

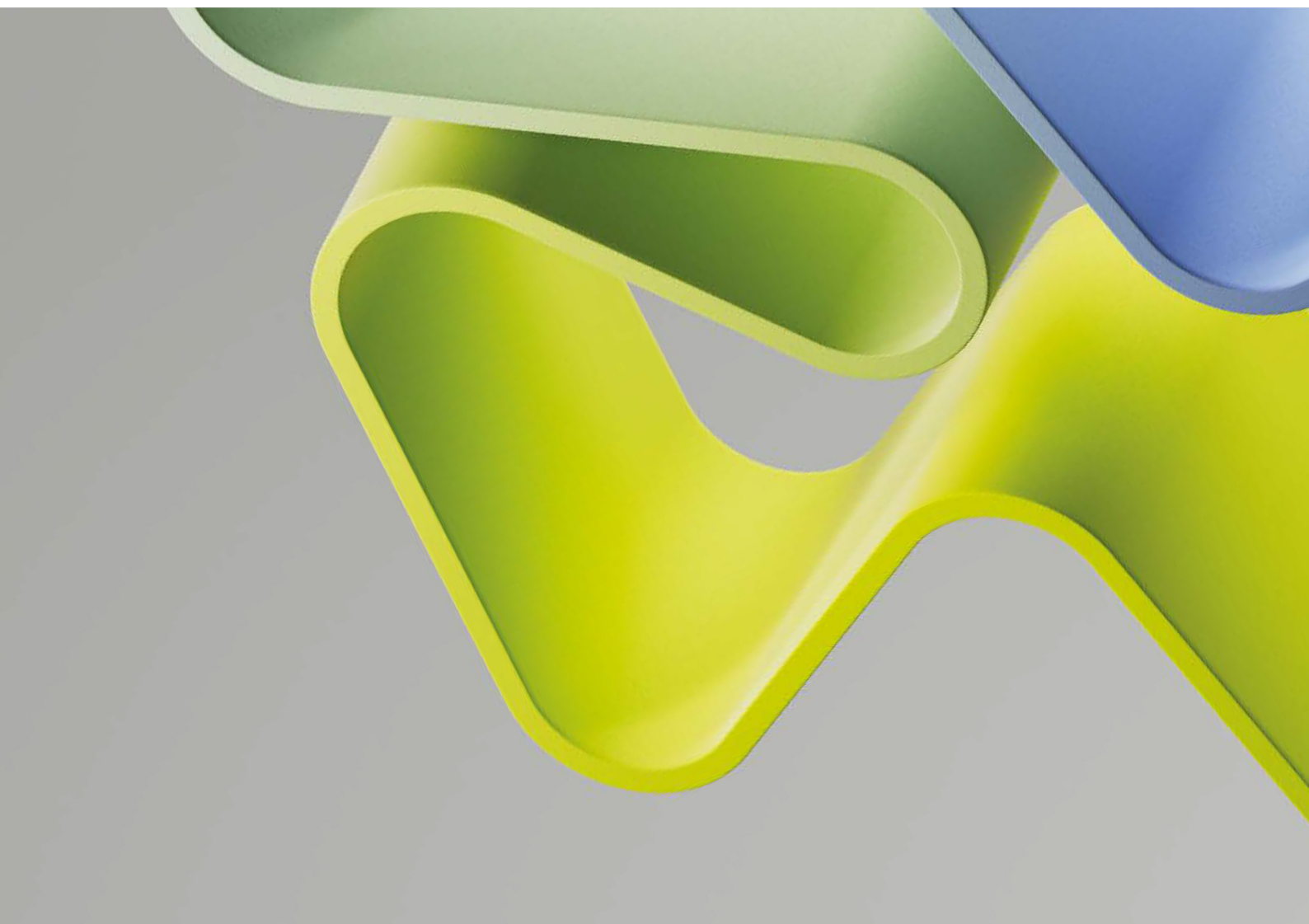
Evaluation of Medicine and Health 2023-2024

Evaluation report – Panel 3b_2

Research Group: Thrombosis Research Group (TREC)

