UNIVERSITETET I OSLO

Institutt for biovitenskap

ADMINISTRASJONEN
I. 1/2024

INNKALLING STYREMØTE

Instituttstyrets møte nr. 1/2024 – 21.3.2024 kl. 12.00. Sted: Møterom 1220, Kristine Bonnevies hus

V-SAK 01/2024 GODKJENNING AV INNKALLING/SPØRSMÅL OM HABILITET I VEDTAKSSAKER

Forslag til vedtak:
Innkallingen godkjennes

O-SAK 2/2024 LIVSVITENSKAPSBYGGET
Instituttleder orienterer

D-SAK 03/2024 STRATEGIPLAN
Sakspapirer:
Utkast til strategiplan
Rapport EVALBIOVIT administrativ enhet

O-SAK 04/2024 STATUS INVIVO
Instituttleder orienterer

O-SAK 05/2024 NYTT FORSKNINGSFARTØY
Instituttleder orienterer

O-SAK 06/2024 INSTITUTTETS ØKONOMI
Instituttleder orienterer

O-SAK 07/2024 TALL FOR BACHELORPROGRAMMET
Yngvild Vindenes orienterer
Sakspapirer:
Notat bachelor

O-SAK 8/2024 ARBEIDET MED UTDANNING
Utdanningsleder orienterer

Oslo, 14. mars 2024
Roger Simm
Instituttleder

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Institutt for biovitenskap

Strategi 2024 - 2030

Innledning

Biovitenskap søker å forstå grunnleggende biologiske prosesser og strukturer fra molekylær-, celle- og organismenivå til populasjons- og økosystemnivå, og hvordan disse er tilpasset og utvikler seg i et skiftende miljø. Institutt for biovitenskap har som mål å oppnå helhetlig innsikt i disse prosessene for å forstå årsaker og konsekvenser av noen av våre største samfunnsutfordringer og for å løse disse utfordringene. Forskning og utdanning innen biovitenskapens bredde er sentralt for å bidra til en miljømessig og bærekraftig utvikling.

Forskning, utdanning og formidling

IBV skal være ledende innen biovitenskapelig grunnforskning, samt stimulere til at kunnskapen tas i bruk

Forskning ved IBV karakteriseres av banebrytende grunnforskning med stor samfunnsrelevans og gode muligheter for innovasjon. IBV har flere forskningsgrupper som konkurrerer meget godt på nasjonale og internasjonale arenaer for forskningsfinansiering. Samtidig er noen forskningsgrupper ved IBV små og når ikke opp i konkurransen om forskningsmidler. Forskning og utdanning er tett sammenflettet, og det er viktig at IBV har sterke forskningsgrupper i fagområder som dekker instituttets bredde. Det skal tas hensyn til utdanningsstrategiske behov ved rekruttering av faste og midlertidig ansatte, og forskningsstrategiske prioriteringer må være tett koblet til utdanningsbehov.

- IBV skal stimulere til dannelse av slagkraftige, større forskningsgrupper for å heve den generelle kvaliteten på forskningen ved instituttet.
- IBV skal tiltrekke seg kandidater av høy internasjonal kvalitet til faste og midlertidige stillinger.
- IBV skal ha et økt fokus på arenaer for ekstern finansiering. Dette inkluderer også tematiske forskningsområder og innovasjon.
- IBVs forskning skal bidra til en miljømessig og bærekraftig utvikling.
- IBV skal utdanne doktorgradskandidater som evner å drive forskning av høy faglig og etisk kvalitet.
- IBV skal stimulere ansatte til å ta kunnskap i bruk gjennom aktiv utnyttelse av nasjonale og UiOs sentrale støtteordninger.
- IBV skal være involvert i og støtte fakultetets satsing på studentdreven forskning og innovasjon.

Utdanningen IBV tilbyr skal være av høy kvalitet, inspirerende og yrkesrelevant

Biovitenskap må forstås som et sammensatt og dynamisk fagfelt som krever teoretisk kunnskap, praktiske ferdigheter og stadige tilpasning i tråd med samfunnsendringer og forskningsutvikling. IBVs utdanningsprogram skal gjenspeile dette. Målet er å utdanne kandidater med evne til refleksjon og

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problemløsning med fokus på fremtidsrettede, bærekraftige løsninger, spesielt innenfor helse, mat, klima, natur og miljø.

- IBVs utdanningsprogram skal utdanne kandidater med kunnskap og ferdigheter som gjør dem i stand til å tilpasse seg forskningsutviklingen, samt samfunnets og arbeidsgiveres fremtidige behov, innenfor instituttets kompetanseområder.
- Utdanningen skal være forskningsbasert og derigjennom være tett koblet til forskning, både faglig og pedagogisk. Bærekraft, etikk og vitenskapelig dannelse skal stå sentralt.
- IBVs utdanningsprogram skal, samlet sett, dekke biovitenskapens bredde. Bachelorprogram ved IBV skal tilby en bred og solid realfaglig grunnutdanning og gi mulighet for påbegynnende spesialisering. I moderne biovitenskapelig forskning inngår beregninger, modellering og bioinformatikk som viktige komponenter i tillegg til laboratorie- og feltkompetanse**.** Disse komponentene etterspørres også av arbeidsgivere og skal inkorporeres som en naturlig del av bachelorutdanningen.
- Mastergraden skal gi spesialisert og forskningsnær kompetanse, og masterstudenter skal inngå som medlemmer av forskningsgruppene i instituttets seksjoner.
- Instituttet skal samarbeide med andre enheter ved UiO om enkeltemner og utdanningsprogram der det er naturlig, samt bidra i sentrale universitetssatsinger innen utdanning.
- IBV skal bidra til utdanning av høyt kvalifiserte realfagslærere.
- Læringsmiljøet skal være trygt, stimulerende og tilfredsstille studentenes fagsosiale behov. Det skal være bredt anerkjent i samfunnet, og dette skal bidra til at studenter velger IBV.

