------------|---------------------------------|
| | Antall v/norsk institusjon | Antall v/utenlandsk institusjon | Antall v/norsk institusjon | Antall v/utenlandsk institusjon | Antall v/norsk institusjon | Antall v/utenlandsk institusjon | Antall v/norsk institusjon | Antall v/utenlandsk institusjon |
| Medlem i forskerskolen | | | | | | | | |

| Antall | 2013 | | 2014 | | 2015 | | 2016 | |
|---|----------------------------|---------------------------------|----------------------------|---------------------------------|----------------------------|---------------------------------|----------------------------|---------------------------------|
| | Antall v/norsk institusjon | Antall v/utenlandsk institusjon | Antall v/norsk institusjon | Antall v/utenlandsk institusjon | Antall v/norsk institusjon | Antall v/utenlandsk institusjon | Antall v/norsk institusjon | Antall v/utenlandsk institusjon |
| Medlemmer som har disputert | | | | | | | | |
| Medlemmer som har avsluttet uten avlagt grad | | | | | | | | |
| Medlemmer som har/har hatt forskningsopphold i utlandet i mer enn tre måneder | | | | | | | | |
| Ikke-medlemmer (assosierte medlemmer) som har deltatt på aktiviteter | | | | | | | | |
| Postdoktorer tilknyttet forskerskolen | | | | | | | | |

11. Beskriv kort eventuelle utmerkelser og priser til ph.d.-kandidater tilknyttet forskerskolen.

12. Beskriv kort hvordan forskerskolen har rekruttert ph.d.-kandidater.

13. Hva har fungert bra i måten forskerskolen har valgt å rekruttere ph.d.-kandidater?

14. Hva har vært utfordringene med måten forskerskolen har valgt å rekruttere ph.d.-kandidater?

Faglige bidragsytere

15. Vær vennlig og fyll ut hver linje nedenfor med antall personer per år (uavhengig av hvor mye tid hver enkelt har brukt).

| Antall | 2013 | 2014 | 2015 | 2016 |
|---|------|------|------|------|
| Faglige bidragsytere fra partnerinstitusjonene (til kurs, workshops, veiledning m.m.) | | | | |
| Faglige bidragsytere fra norske institusjoner utenfor forskerskolen: | | | | |
| Faglige bidragsytere fra utenlandske institusjoner utenfor forskerskolen: | | | | |

16. Hvilke vurderinger ligger til grunn for rekruttering og bruk av faglige bidragsytere i

forskerskolens aktiviteter? Beskriv kort.

17. Hvilke planer har forskerskolen for videreføring av det faglige nettverket som er etablert mellom lærere/forskere fra ulike institusjoner etter at bevilgningen fra Forskningsrådet opphører?

18. Nevn kort sterke og svake sider ved forskerskolens bruk av faglige bidragsytere.

Del C Aktivitetene

Veiledning

19. Beskriv kort hvordan veiledningen er organisert i forskerskolen.

20. Hvilke ulike veiledningsformer er benyttet? Beskriv kort.

21. Har forskerskolen tilbudt egne aktiviteter for veiledere (for eksempel egne kurs for veilederne eller egne samlinger for veilederne)?
Hvis ja, beskriv:

22. Hva har forskerskolen lyktes best med når det gjelder veiledning?

23. Hvordan kan den bli enda bedre når det gjelder veiledning?

Faglig opplæring

24. Lag en oversikt over forskerskolens aktiviteter i perioden 2012–2016 etter type aktivitet, omfang og deltakelse. Oversikten sendes som et vedlegg sammen med dette vurderingsskjemaet.