Administrative Unit: Department of Clinical Medicine

Institution: UiT Arctic University of Norway



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Preface

The Research Council of Norway (RCN) is given the task by the Ministry of Education and Research to perform subject-specific evaluations. The primary aim of the evaluation of medicine and health (EVALMEDHELSE) 2023-2024 is to reveal and confirm the quality and relevance of research performed at Norwegian Higher Education institutions, research institutions (the institute sector) and the health trusts, in an international perspective. Such knowledge is useful for the institutions that participate in the evaluation, for the Research Council who advise the authorities on how research should be developed further, and for the authorities, who set targets and frameworks for research and higher education. Research groups submitted by their administrative unit will be assessed by 18 expert panels organised by research subjects or themes. The expert panels will assess research groups across institutions and sectors based on research group's self-assessments and examples of scholarly output. These research reports will be part of the evaluation of their belonging administrative units.

Abstract

TREC is a focused research group at the Medical Department, Arctic University, in the field of haematological research. Under the lead of Professor Hansen, the group has gained a high international reputation over 25 years of research. Expertise is mainly related to deep vein thrombosis (VTE). Several clinical and translational questions have been addressed and published in the leading journals of this field. The research findings are very well disseminated to the public and the group takes exemplary actions in lay education. The benchmark of the research group is set at an appropriate international level and the group is operating to a very high standard compared to other leading international groups.

Overall assessment

TREC is a small, but successful research group in a focused area of activity. TREC is very efficient and has the position of an international opinion leader. The research findings are very well disseminated to the public and the group takes exemplary actions in lay education.

Grading:

Dimensions	Score
Organisational dimension (How adequate the organisational environment is in supporting the production of excellent research).	5
Quality dimension (Research and publication quality/Research group's contribution)	4/4
Societal impact dimension (Research group's societal contribution/User involvement)	5/4

Recommendations

- The group may expand their expertise beyond VTE to other haematological disorders.
- Maintain and expand the opinion leader position in VTE – consider creating other leadership/mentorship opportunities for succession planning.

1. Strategy, resources and organization

1.1 Research group's organization and strategy

TREC is located in the Department of Medicine at the Arctic University of Norway and the Division of Internal Medicine at the University Hospital of North Norway. It consists of three interacting subdivisions, i.e. focus on clinical research (TREC-CLINIC), epidemiological research (TREC-EPI) and laboratory research (TREC-LAB). Prof. Hansen is the overall leader, whereas for TREC-EPI and TREC-LAB subgroup leaders are installed. With respect to research staff, there are 2 full-time professorships, one part-time (20%) professorship, 2 full-time and 1 part-time researcher (undefined), 4 post-docs, 10 PhD students 7 MD/PhD students and 1 research technician. The group is internationally orientated and comprises 12 different nationalities. According to the self-assessment, a dedicated weekly training plan for young fellows was developed to foster the research activity. Here running projects are discussed, current publications presented and young researchers trained in developing projects and publishing data. Many PhD students have graduated from TREC and continued working in Norwegian hospitals. TREC is linked up with several leading groups in the respective research fields. There has also been an exchange of research fellows from abroad supporting internationalization.

The research strategy of TREC has been declared as the vision to diminish suffering and burden of venous thrombosis by discovering novel risk factors and disease mechanisms with the aim to allow personalized prevention and treatment. TREC strives to implement the vision and culture among all members by hosting regular meetings and interactive seminars focusing solely on research strategy, collaboration, working conditions and team building. The key competence relates to epidemiology, population science, proteomics, cell biology and basic science in the field of thrombosis and hemostasis. The latter constitutes the international reputation of the research group. The respective strategy documents are available online. TREC has established an international network with collaborators in the USA, Netherlands, Spain, France, and Denmark. This has resulted in joint publications.

This is a highly well organised research group with strong leadership. The goals, objectives and strategy is well defined and the benchmark is set at a very high standard that the group achieves. There is evidence of strong support from the host institution. The group contributes to all aspects of academic work (research, education and training).

Recommendations to the research group

- Continue to further develop the excellent training program.

1.2 Research group's resources

Regarding personnel, there are 2 full-time professorships, one part-time (20%) professorship, 2 full-time and 1 part-time researcher (undefined), 4 post-docs, 10 PhD students 7 MD/PhD students and 1 research technician. TREC is very active in applying for external funds. Successful funding from competitive sources is very high for this rather small group of scientists and reflects the prominent position in this field of research. TREC has had > 60% external funding from competitive national funding sources. During 2018-2022, external funding accounted for 65.9 % of the total R&D funding of TREC research activities. Applications for external funding seem very satisfactory considering the limited permanent research staff allocated to the group by UiT. Only external funding allowed the high quality scientific output in the translational research.