IBV skal på en optimal måte utnytte lokal, nasjonal og internasjonal infrastruktur for å drive forskning og utdanning av høy kvalitet

IBV er vert for flere nasjonale og lokale infrastrukturer som er viktig for forskning og utdanning ved IBV og andre institutter ved Universitetet i Oslo. Det er viktig at IBV også i fremtiden forvalter infrastruktur som støtter opp om mål for forskning og utdanning. Samtidig er det ikke hensiktsmessig at IBV dupliserer infrastruktur som forskerne har enkel og rimelig tilgang til andre steder.

Det nye livsvitenskapsbygget ved UiO vil samle flere avanserte vitenskapelige forskningsinfrastrukturer som i økende grad benyttes av forskningsmiljø innen IBVs faglige bredde. Livsvitenskapsbygget vil være en sentral arena for forskning innen biovitenskap i Osloregionen og IBV skal aktivt delta og fremme faglig konvergens.

- IBV skal delta i og utnytte potensialet i kjernefasilitetene i livsvitenskapsbygget.
- IBV skal understøtte infrastruktur som ikke er tilgjengelig ved andre enheter lokalt eller nasjonalt, eller hvor slik infrastruktur må ha nærhet til forskerne.
- Infrastruktur ved IBV skal kobles til forskningsgrupper som tar i bruk eller utvikler teknologien i forskningsfronten.
- IBV skal støtte opp under infrastruktur som benyttes til bærekraftsrelatert forskning og utdanning.

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IBV skal være en sentral og synlig aktør i samfunnsdebatten og kommunisere relevant kunnskap innen biovitenskap som samfunnet trenger for å ta kunnskapsbaserte valg og møte bærekraftsmålene

Biovitenskap er av stor betydning for samfunnsutviklingen, og instituttet har et ansvar i å formidle ny kunnskap innen biovitenskap til samfunnet og legge til rette for at beslutningstagere tar informerte beslutninger. God og aktiv formidling forventes å ha en positiv effekt på rekruttering av studenter og nyansatte, og for etablering av samarbeid med nasjonale og internasjonale forskningsinstitusjoner, offentlig sektor og industri.

- IBV skal etableres som en merkevare som assosieres med Norges ledende miljø for biovitenskap.
- IBV skal ha en systematisk og utadrettet formidlingsvirksomhet der ansatte skal stimuleres til å formidle sine forskningsresultater, bistå media som fageksperter og delta i den offentlige debatten.
- IBV skal utnytte skolelaboratoriet som brobygger mellom skole og universitet.
- Skolelaboratoriet ved IBV skal utvikle og fremme god biologiundervisning for samfunnets og naturens beste, profilere virksomheten og inspirere ungdom til videre studier innenfor biovitenskap.

Organisasjon

IBV skal være en inkluderende arbeidsplass som fremmer tilhørighet og lojalitet og som studenter og ansatte er stolte av å være en del av

Arbeidsmiljøet ved IBV skal oppleves positivt blant alle ansatte. Et godt arbeidsmiljø kjennetegnes av respekt for individer, alle fagområder og yrkesgrupper. Det skal stimulere til samarbeid og faglig utvikling hos ansatte og legge til rette for utvikling av nye ideer og konsepter. Arbeids- og læringsmiljøet skal være under kontinuerlig evaluering og forbedring. Ansattes og studenters like rettigheter og muligheter uavhengig av kjønn, funksjonsevne, seksuell orientering, alder, etnisitet og religion skal gjennomsyre og ligge til grunn for alle prioriteringer og aktiviteter ved IBV.

- Alle ansatte ved IBV skal gis mulighet til å utvikle sin profesjonelle kompetanse.
- Ansatte i rekrutteringsstillinger skal tilbys karriererådgivning og mulighet for å utvikle en karriere innen eller utenfor akademia, inkludert tilgang og støtte til kompetansehevende tiltak.
- Ansatte i førsteamanuensisstilling skal tilbys veiledning og mulighet for å kvalifisere for professorkompetanse.

Beslutningsprosesser skal være åpne og baseres på synlige kriterier for prioriteringer. Ansatte skal ha mulighet til å være involvert i diskusjoner om retningslinjer og behov for å møte samfunnsoppdragene.

- IBVs ledere på alle nivåer må forholde seg til dynamiske krav og behov fra omverden og bidra til endringer som imøtekommer instituttets behov og utfordringer.
- IBV skal ha ledere på alle nivåer som støtter instituttets verdier og ambisjoner og streber etter å bruke våre ansattes talenter, og kvalifikasjoner på beste måte for å møte samfunnsoppdragene.

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IBV skal komme i økonomisk balanse

IBV har et økonomisk merforbruk som vil påvirke mulighetene til strategiske satsinger og investeringer i årene som kommer. For å oppnå balanse må kostnader reduseres og inntekter må økes.

