

Appendix A: Terms of References (ToR)

The board of the Faculty of Health Sciences, UiT the Arctic University of Norway, mandates the evaluation committee appointed by the Research Council of Norway (RCN) to assess The Department of Pharmacy (IFA) based on the following Terms of Reference.

Assessment

You are asked to assess the organisation, quality and diversity of research conducted by The Department of Pharmacy (IFA) as well as its relevance to institutional and sectoral purposes, and to society at large. You should do so by judging the unit's performance based on the following five assessment criteria (a. to e.). Be sure to take current international trends and developments in science and society into account in your analysis.

- a) Strategy, resources and organisation
- b) Research production, quality and integrity
- c) Diversity and equality
- d) Relevance to institutional and sectoral purposes
- e) Relevance to society

For a description of these criteria, see Chapter 2 of the life sciences evaluation protocol. Please provide a written assessment for each of the five criteria. Please also provide recommendations for improvement. We ask you to pay special attention to the following five aspects in your assessment:

1. Relevance of pharmaceutical research in a changing society

The Department of Pharmacy (IFA) has a research strategy that supports the overarching UiT strategy, highlighting interdisciplinary collaboration to solve major societal challenges (such as rising healthcare costs and workforce shortages). To fulfil this strategy, we are organised into five research groups – see Fig. 1. The groups provide teaching and research in pharmaceutical sciences, reflecting the diversity within pharmaceutical research, education, and practice. In healthcare, major challenges are the change in demographics leading to an ageing population, increased antimicrobial resistance (AMR), and escalating occurrence of cancer, necessitating the need for more effective pharmaceutical treatment options. IFA has contributed to meeting these challenges by studying drug use in older adults, the evolution and spread of AMR, signalling pathways in cancer cells, new technologies for efficient drug delivery, synthesis of potential new drug candidates, biomarker studies for improved diagnosis, and optimizing treatment with medicines. We appreciate input on organizational and targeted issues that might strengthen our relevance and research focus.

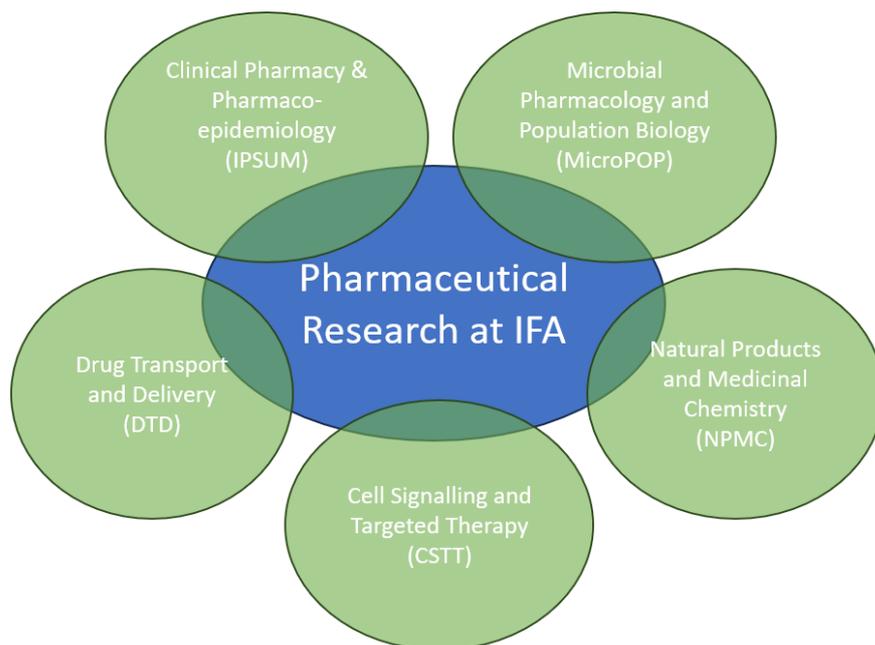


Figure 1. Research Groups at The Department of Pharmacy (IFA)

2. Larger initiatives in research excellence

IFA has been successful in attracting external funding during the last ten years – approximately 20 million Euros, ranging from coordinating and participating in EU, Nordic, national and regional projects. Four of IFA's research groups (DTD, IPSUM, MicroPop and NPMCR) are affiliated with the Centre for New Antibacterial Strategies (CANS), a large interdisciplinary centre for research, education, innovation, and dissemination related to AMR. The centre involves 16 research groups from three faculties at UiT and is funded jointly by UiT and Tromsø Research Foundation. Furthermore, CANS is part of a network of eight Nordic AMR centres. Research groups at IFA are actively pursuing larger research funding initiatives with internal and external partners. These initiatives include ERC (SyG and StG), the Research Council of Norway (RCN) Centre of Excellence, and KG Jebsen Centre. In addition, IFA is leading and participating in several cross-faculty research initiatives. We ask the committee to assess IFA's achievements in larger research initiatives and provide recommendations for the future to establish new excellent initiatives.