With internal and external funding TREC has successfully established research facilitates and a wide spectrum of experimental activities. These include cellular, biochemical, and molecular studies, targeting novel mechanisms of VTE. On top, the group utilizes the core facilities at UiT for proteomics, high-resolution microscopy, and advanced cellular analyses. For high-throughput sequencing, a partnership with the Norwegian Sequencing Centre in Oslo has been established. TREC makes use of dedicated commercial services to enhance its research quality. These include high-end proteomics analysis from Proteome Sciences (UK) and SomaLogic (USA), the use of VTE-specialized animal models by Synovo (Germany), and high-throughput microRNA analysis in plasma performed by Qiagen (Denmark/Germany). The use of these commercial research infrastructures has contributed to enhance the group's research output and impact. There are close collaborations with other leading groups worldwide. The lead professor of the research group is well respected and deeply engaged in the international scientific community. This gives access to fruitful cooperation with other leading institutions in the field of VTE.

The research group has an excellent mix of staff, clear leadership, and access to impressive facilities. The funding portfolio is conducive to conducting excellent research.

Recommendations to the research group

- Continue to apply for funding from all available sources, as funding seems to be lower in the years 2021/ 2022. It would be recommended to consider developing a 3-5 year funding strategy and consider ways to attract more funding from industry.

1.3 Relevance to the institution

The research group is well-organised and structured. It is locally as well as internationally well respected. Several well-designed trials have been conducted (MILESTONE, MISSION, CAT, Obesity), including some translational projects. The research of TREC is characterized by innovative basic and translational research including population-based studies. Thereby, it is a major asset for the local region, in particular for the university. TREC has established an exemplary board for client involvement which is engaged in planning of research projects and dissemination of results to the public.

TREC has contributed to the reputation of the institution by substantial international visibility due to publications in high-ranked international peer-reviewed journals as well as many invited and selected oral presentations at important international conferences in the field (e.g., ISTH). The translational research has led to novel discoveries with innovation potential. TREC has built up collaborations with national (Universities in Oslo and Trondheim) and international institutions and researchers in the field (USA, Denmark, Netherlands, Spain), as well as participation in a large international consortium on genetics and VTE (INVENT-VTE). These collaborations have key impact on visibility and research output, particularly with regards to complementary skills, research mobility, and infrastructure to enable science at highest levels.

TREC has contributed to increase the academic competence of medical doctors at hospitals in Norway. Most of the 29 PhD-students that have graduated through TREC in 2012-2022 are currently working as medical doctors in Norwegian hospitals. In addition, medical doctors with a PhD from TREC are currently employed in part-time associate professor positions at UiT and involved in teaching and supervision within hematology and other specialties at the medical school curriculum. Furthermore, candidates to other institutions like the National Institute of Public Health and the Norwegian Medicines Agency have been trained at TREC.

This research group has a clear focus and makes substantial contribution to the institution's strategies and objectives – these are mapped back to clearly defined benchmark.

Recommendations to the research group

- Continue with the international collaborations.
- Involve other disciplines in the study programmes, for example, oncology.

2. Research quality

2.1 Research group's scientific quality

The focus of TREC is venous thromboembolism (VTE) which is a frequent disease with severe complications and a high mortality rate. Accordingly, there is great demand for research in this area. Prevention and treatment of VTE is challenging because the currently available drugs are associated with increased risk of bleeding. TREC has a well-defined vision and strategy, and all research projects carried out by the group are directed towards the goal to reduce the individual suffering and burden of VTE. During the last ten years, the group around Professor Hanson has established a translational framework to identify novel risk factors and biomarkers for VTE and to unravel disease mechanisms. The outcome registries for VTE in the Tromsø and HUNT studies are absolutely unique in an international context with respect to completeness and precision. The plasma samples that have been stored in biobanks allow in the future to identify new causal risk factors as well genetic and protein biomarkers with predictive capability of VTE. Furthermore, the new methods to experimentally investigate the role of extracellular vesicles (EVs) in coagulation and in VTE represents a unique approach.