- Kostnader skal reduseres gjennom forbedring av økonomistyringen ved instituttet og optimalisering av ressursbruk i forskning, undervisning og administrasjon.
- Inntekter skal bli bedre gjennom økt ekstern finansiering, bedre inntjening fra kjernefasiliteter og økt rekruttering og minsket frafall av studenter.

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Forskningsrådet

Evaluation of Life Sciences 2022-2024

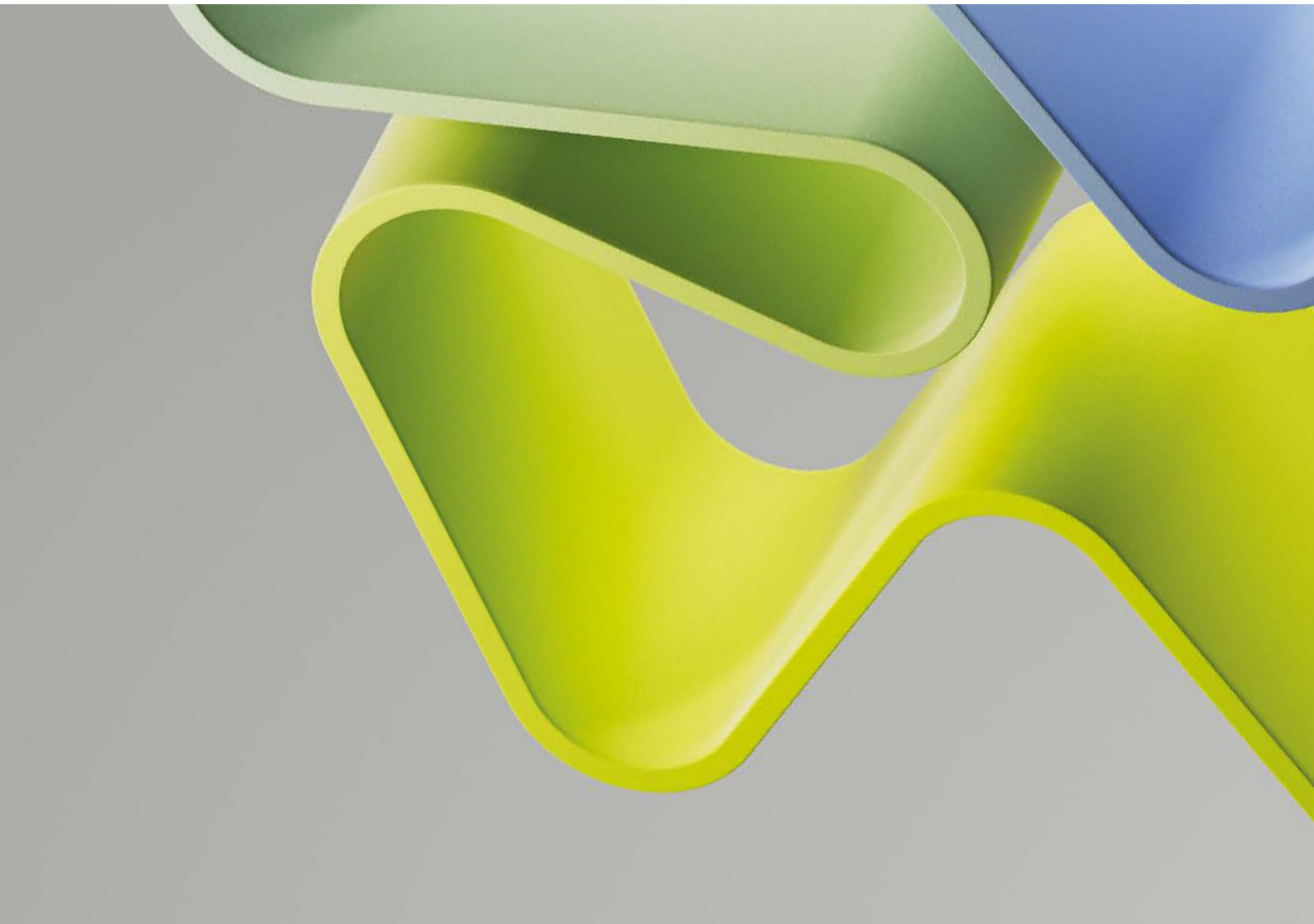
Evaluation of Biosciences 2022-2023

Evaluation report

Department of Biosciences (IBV)

University of Oslo (UiO)

December 2023



Contents

Statement from Evaluation Committee 2

This report is from Evaluation Committee 2 which evaluated the following administrative units representing the higher education sector in the Evaluation of Biosciences 2022-2023:

- Faculty of Bioscience (BIOVIT), Norwegian University of Life Sciences (NMBU)
- Faculty of Chemistry, Biotechnology and Food Science (KBM), NMBU
- Faculty of Biosciences and Aquaculture (FBA), Nord University (Nord)
- Department of Biotechnology and Food Science (IBT), Norwegian University of Science and Technology (NTNU)
- Computational Biology Administrative unit (CBU), University of Bergen (UiB)
- Department of biological sciences (BIO), UiB
- Department of Biosciences (IBV), University of Oslo (UiO)
- Department of Chemistry, Bioscience and Environmental Engineering, University of Stavanger (UiS)
- Faculty of Biosciences, Fisheries and Economics (BFE), University of Tromsø – The Arctic University of Norway (UiT)

The conclusions and recommendations in this report are based on information from the administrative units (self-assessment), digital meetings with representatives from the administrative units, bibliometric analysis and personnel statistics from the Nordic Institute for Studies of Innovation, Research, and Education (NIFU) and Statistics Norway (SSB), and selected data from Studiebarometeret and the National Teacher Survey (Norwegian Agency for Quality Assurance in Education [NOKUT]). The digital interviews took place in Autumn 2023.