3. Infrastructure: laboratories, core facilities, population-based studies, and clinical setting

IFA is situated in its own building designed and equipped for research and education within pharmaceutical disciplines. We have access to relevant core facilities located at the Faculty of Health Sciences, e.g., within advanced microscopy, genomics, proteomics and metabolomics, and the section for comparative medicine (experimental animal research). Personnel at IFA also have responsibilities for running and maintaining equipment in the core facilities, e.g., advanced mass spectrometric instrumentation for metabolomics and lipidomics. Moreover, IFA's proximity to the University Hospital of Northern Norway, the Hospital pharmacy and the Preclinical PET Core Facility fosters robust research partnerships for our research groups. We have strong links to the Norwegian National Advisory Unit on Detection of AMR (National reference centre) and the Norwegian surveillance program for AMR, both located at the University Hospital of Northern Norway, Tromsø. Moreover, IFA constantly aims to keep infrastructure up to date to be able to stay at the research forefront and are today involved in two RCN Infrastructure project applications, "Research

Laboratory for Pharmaceutical Production and Characterization” and “NorMet - Norwegian Infrastructure for Metabolomics”. We ask the committee to assess our current research infrastructure and how best to position ourselves for future needs in cutting-edge research.

4. Bench to bedside – patient-oriented research

The research at IFA aims to benefit patients in the following ways: research on medication optimization, development of more efficient drug delivery, understanding disease mechanisms, combating AMR, drug development, improved diagnosis, and targeted therapy. This is achieved through collaborations with pharmacies, hospital clinics, municipalities, national and international research institutions and networks. To fulfil our innovation responsibilities, we closely collaborate with *UiTs Technology Transfer Office (NORINNOVA)* and regularly file *Disclosures of Inventions (DOFIs)*. Researchers at IFA are involved in national initiatives in precision medicine by participating in the *National competence network for personalized medicine (NorPrem, see <https://norprem.no>)* and by working with the private sector in closing an important data gap in real world oncology research with molecular profiling of novel biomarkers in archived tumor tissue samples (<https://www.nordicrwe.com/>). Researchers are also involved in Nordic POP patient-oriented products (<https://nordicpop.ku.dk>) which is a NordForsk-financed University hub aiming to provide the scientific foundation for the next-generation pharmaceutical products by strengthening the use of interdisciplinary approaches within Nordic pharmaceutical sciences. We ask the committee for input on how to fully benefit from our interdisciplinary organisational structure.

5. Public outreach

To ensure access to evidence-based research, IFA focuses on ethically-guided dissemination of scientific expertise and the newest research findings to students, researchers, health professionals, respective patients' organizations, and the general public. IFA actively participates in all UiT activities such as the *National Research Days* and *Open University*. In addition, we regularly disseminate our research in relevant arenas, including patient organisations, and at local, regional, national, and international level. Through all outreach activities, the multidisciplinary of research topics, as well as interdisciplinary expertise are interpolated to assure open access to research as expected by national and international funding bodies. We ask for recommendations on how to extend our visibility and interaction with the public.

In addition, we would like your report to provide a qualitative assessment of The Department of Pharmacy (IFA) as a whole in relation to its strategic targets. The committee assesses the strategy that the administrative unit intends to pursue in the years ahead and the extent to which it will be capable of meeting its targets for research and society during this period based on available resources and competence. The committee is also invited to make recommendations concerning these two subjects.

Documentation

The necessary documentation will be made available by the life sciences secretariat at Technopolis Group.

The documents will include the following:

- a report on research personnel and publications within life sciences commissioned by RCN
- a self-assessment based on a template provided by the life sciences secretariat

Interviews with representatives from the evaluated units

Interviews with the Department of Pharmacy will be organised by the evaluation secretariat. Such interviews can be organised as a site visit, in another specified location in Norway or as a video conference.

Statement on impartiality and confidence

The assessment should be carried out in accordance with the *Regulations on Impartiality and Confidence in the Research Council of Norway*. A statement on the impartiality of the committee members has been recorded by the RCN as a part of the appointment process. The impartiality and confidence of committee and panel members should be confirmed when evaluation data from Department of Pharmacy are made available to the committee and the panels, and before any assessments are made based on these data. The RCN should be notified if questions concerning impartiality and confidence are raised by committee members during the evaluation process.

Assessment report

We ask you to report your findings in an assessment report drawn up in accordance with a format specified by the life sciences secretariat. The committee may suggest adjustments to this format at its first meeting. A draft report should be sent to the Department of Pharmacy and RCN. The Department of Pharmacy should be allowed to check the report for factual inaccuracies; if such inaccuracies are found, they should be reported to the life sciences secretariat within the deadline given by the secretariat. After the committee has made the amendments judged necessary, a corrected version of the assessment report should be sent to the board of the Faculty of Health Sciences, UiT the Arctic University of Norway and the RCN after all feedback on inaccuracies has been received from the Department of Pharmacy.