25. Har forskerskolen tilbudt ph.d.-kandidatene karriereveiledning?
Hvis ja, beskriv kort.

26. I hvilken grad overlapper forskerskolen opplæringstilbudet ved gradsgivende institusjon(er)? (Dette gjelder både vertsinstitusjonen til forskerskolen og partnerinstitusjonene.) (Sett ett kryss.)

| | |
|--------------------|--|
| I svært liten grad | |
|--------------------|--|

| | |
|---------------------|--|
| I ganske liten grad | |
| I ganske stor grad | |
| I svært stor grad | |
| Vet ikke | |

27. På hvilke områder i opplæringen har forskerskolen lyktes best?

28. Hvordan kan forskerskolen arbeide for å få et enda bedre opplæringstilbud?

Del D Internasjonalisering

29. Hva har vært forskerskolens viktigste bidrag når det gjelder internasjonalisering av ph.d.-kandidatene? (Flere svar mulig, sett kryss.)

| | |
|---|--|
| Reisestøtte for ph.d.-kandidater til faglige aktiviteter i utlandet (konferanser, workshops e.l.) | |
| Utenlandsopphold for ph.d.-kandidatene, inntil tre måneders varighet | |
| Utenlandsopphold for ph.d.-kandidatene, mer enn tre måneders varighet | |
| Utenlandske ph.d.-kandidater som medlemmer | |
| Utenlandske ph.d.-kandidater som assosierte medlemmer | |
| Reisestøtte til utenlandske ph.d.-kandidater for å delta i forskerskolens aktiviteter | |
| Kursleder(e) fra utenlandsk(e) institusjon(er) | |
| Veilede(e) fra utenlandsk(e) institusjon(er) | |
| Annet beskriv: | |

30. Beskriv kort og så kvantitativt som mulig, resultatene av internasjonalt samarbeid (for eksempel sampublikasjoner, nettverk m.m.).

31. På hvilke områder i internasjonaliseringsarbeidet har forskerskolen lyktes best?

32. Hvordan kan den bli enda bedre med internasjonaliseringsarbeidet?

33. Hvordan har internasjonaliseringsarbeidet bidratt til forskerskolens måloppnåelse?

Del E Samlet vurdering

34. På hvilke områder har forskerskolen lyktes best?

35. På hvilke områder har forskerskolen størst forbedringspotensial?

36. Hva er de viktigste risikofaktorene for resten av perioden med finansiering fra Forskningsrådet?

37. Beskriv kort planer for forskerskolens videreføring etter at bevilgningen fra Forskningsrådet er slutt.

Vurderingsskjemaet sendes til Marianne Helstad Nalum på mhn@forskningsradet.no

Følgende vedlegg sendes sammen med vurderingsskjemaet:

- Liste over styrets medlemmer, jamfør spørsmål 4.
- Oversikt over aktiviteter, jamfør spørsmål 24.

Mid-term evaluation of national researcher training schools

Questions to the Ph.D. candidates

A. Your background

- 1 Which researcher training school are you affiliated with?
- 2 Gender:
- 3 Year of birth:
- 4 Name of institution that administers your Ph.D. programme:
- 5 Name of programme you have been admitted to:
- 6 When were you admitted to the Ph.D. programme (date and year)?
- 7 When were you admitted to the researcher training school (date and year)?
- 8 How did you become affiliated with the researcher training school?
 - By application.
 - I enrolled upon request.
 - I was automatically accepted via the Ph.D. programme.
 - Other, *please describe*:
- 9 Your current affiliation with the researcher training school:
 - I am a full member.
 - I have participated in some courses/seminars/meetings.
 - I have completed my degree.
 - I withdrew membership before completing my degree.
 - Other, *please describe*:

B. Academic activities

Courses and seminars/meetings under the auspices of the researcher training school

- 1 Which courses, seminars/meetings or other activities under the auspices of the researcher training school have you participated in? **COMMENTS**
- 2 Please give your general assessment of the researcher training school's programmes in terms of the following points:
 - *Quality* of course content and seminars/meetings
 - Courses and seminars/meetings *as support for your doctoral work*
 - Courses and seminars/meetings as preparation for your future career
 - The overall *benefit* of courses and seminars/meetings

SCALE: Very poor, Fairly poor, Variable, Fairly good, Very good, Don't know

- 3 Any further comments on courses and seminars/meetings:
COMMENTS

Supervision

- 4 Have you received academic supervision via the researcher training school?
Yes
No
Don't know

iF "Yes" at question 4:

- 5 Please indicate how strongly you agree or disagree with the statements below:

The quality of the formal academic supervision I have received via the researcher training school is/has been high.