This report is the consensus view from committee 2. All members of the committee have agreed with the assessments, conclusions and recommendations presented here.

Evaluation committee 2 consisted of the following members:

Professor/Dean
Ivo Sbalzarini (chair),
TUD Dresden University of Technology
& Max Planck Institute of Molecular
Cell Biology and Genetics

Professor
Caroline Austin,
Newcastle University

Professor/Pro-Dean
Ade Whitehouse,
University of Leeds

Professor/Deputy Dean
Lena Mäler,
Stockholm University

EM. Professor/Director
Nico P.E. Vermeulen,
Vrije Universiteit Amsterdam

EM. Professor/Director
Lene Lange,
Technical University Denmark

Adjunct Professor, dr.
Pikka Jokelainen,
Statens Serum Institut

Dr Anoushka Davé, Principal Consultant, Technopolis Group, was the committee secretary.

Oslo, December 2023

Profile of the administrative unit

In 2021, the Department of Biosciences (IBV) had a total of 338 employees, out of which 53 were professors/associate professors, 91 postdocs/researchers, 65 PhD students, 38 technicians, 30 administrative staff and 61 emeriti/guest researchers. The share of women was high among PhD students (71%), but low among professors and associate professors (34%).

IBV is comprised of five research groups: Section for Aquatic Biology and Toxicology (AQUA), Section for Biochemistry and Molecular Biology (BMB), Section for Genetics and Evolutionary Biology (EVOGENE), Section for Physiology and Cell Biology (FYSCELL) and Centre for Ecological and Evolutionary Synthesis (CEES).

In its self-assessment, IBV states that it aims to strengthen its research position as a leading research department nationally and to increase the number of internationally leading research groups. IBV indicates that the internationally leading research groups will receive support to maintain their position, and research groups with a realistic chance, and ambition, to reach the top international level within 3-5 years will also be actively supported. IBV also has ambitions to attract candidates of international quality to permanent and temporary positions, including for prioritised recruitment to maintain the impact of internationally leading research groups that are highly successful in bringing external research funding. At the same time, IBV also plans to use internal resources to strengthen the ability of smaller research groups that currently attract comparatively less external funding to obtain more external grants and reach their scientific potential. In recent years, researchers at IBV have been very successful in obtaining European Research Council (ERC) starting grants and Research Council of Norway (RCN) young investigator grants and a desire to develop attractive support for these researchers to continue their work at IBV is articulated in the self-assessment.

As a higher education institution (HEI), IBV strives to follow the four overall goals for HEIs that receive public funding: high quality in research and education; research and education for welfare, value creation and innovation; access to education; and efficiency, diversity, and solidity of the higher education sector and research system. The self-assessment mentions that as a university department, IBV’s main sector-specific objectives are research, education, outreach, and to some extent, innovation. The administrative unit’s strategy is rooted in the view that the university sector has a particular responsibility for protecting and pursuing curiosity-driven basic research, thereby contributing to the knowledge base in general. The majority of IBV’s research activities fall in this category, and "impact" is measured in terms of the international status of its researchers, quality of publications and success in competitive national and international grant programmes.

Based on its self-assessment, in the future IBV might take advantage of its established infrastructure, including not only facilities for high-resolution imaging, long-read sequencing, and proteomics, but also the research vessels and alpine and marine research station which are important for the training of students. In addition, IBV sees opportunities in identifying basic research components as integral parts of applied research (with more funding available for applied research), pursuing lines of research related to sustainability and involving end users in research especially for calls focussing on innovation and societal impact.

Overall assessment

The Department of Biosciences at the University of Oslo (UiO-IBV) is performing high-quality research in a diverse range of areas to understand fundamental biological processes spanning the molecular and cellular level through to the population and ecosystem level. A clear ambition in the strategy is to strengthen the administrative unit's research position as a leading national research department and to increase the number of international leading research groups within the administrative unit.

The overall assessment considering the Terms of Reference provided by the Unit is therefore that the administrative unit has performed well overall. However, upon evaluation, it is clear some research groups are performing better than others in regard to productivity and attracting external funding. Some groups are clearly at the international research front and have the potential to be world leading. A clear vision is required to strengthen the less productive groups and develop more synergies between the research groups, as well as across the institution. This will provide critical mass for attracting larger interdisciplinary strategic grants and societal impact addressing grand challenges.

A particular strength of the administrative unit is its core facilities, which have been successful in obtaining substantial support to lead national infrastructures. These facilities are key in maintaining IBV's national and international profile and international recruitment policy. It clearly constitutes a strong advantage for the administrative unit, and ongoing research should capitalise on these infrastructures. However, a challenge will be to maintain, fund, and further develop these infrastructures in the future.

A key part of the IBV strategy is to pursue curiosity-driven fundamental research. However, a challenge for the administrative unit is to adapt to changes in external funding calls focussed more on applied research, whilst maintaining their excellent research base. Here, IBV needs to establish a clear impact and innovation strategy to take full advantage of the opportunities to strengthen the societal impact provided by the excellent fundamental research undertaken.

IBV has a strong reputation in teaching and offers both inspiring and occupationally relevant education. Moreover, IBV should be highly commended on its research culture and support programme for early career researchers. The professional development plan for postdoctoral researchers is highly effective to help in career progression. This sets the administrative unit apart from many other institutes.