TREC has gained substantial visibility over the last 10 years by >200 publications from the core team in mostly high-ranked international peer-reviewed journals, including European Heart Journal, Circulation, Blood, European Journal of Epidemiology, Journal of Thrombosis and Haemostasis and ATVB. The mean impact factor of the publications increased exceptionally from 4.5 to 14.4. In addition, the group gives regularly oral presentations at major conferences in the field, like the International Society on Thrombosis and Haemostasis (ISTH). TREC has attracted both national and international collaborators, who are co-authors in the core publications.

The research quality in relation to both contribution and leadership in research and outputs are excellent in the specific field of VTE.

Recommendations to the research group

- Keep and expand the competence in VTE and develop new fields of research.

2.2 Research group's societal contribution

TREC has taken a great focus on dissemination of project results and on increasing the public awareness and knowledge of VTE in the society, both at the national and international level. The board for client involvement has given advice on dissemination to users and the public and been involved in the organization and implementation of the interactive sessions that were held between TREC and the public. Furthermore, TREC has contributed to increase the academic competence in the health care sector by education and structural training of medical professionals.

The group frequently uses the press and social media to disseminate the findings to the public and educate professionals and non-professionals. This activity is exemplary.

The research group has made a very significant contribution to societal impact that extends well beyond Norway. The client board is noted as a strength but its focus is more on dissemination to and for users. Given the nature of translational/clinical research, users should be involved at all stages in the research process, including study design.

Recommendations to the research group

- Expand the user involvement in research – this will require co-creation with both users and scientists to ensure true public and patient involvement in research.

Appendices

Evaluation of Life Sciences in Norway 2022-2024

Evaluation of Medicine and Health 2023-2024

Mandate Expert panels

The Research Council of Norway (RCN) is given the task by the Ministry of Education and Research to perform subject-specific evaluations. The Portfolio board for Life Sciences in the Research Council of Norway has decided to carry out an evaluation of medicine and health in 2023-2024 as the second of two evaluations within Life Sciences. The evaluation of biosciences takes place in 2022-2023.

1. The objective of the evaluation

The primary aim of the evaluation of Life Sciences is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), by the institute sector and by health trusts.

The results of the evaluation will be used as recommendations to the institutions, the Research Council, and the ministries.

2. Tasks of the expert panels

The panels are requested to:

- evaluate the strategy, resources and organisation of/for the research groups.
- evaluate research production and quality of the research groups.
- grade and write a short evaluation text to the evaluated research groups.

Each of the expert panels will write a brief report with evaluations of the different research groups as well as specific recommendations.

3. Time schedule

Digital panel meetings will take place in the period March 15. - June 15. 2024.

Deadline for submitting panel report to the Research Council: June 15. 2024.

4. Miscellaneous

Other important aspects of Norwegian life sciences research that ought to be given consideration.

EVALMEDHELSE 2023-2024 – Panel group description – January 2024

Panel group	Description	Panel no.
Group 1 PHYSIOLOGY Physiology-related disciplines (human physiology), including corresponding translational research	Anatomy, physiology, embryology, nutritional physiology, pathology, basic odontological research, exercise physiology, neurobiology, toxicology, pharmacology, medicinal chemistry, chemistry, biology, pathology.	Panel 1a Panel 1b
Group 2 MOLECULAR BIOLOGY Molecular Biology, including corresponding translational research	Microbiology, bacteriology, inflammation and infection disease research, forensic medicine, genetics, immunology, vaccine development, microbiological diagnostics, pharmaceutical microbiology, cell biology, molecular medicine and -biophysics, medical biochemistry, omics, organoids, imaging, toxicology, pathology, drug development, cancer research, translational research, systems biology, personalized medicine, biomarkers, oncology, genetics, genomics, epigenetics, proteomics, bioinformatics-/statistics, computational science, AI, biology, virology, radiology, ionisation, molecular biology, microbiology, pharmacology, pharmacogenomics, regenerative medicine and related subjects.	Panel 2a Panel 2b Panel 2c
Group 3a CLINICAL RESEARCH	Clinical Research, including surgery and translational research within: paediatrics, women's health, gynaecology, otorhinolaryngology, head and neck surgery, oncology, haematology, radiology and medical imaging.	Panel 3a_1 Panel 3b_2
Group 3b CLINICAL RESEARCH	Clinical Research, including surgery and translational research within: general medicine, emergency medicine, anaesthesiology, neurology, geriatric medicine, rehabilitation medicine, cardiology, nephrology/urology, endocrinology, pulmonary medicine, orthopaedics, rheumatology, Infection, gastroenterology.	Panel 3b_1 Panel 3b_2 Panel 3b_3
Group 4 PUBLIC HEALTH Public Health and Health-related Research	Public health, community research, epidemiology, preventive medicine, mental health, behavioural research and ethics, medical statistics, environment, nutrition, preventive medicine, physiotherapy, sports medicine, implementation research, public health, health care services research, global health, nursing	Panel 4a Panel 4b Panel 4c