Cooperation between my supervisor at the researcher training school and my supervisor at my home institution has been constructive.

I am discussing or have discussed my future career with my supervisor.

I am part of my supervisor's professional network.

Scale: Strongly disagree
Somewhat disagree
Neither agree nor disagree
Somewhat agree
Strongly agree
Not applicable/Don't know

- 6 How many formal academic supervisory consultations (individual or group) under the auspices of the researcher training school have you had in the past 12 months?

Please specify a number.

If "No" at question 4:

7. Do you feel you receive adequate academic supervision at your home institution?

Yes

No

Does not apply/Don't know

All:

8. Any further comments on your academic supervision:

COMMENTS

C. Internationalisation

9. Please give your general assessment of internationalisation activities at the researcher training school:

a. The candidate group comprises an international mix.

- b. Experts from international institutions have roles in supervision and instruction.
- c. Support for travel is offered for scientific/academic activities abroad.
- d. Opportunities for longer research stays abroad (of at least three months) are available.
- e. Course instructors from international institutions are used.
- f. Support for travel is available to doctoral candidates from abroad seeking to participate in the researcher training school's activities.
- g. English is the working language.

Scale: To a very small extent

To a fairly small extent

Varies

To a fairly large extent

To a very large extent

Not applicable / Don't know

10. Any further comments on internationalisation at the researcher training school:

COMMENTS

D. Organisation and practical frameworks

11. Please give your general assessment of the following points:

The researcher training school's organisation of *academic/scientific activities*

The *practical framework for activities* at the researcher training school

Your opportunity for co-participation in and influence on the design of the researcher training school's *scientific/academic programme*

Scale: Very poor

Fairly poor

Variable

Fairly good

Very good

Don't know

12. Any further comments on organisation and practical frameworks:

COMMENTS

E. Benefits

13. Please rate the role you feel the researcher training school has played in terms of the following points:

Quality of your *doctoral work*
Time spent on and completion of doctoral degree
Contact and networking with other doctoral candidates
Coordination/interaction with instructors and supervisors
Your future career plans

Scale: Negative role

No role

Somewhat positive role

Highly positive role

14. In which areas do you feel the researcher training school has contributed *the most* to your academic and personal development? Please briefly describe up to three areas.

COMMENTS

15. In what areas of the researcher training school do you feel there is the greatest need for improvement? Identify up to three areas.

COMMENTS

Mid-term evaluation of national researcher training schools 2012–2016

Questions to the partner institutions:

Which researcher training school are you affiliated with?

Which partner do you represent?

Name of your institute/department and institution:

Part A: Academic activities

1. *Briefly describe* the impact of participation in the researcher training school on your institution's doctoral programme in the same field, discipline or topic.

To what extent is there overlap between the courses at the researcher training school and your institution's doctoral programme?

*Please mark your assessment on a scale of 1 to 5, where 1 means **to a very small extent** and 5 means **to a very large extent**.*

1. To a very small extent 5. To a very large extent
2. How many of your institution's researchers within the researcher training school's field contribute to the doctoral-level training at the researcher training school?

Part B: Cooperation

To what extent has the researcher training school led to changes in research cooperation and/or mobility between your institution and the other partner institutions within the researcher training school's field, discipline or topic?

*Please mark your assessment on a scale of 1 to 5, where 1 means **to a very small extent** and 5 means **to a very large extent**.*

1. To a very small extent 5. To a very large extent

3. Are there binding agreements between the partner institutions regarding mutual approval of ECTS points for the researcher training school's courses?

Yes
No
Don't know

Part C: Internationalisation

To what extent has the researcher training school affected your institution's international research cooperation/network within the researcher training school's field, discipline or topic?

*Please mark your assessment on a scale of 1 to 5, where 1 means **to a very small extent** and 5 means **to a very large extent**.*

1. To a very small extent

5. To a very large extent

If you wish to provide further comments, please do so here:

Part D: Overall assessment

4. Please comment briefly on the coordination and cooperation between the researcher training school's host institution and your institution:
 - a) What has worked well?
 - b) What could be improved?
5. If there are other issues you wish to mention or comments you wish to make, please do so here:



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