Recommendations

The evaluation committee wishes to extend the following recommendations to the administrative unit, which are constructive suggestions from an outside view on the basis of the information available to the committee and considering the aspects on which recommendations were requested in the terms of reference.

- A clear strategic vision is required to organise research groupings to enhance communication and collaboration between groups. This should be aligned with a future recruitment policy to foster synergy between research groups and take advantage of institutional and cross-faculty initiatives.
- Install a scientific advisory board composed of international researchers from both academia and industry to enhance external perspective and provide vital input on strategic decisions.
- Develop a funding strategy to maintain infrastructures and facilities, which includes a pro-active strategy to future-proof cutting-edge technology.
- Given the movement to more applied research by funders, a strategic plan is required to maximise impact and the translational potential of the excellent fundamental research being undertaken at IBV. The goal is to enable the administrative unit to continue funding its basic research, which should by all means persist as an innovation advantage for any application.
- Establish an IBV-specific mentoring scheme providing advice and seed funding opportunities for academics who wish to explore translational opportunities. Install an industrial advisory board to provide feedback on strategic decisions.
- Develop a clear vision for societal impact for the administrative unit and research groups.
- Develop a strategy for future recruitment, seek guidance from the international scientific advisory board to formulate key areas.
- Maintain efforts and initiatives to further enhance diversity and equity.
- Maintain and promote approaches to enhance research culture and the support programmes for early career researchers, which is successful in enabling them to attract external funding.
- Maintain the current sabbatical system, where academics are granted one year research and educational leave after six years of service, or six months leave after three years of service.

1. Strategy, resources and organisation of research

The administrative unit has five independent research groups covering a wide range of topics. An effective administration structure is in place, with each research group led by a section leader, responsible for coordinating and overseeing research activities and teaching. This structure has resulted in some research groups being highly effective and internationally competitive, while others may benefit from stronger interactions with other groups and across the institution. An integrated research vision will help drive more synergy between the research groups and provide the critical mass for addressing grand challenges, attracting large strategic grants and increasing the societal impact of IBV research as a whole. The administrative unit has a clear strategy to enhance research culture and the support programme for early career researchers is excellent. A strength of the administrative unit is the infrastructure and core facilities, enabling researchers to be highly integrated across Norway and internationally visible. Maintaining this infrastructure on solid financial basis, as well as investing in new technology will be a challenge, and a clear strategy for longevity is required. Going forward, the administrative unit faces challenges to maintain and increase internationally visibility, external funding and hiring talent of international quality given the movement to applied research by funders. Maximising impact and the translational potential of the excellent fundamental research being undertaken at IBV will be essential, while maintaining the basic research to make this strategy sustainable. The establishment of an international scientific advisory board, with academic and industrial representation, will help in the development of the research strategy and vision beyond the 2020-revisited document.

1.1 Research Strategy

The current research strategy for the administrative unit is a working document entitled “Department of Biosciences (IBV) – Strategy 2020 revisited. It has a strong focus on highlighting the current strengths of IBV in its diverse research activities, focussing on understanding the fundamental biological processes from molecular and cellular level to population and ecosystem level. The administrative unit understands the importance of strengthening collaborations across disciplines to deliver on the UN sustainable development goals that affect all sectors of society. This will also be aligned with a focussed recruitment policy and project development. This is essential going forward.

A clear aim in the strategy is to strengthen the administrative unit’s research position as a leading national research department and to increase the number of internationally leading research groups within the department. This will involve focussed support for research groups to maintain their international position and support research groups with a realistic chance, and ambition, to reach a high international standard within 3-5 years as well as recruiting international quality candidates.

The administrative unit provides an excellent research environment. An example of good practice is the planned use of internal resources to strengthen research groups’ ability to obtain external grants and reach their scientific potential. IBV should be commended on its research culture and support programme for early career researchers, which is clearly effective with young researchers successfully obtaining ERC starting grants and young investigator grants from RCN. The professional development plan developed for all postdocs at IBV is highly effective to help in career progression.

A key part of the IBV strategy is to protect and pursue curiosity-driven fundamental research, thereby contributing to the knowledge base. However, a key challenge and risk for the future research strategy is to adapt to changes in external funding calls focussed more on applied research. The administrative unit aims to maximise institutional and cross-faculty initiatives to instil a more innovative research culture which will provide future funding opportunities and increased impact of IBV research.

1.2 Organisation of research

IBV was formed in 2013 by merging the Department of Molecular Bioscience with the Department of Biology. The resulting administrative unit is organised in five research sections/groups: Aquatic biology and toxicology (AQUA), Biochemistry and Molecular Biology (BMB), Centre for Ecological and Evolutionary Synthesis (CEES), Genetics and Evolutionary Biology (EVOGENE), and Physiology and Cell Biology (FYSCELL).

The administrative unit is the only biological sciences department at the University of Oslo. This enables them to cover a diverse range of research topics from fundamental biochemistry to ecosystems, as well as ensuring education along the broad teaching remit.

Each research group is led by a section leader responsible for coordinating and overseeing research activities and teaching. The 50:50 research:teaching time split provides a good environment for research activity. Professors and associate professors are responsible for supervising MSc students and PhD candidates, as well as mentoring postdoctoral fellows and securing external funding.