	sciences, rehabilitation sciences, public health systems, digital health care services, ICT, HTA, health competence, genetic and epigenetic epidemiology, non-communicable diseases, pharmacology, nursing research, professional research, occupational medicine.	Panel 4d Panel 4e Panel 4f
Group 5 PSYCHOLOGY Psychology and Psychiatry	Clinical psychology, personality psychology, developmental psychology, cognitive psychology, biological psychology and forensic psychology, psychiatry, including geriatric psychiatry, child and adolescent psychiatry and biological psychiatry, social-, community- and workplace psychology, organizational psychology, developmental psychology, behavioural and health psychology, health promotion and well-being.	Panel 5a Panel 5b

Panel group 3b CLINICAL RESEARCH

Expert panel 3b_2

Name	Title	Institution
Victor Gault (chair)	Professor	Ulster University
Christian Wilhelm Hamm	Professor	University of Giessen
Jolanta Malyszko	Professor	Medical University of Warsaw
Phillip Calder	Professor	University of Southampton



Evaluation of Medicine and Health (EVALMEDHELSE) 2023-2024

Self-assessment for research groups

Date of dispatch: **15. September 2023**
Deadline for submission: **31. January 2024**

Updated: **13. October 2023**

Institution (name and short name): _____

Administrative unit (name and short name): _____

Research group (name and short name): _____

Date: _____

Contact person: _____

Contact details (email): _____

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Introduction

The primary aim of the evaluation is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), the institute sector and the health trusts. These institutions will henceforth be collectively referred to as research performing organisations (RPOs). The evaluation report(s) will provide a set of recommendations to the RPOs, the Research Council of Norway (RCN) and the responsible and concerned ministries. The results of the evaluation will also be disseminated for the benefit of potential students, users of research and society at large.

You have been invited to complete this self-assessment as a research group. The self-assessment contains questions regarding the group's research- and innovation related activities and developments over the years 2012-2022. All submitted data will be evaluated by expert panels.

Deadline for submitting the self- assessment to your administrative unit – 26 January 2024

The administrative unit will submit the research groups' completed self-assessments and the administrative unit's own completed self-assessment to the Research Council within 31 January 2024. Please submit completed self- assessment to the administrative unit no later than 26 January 2024.

Please use the following format when naming your document: [short name of the institution]_[short name of the administrative unit]_[short name of the research group], e.g. *UiT_DepPsy_Short name of the research group*.

For questions concerning the self-assessment or EVALMEDHELSE in general, please contact RCN at evalmedhelse@forskningsradet.no.

Thank you!

Guidelines for completing the self-assessment

- Please read the entire self-assessment document before answering.
- The evaluation language is English.
- Please link to websites/documents in the self-assessment where relevant.
- Please be sure that all documents linked to in the self- assessment are written in English and are accessible.
- The page format must be A4 with 2 cm margins, single spacing and Calibri and 11-point font.
- The self-assessment follows the same structure as the [evaluation protocol](#). In order to be evaluated on the two evaluation criteria described in the evaluation protocol, the research group must answer all questions.
 - ⇒ Provide information – provide documents and other relevant data or figures about the research group, for example strategy and other planning documents, as well as data on R&D expenditure, sources of income and results and outcomes of research
 - ⇒ Describe – explain and present using contextual information about the research group and inform the reader about the research group.
 - ⇒ Reflect – comment in a reflective and evaluative manner how the research group operates.
- Data on personnel should refer to data reported to DBH on 1 October 2022 for HEIs and to the yearly reporting for 2022 for the institute sector and the health authorities. Other data should refer to 31 December 2022 if not specified otherwise.
- It is possible to extend the textboxes when filling in the form. **NB!** A completed self- assessment form cannot exceed 25 pages (pdf file). Expert panels are not requested to read more than the maximum of 25 pages. Pages exceeding maximum limit of 25 pages **might not** be evaluated.
- Submit the self- assessment as a pdf (max 25 pages) to the administrative unit within **26 January 2024**. Before submission, please be sure that all text are readable after the conversion of the document to pdf. The self- assessment should be sent from the administrative unit to evalmedhelse@forskningsradet.no within **31 January 2024**.