IBV is considering how best to adapt to changes in the funding environment and it is recommended that the administrative unit develops a clear strategy for increasing funding from both university initiatives and external strategic priorities. The diverse research portfolio should allow the administrative unit to increase the share of external funding. To enable this, the administrative unit should enhance networking across the university and establish an international scientific advisory board, including industrial representation, that can inform and inspire a clear strategic vision and the corresponding organisational structure.

It is important to develop more synergies between the research groups to provide the critical mass for attracting large strategic grants. It is encouraging to see some plans are in place, exemplified by the current planned recruitment of a research leader to coordinate research activities between the groups and with other faculties. This is highly recommended and encouraged and should be expanded to other faculties to enhance interdisciplinary research areas to target various grand challenges.

It is also recommended that the administrative unit leverages its excellent reputation to become more visible internationally, which will help to attract talent at all career levels and identify key members for the advisory board.

1.3 Research funding

IBV currently has approximately 35% external funding. Of the 278 million NOK in the annual budget in 2021, approximately 99 million NOK were obtained from external competitive grants and 179 million from basic university funding. This documents a solid track record in attracting third-party funding from national and international sources, but it is still relatively low as per international comparison.

A key strength of IBV, as stated in the next section, is the core facilities hosted in the administrative unit, which have been successful in obtaining substantial support for instrumentation for national infrastructures. However, a solid financial basis for these facilities must be ensured to maintain their competitive advantage.

IBV sees it as a serious threat that both the ministry and RCN are moving from basic funding towards more applied research. A concern is that reducing funding for basic research will erode the educational and scientific basis for being able to perform applied research. Combined with the fact that core funding is predicted not to increase in the coming years, shifting the ratio towards more external funding is essential for the success of the administrative unit. It is encouraging to highlight that a number of young investigators have been successful in attracting significant external funding, such as ERC starting grants, and this should be encouraged more widely.

1.4 Use of infrastructures

Oslo provides excellent research infrastructure and facilities for IBV staff to undertake their research, several in a national perspective. These include:

(i) Norwegian Molecular imaging Consortium (NorMIC) facility, which is part of the Oslo BioImaging Hub developing advanced IT infrastructures for image processing and storage. NorMIC is also a partner in the national imaging initiative, as well as Euro-Bioimaging.
(ii) The proteomics facility is part of the National network of Advanced Proteomics Infrastructure (NAPI) and provides a service and also drives independent research on method development.
(iii) The Norwegian Sequencing Centre (NSC) is a national facility offering NextGen sequencing facilities. NSC is member of the national hub-node sequencing structure, NorSeq.

A strength of these facilities is that they are highly integrated across Oslo (including hospitals) and across Norway. This is enabling access to large integrated infrastructure calls. The administrative unit contributes substantially to the maintenance and running cost of several core facilities. However, not all of the infrastructures have external funding. The administrative unit will therefore need to prioritise where investment is made. It is clear the administrative unit is starting to develop a strategy for this, for example, closing down a small animal facility and enabling access to a larger facility at the medical site.

Overall, IBV is ideally situated and involved in the distributed research infrastructure in Norway, originally initiated by the FUGE (research in functional genomics) strategy and funding activities as a well-functioning system. It is clear the goal of the administrative unit is to build facility collaboration rather than compete, which is closely aligned with the national FUGE strategy and should be supported. It clearly constitutes a strong advantage for the administrative unit, and ongoing research should capitalise on these infrastructures. A key aim is to preserve and further develop these cutting-edge infrastructures in the future.

1.5 National and international collaboration

IBV aims to maintain its research position as an internationally leading research institution and as such is highly collaborative at the national and international level. This is clearly helped by the participation of IBV in several international infrastructures. For example, NorMIC is a part of the Euro-Bioimaging platform. Strong international links are evident, particularly with leading European centres. For example, with the European Molecular Biology Laboratory (EMBL). Several IBV Professors are associate investigators at the Centre for Molecular Medicine Norway (NCMM), an EMBL Outstation, and have ongoing collaborative activities. IBV researchers are also part of the European Molecular Biology Organization (EMBO) young investigator network and collaborations with the European Synchrotron Radiation Facility (ESRF). This clearly helps with international recruitment and should be pursued further.

On a national scale, IBV is an active partner in multiple initiatives. For example, IBV contributes to the Norwegian shared data storage facility that includes several Norwegian European Strategic Forum on Research Infrastructures (ESFRI) initiatives, including ELIXIR and E-infrastructure E-INFRA at UNINETT Sigma 2, a national e-Infrastructure for science, including large-scale sequencing storage and simulation of 3D models. The administrative unit is also an active partner of the Nansen Legacy, the initiative for Norwegian collaborative arctic research, which includes contributions to climate and ecosystem change research, future marine resources and understanding physical processes to living resources, as well as the Svalbard Integrated Arctic Earth Observing System.

Internationalisation is deeply rooted in IBV research culture, emphasised by successful grant applications and shared authorships with researchers from other institutions nationally (54% of publications in 2021 had national co-authors) and abroad (72% of publications in 2021 had international co-authors). It is highly recommended that IBV continues to develop large collaborative networks, which benefits IBV’s research and external profile. To this end, IBV should encourage and

support research exchange visits for all categories of scientists. This could be supported through Marie Curie and ERASMUS initiatives, as well as internal travel grants.

In addition to collaborations with academic institutions, academics within IBV have ongoing collaborations with applied research institutes and industry; e.g. Norwegian Institute of Food, Fisheries and Aquaculture Research (NOFIMA), Institute of Marine Research, Simula Research Institute, the knowledge bank for natural diversity (Artsdatabanken), the Norwegian Institute of Bioeconomy Research (NIBIO), Graminor ASA (the Norwegian breeder for the agricultural and horticultural industry), MYCOTEAM AS (biological pest prevention) and the Norwegian Biotechnology Advisory Board.

1.6 Research staff

IBV has 53 full or associate professors. The official distribution of their working time is 47% research, 47% teaching and 6% administration. However, teaching duties vary between 20-40%. Group size for most research groups is between 3-6 members, while some are larger with substantial funding. However, it is recommended that smaller groups (less than 3) should integrate with larger, complementary research groups to fully reach their scientific potential. It is also recommended that IBV maintains its sabbatical system, where academics are granted one year's research and educational leave after six years of service, or six months' leave after three years of service.

IBV has a relatively large postdoctoral researcher cohort of 91. However, there are much fewer PhD candidates (65). This seems unusual and could be a sign of funding or hiring difficulties.

IBV should be highly commended on its research culture and support programme for early career researchers, providing appropriate career and generic skillsets. They are also supported by an effective EU team, which provides application guidance towards ERC and other external funding possibilities (e.g. RCN’s Young Research Talents). This is excellent. In addition, there are multiple options for international research visits.

The professional development plan developed for all postdocs at IBV is highly effective to help in career progression.

2. Research production, quality and integrity

Each of the five research groups of the administrative unit have been evaluated by expert panels, whose evaluation summaries and performance scores are are reproduced below after a spelling and language check. Most groups rank highly and are very competitive. The number of scientific publications for IBV has remained fairly constant between 2016-2021. However, the mean normalised citation score has decreased in the last few years. Publications range from impactful multidisciplinary journals to more subject-specialised journals. They include a high percentage (72%) with international co-authors, which is excellent. The administrative unit is recommended to think of ways to increase the impact and quality of the scientific output from certain research groups, which in turn will enhance their international visibility and reputation.

The administrative unit should find ways to strengthen aspects of certain groups’ societal impact dimension scores (research group’s societal contribution/user involvement). It is noticeable that these scores ranked lower than other categories for several groups. The group structure should include more interdisciplinary approaches required to address larger research topics and grand challenges. This could be through incentives for cross-group activities to leverage more synergy between groups and shared projects.

The administrative unit has guidelines in place for research integrity, in line with the university regulatory framework. It is encouraging that the University of Oslo has instigated recognised standards for research ethics and research integrity, with courses available for academic staff and mandatory courses for PhD candidates.

2.1 Research quality and integrity

Aquatic biology and toxicology (AQUA) research group – overall assessment by expert panel 2

Based on the available information, the panel find the AQUA group to have an organisational environment that is adequate but not excellent and that it supports the production of very good research. The quality of the research is recognised nationally and internationally. This group performs some interesting, high-quality research and makes an excellent contribution to advanced training, both PhD and post-doctoral (although clearer career development measures would have strengthened this aspect). However, the societal impact dimension is limited.

Dimensions	**Score**
Organisational dimension	4
Quality dimension (Research and publication quality/Research group's contribution)	4/4
Societal impact dimension (Research group's societal contribution/User involvement)	3/2

Biochemistry and Molecular Biology (BMB) research group – overall assessment by expert panel 4b

The UiO-BIO BMB is a strong group with focus on scientific excellence and innovation. The group is a cluster of seven independent research groups: the principal investigators (PIs) are highly acknowledged internationally for their research, and their research groups are among the top laboratories in their fields. Governance, common strategy, and common identity of the group could be better formulated.

The scores across the dimensions are balanced and reflect a balanced overall performance and contributions of the group. The organisational environment is very strong for supporting the production of excellent research. The Proteomics Facility is a key asset. The group has been successful in securing external funding, however, most of the funding is national. The research and publication quality are internationally excellent in terms of originality, significance, and rigour. Several discoveries and scientific contributions are impressive at a global level. There is a strong focus on innovation and on producing outputs: publications, applications, and patents. Major societal contributions of the group include research-based teaching and research findings that are important to health.

Dimensions	***Score***
Organisational dimension	*4*
Quality dimension (Research and publication quality/Research group's contribution)	*4/4*
Societal impact dimension (Research group's societal contribution/User involvement)	*4/4*

Centre for Ecological and Evolutionary Synthesis (CEES) research group – overall assessment by expert panel 3

The CEES group has an outward facing world-leading contribution to ecology and evolution. Its strategic goals are well mapped to its outputs. The group has national and international significance and will continue to command research in ecology and evolution in Norway. However, the continued success of CEES will require (i) diversifying group structures with a better focus on equality/diversity inclusion criteria at all levels and (ii) diversifying the portfolio of funding.

Dimensions	***Score***
Organisational dimension	*5*
Quality dimension (Research and publication quality/Research group's contribution)	*5/5*
Societal impact dimension (Research group's societal contribution/User involvement)	*4/4*

Genetics and Evolutionary Biology (EVOGENE) research group – overall assessment by expert panel 4a

The organisational dimension of this group is exceptional, helping foster the above-standard range of outputs as well as mobility and career development. The group's aims are to be clearly situated on the international stage and this was evident in the report in terms of collaborations, papers, research projects and leading roles in international consortia. The basic scientific work is published in broad impact journals with quality that is recognised at the highest international standards in terms of originality, significance, and rigour. The research quality is outstanding, and the group was determined to have played an outstanding role in the research process.