Please note that information you write in the self assessment and the links to documents/websites in the self-assessment are the only available information for the expert panel.

In exceptional cases, documents/publications that are not openly available must be submitted as attachment(s) to the self- assessment (pdf file(s)).

1. Organisation and strategy

1.1 Research group's organisation

Describe the establishment and the development of the research group, including its leadership (e.g. centralised or distributed etc.), researcher roles (e.g. technical staff, PhD, post docs, junior positions, senior positions or other researcher positions), the group's role in researcher training, mobility and how research is organised (e.g. core funding organisation versus project based organisation etc.).

Table 1. List of number of personnel by categories

Instructions: Please provide number of your personnel by categories.

For institutions in the higher education sector, please use the categories used in DBH, <https://dbh.hkdir.no/datainnhold/kodeverk/stillingskoder>. Please add new lines or delete lines which are not in use.

	Position by category	No. of researcher per category	Share of women per category (%)	No. of researchers who are part of multiple (other) research groups at the admin unit	No. of temporary positions
No. of Personnel by position	Position A (Fill in)				
	Position B (Fill in)				
	Position C (Fill in)				
	Position D (Fill in)				

1.2 Research group's strategy

a) Describe the research group's main goals, objectives and strategies to obtain these (e.g. funding, plans for recruitment, internationalization etc.) within the period 2012-2022.

b) Please describe the benchmark of the research group. The benchmark for the research group should be written by the administrative unit in collaboration with the research group. The benchmark can be a reference to an academic level of performance (national or international) or to the group's contributions to other institutional or sectoral purposes.

Example: A benchmark for a research group is related to the research groups' aim which again is included in the strategy for the administrative unit. A guidance for the administrative unit to set a benchmark for the research group(s) can e.g. be: What do the administrative unit expect from the research group(s)?

c) Describe the research group's contribution to education (master's degree and/or PhD).

d) Describe the support the host institution provides to the research group (i.e., research infrastructure, access to databases, administrative support etc.).

1.3 Relevance to the institutions

Describe the role of the research group within the administrative unit. Consider the research group's contribution towards the institutional strategies and objectives, and relate the research group's benchmark to these.

1.4 Research group's resources

Describe the funding portfolio of the research group for the last five years (2018-2022).

Table 2. Describe the sources of R&D funding for the research group in the period 2018-2022.

	2018 (NOK)	2019 (NOK)	2020 (NOK)	2021 (NOK)	2022 (NOK)
Basic funding					
Funding from industry and other private sector sources					
Commissioned research for public sector					
Research Council of Norway					
Grant funding from other national sources					
International funding e.g. NIH, NSF, EU framework programmes					
Other					

1.5 Research group's infrastructures

Research infrastructures are facilities that provide resources and services for the research communities to conduct research and foster innovation in their fields. [These](#) include major equipment or sets of instruments, knowledge-related facilities such as collections, archives or scientific data infrastructures, computing systems communication networks. Include both internal and external infrastructures.

- Describe which national infrastructures the research group manages or co-manages.
- Describe the most important research infrastructures used by the research group.

1.6 Research group's cooperations

Table 3. Reflect on the current interactions of the research group with other disciplines, non-academic stakeholders and the potential importance of these for the research (e.g. informing research questions, access to competence, data and infrastructure, broadening the perspectives, short/long-term relations).

Interdisciplinary (within and beyond the group)	About 1/3 page
Collaboration with other research sectors e.g. higher education, research institutes, health trusts and industry.	About 1/3 page
<u>Transdisciplinary</u> (including non academic stakeholders) <i>Transdisciplinary research involves the integration of knowledge from different science disciplines and (non-academic) stakeholder communities with the aim to help address complex societal challenges.</i>	About 1/3 page

2. Research quality

2.1 Research group's scientific quality

Describe the research profile of the research group and the activities that contribute to the research group's scientific quality. Consider how the research group's work contributes to the wider research within the research group's field nationally and internationally.

Please add a link to the research group's website:

Short version

Table 4. List of projects

Instructions: Please select 5-10 projects you consider to be representative/the best of the work in the period 1 January 2012 – 31 December 2022. The list may include projects lead by other institutions nationally or internationally. Please delete tables that are not used.

Project 1 -10: <i>Project title/Project period (year from – year to)</i>	Project owner(s) (project leaders organisation)	
	Total budget and share allocated to research group	
	Objectives and outcomes (planned or actual) and link to website	

Table 5. Research group's contribution to publications

Instructions: Please select 5-15 publications from the last 5 years (2018-2022) with emphasis on recent publications where group members have a significant role. **If the publication is not openly available, it should be submitted as a pdf file attached to the self-assessment.** We invite you to refer to the Contributor Roles Taxonomy in your description: <https://credit.niso.org/>.

Cf. Table 1. List of personell by categories: Research groups up to 15 group members: 5 publications. Research groups up to 30 group members: 10 publications. Research groups above 30 group members: 15 publications.

Please delete tables that are not used.

Publication 1 -15: <i>Project title/Journal/Year/DOI/URL</i>	Authors (Please highlight group members)	
	Short description	
	Research group's contribution	

Table 6. Please add a list with the research group's monographs/scientific books.

Please delete lines which are not used.

1	Title - Authors (Please highlight group members)- link to webpage (if possible)
2	

2.2 Research group's societal contribution

Describe the societal impact of the research group's research. Consider contribution to education, economic, societal and cultural development in Norway and internationally.

Table 7. The research group's societal contribution, including user-oriented publications, products (including patents, software or process innovations

Instructions: Please select 5–10 of your most important user-oriented publications or other products from the last 5–10 years with emphasis on recent publications/products. For each item, please use the following formatting. Please delete lines which are not used.

3. Challenges and opportunities

Information about the strengths and weaknesses of the research group is obtained through the questions above. In this chapter, please reflect on what might be the challenges and opportunities for developing and strengthening the research and the position of the research group.

Short version

Scales for research group assessment

Organisational dimension

Score	Organisational environment
5	An organisational environment that is outstanding for supporting the production of excellent research.
4	An organisational environment that is very strong for supporting the production of excellent research.
3	An organisational environment that is adequate for supporting the production of excellent research.
2	An organisational environment that is modest for supporting the production of excellent research.
1	An organisational environment that is not supportive for the production of excellent research.

Quality dimension

Score	Research and publication quality	Score	Research group's contribution Groups were invited to refer to the Contributor Roles Taxonomy in their description https://credit.niso.org/
5	Quality that is outstanding in terms of originality, significance and rigour.	5	The group has played an outstanding role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
4	Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.	4	The group has played a very considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
3	Quality that is recognised internationally in terms of originality, significance and rigour.	3	The group has a considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
2	Quality that meets the published definition of research for the purposes of this assessment.	2	The group has modest contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
1	Quality that falls below the published definition of research for the purposes of this assessment.	1	The group or a group member is credited in the publication, but there is little or no evidence of contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.

Societal impact dimension

Score	Research group's societal contribution, taking into consideration the resources available to the group	Score	User involvement
5	The group has contributed extensively to economic, societal and/or cultural development in Norway and/or internationally.	5	Societal partner involvement is outstanding – partners have had an important role in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
4	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is very considerable given what is expected from groups in the same research field.	4	Societal partners have very considerable involvement in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
3	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is on par with what is expected from groups in the same research field.	3	Societal partners have considerable involvement in the research process, from problem formulation to the publication and/or process or product innovation.
2	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is modest given what is expected from groups in the same research field.	2	Societal partners have a modest part in the research process, from problem formulation to the publication and/or process or product innovation.
1	There is little documentation of contributions from the group to economic, societal and/or cultural development in Norway and/or internationally.	1	There is little documentation of societal partners' participation in the research process, from problem formulation to the publication and/or process or product innovation.

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