While the funding is strong and also the success in attracting competitive funding at the national and EU level, the cooperation with the private sector / companies could however be strengthened. This would also increase the societal impact, which was noted to be very considerable, given what is expected from groups in the same research field, but where the societal partners have a lower than desirable degree of involvement in the research process. Determining a strategy to grow and develop greater impacts seems in line with the aims of the group and could be achieved.

Dimensions	***Score***
Organisational dimension	*5*
Quality dimension (Research and publication quality/Research group's contribution)	*5/5*
Societal impact dimension (Research group's societal contribution/User involvement)	*4/3*

Physiology and Cell Biology (FYSCELL) research group – overall assessment by expert panel 4b

This group stands out for their honesty and achievements. The group has produced a generally thorough and comprehensive research assessment, which speaks to their commitment to training, sharing, and engaging. They have also identified their weaknesses and opportunities for further development. The group comes across as balanced and collaborative. It has fostered a supportive research culture as well as a healthy symbiotic relationship with their institution. Multiple examples speak to their commitment to training and supporting early career scientists as a collective rather than within individual research groups. This maximises the international exposure and interdisciplinary training of early career scientists. Emphasis is placed on nurturing scientists who will not only become excellent scientists, but also responsible and sharing lab citizens.

The group's management and governance were less clearly articulated. Their funding portfolio is good, but there may be further opportunities to secure, for example, EU funding, particularly in light of their research output and international collaborations. Available infrastructure makes their research cutting edge and internationally competitive. Their research output is solid and diverse yet cohesive overall. The group is committed to engaging with the wider society and are approaching this in original ways, for example by seeking to break silos between life scientists, sociologists and philosophers.

Dimensions	**Score**
Organisational dimension	4
Quality dimension (Research and publication quality/Research group's contribution)	5/5
Societal impact dimension (Research group's societal contribution/User involvement)	4/4

2.2. Open Science

The administrative unit follows the University of Oslo's open access policies, making all research articles openly available through the institutional repository, which is mandatory for employed staff.

This also applies to research data and data sharing which is in line with international standards. In 2021, only 8% of publications were not open access, 92% of publications were open access (51% gold open access and 41% green open access). It is encouraging to see institutional initiatives for data sharing such as European Open Science Cloud (EOSC) and compliance with FAIR principles (Findable, Accessible, Interoperable, and Reusable). The university has also developed a service for sensitive data (TSD) where researchers can collect, store and analyse sensitive research data in a secure environment. This is clearly state-of-the-art also in an international comparison.

3. Diversity and equality

The administrative unit follows active institutional policies and plans for diversity, gender equality and inclusion. It is encouraging to see that the Faculty has established its own basic values for gender equality and diversity in research, which are rooted in the institutional action plan. It is clear that gender balance and gender equality are being addressed through initiatives such as the RCN-funded FRONT project.

The highest gender imbalance (90% male) is among senior academics >50 years old. However, it is encouraging that IBV have recognised this issue over the last 10 years and recruitment initiatives have led to a small majority of female academics below 50 years of age. There is also a gender imbalance among PhD students, with 71% females, with a similar imbalance also among the BSc and MSc students.

IBV has invested in extensive career programmes for its female members – e.g. the "Pick a few and tell them" programme, where an impressive 8 out of 8 talented females now have permanent research positions. These types of initiatives are key with the current recruitment freeze and challenging economic situation.

Progress is also being made in recruiting young researchers and students from many different types of talent and societal backgrounds, including varied domestic and international recruitment. 46% of IBV staff are from outside Norway, with 15% non-European. Most PhD candidates are international, whereas MSc students are mostly domestic.

4. Relevance to institutional and sectorial purposes

The administrative unit aims to strengthen its position as a leading research department in biosciences, both nationally and internationally. Its main sector-specific objectives are research, education, outreach and, to a limited extent, industrial innovation. A key part of the IBV strategy is to protect and pursue curiosity-driven fundamental research, thereby contributing to the knowledge base. As such, the majority of IBV research activity falls into this category. Impact is measured by prestige, quality of researchers, publications, and grant income. However, a real concern and risk for IBV is that funders move from basic towards more applied research.

A key recommendation is that IBV needs to evolve to close the gap between fundamental research and innovation, by establishing a clear impact and innovation strategy with the help of an external industrial advisory board. There are pockets of innovation within research groups, indicated by some strong impact cases. However, a clear strategy needs to be put in place for academics to maximise impact and applied research opportunities through industrial and commercialisation opportunities and small and medium-sized enterprise (SME) interactions. Stronger cross-faculty interactions with the Life Science Growth House (Growth House) are encouraged to instil a stronger innovation culture.

An IBV specific mentoring scheme should be instigated to provide advice for academics who wish to enter this innovation arena, as well as targeted seed funding to enhance potential industry interactions. It is encouraging to see these types of initiatives are being explored and there is institutional support for Technology Transfer opportunities, as well as a new Science Park adjacent to the University for new start-ups. IBV must take full advantage of these opportunities.

IBV has a strong reputation in teaching and offers both inspiring and occupationally relevant education. It is encouraging to see that educational programmes are incorporating knowledge and skills relevant for employers, and is also research-orientated. This ensures holistic and sustainable development of students. IBV provides training for a large cohort of students (about 600 divided into undergraduate and graduate levels in addition to 50-80 PhD students). IBV has established two BSc courses focusing on work and research experience. MSc students are fully integrated into research groups, providing excellent hands-on education, and some opportunities for BSc students to be involved too. This is innovative and should be extended. The overall number of PhD students relative to academics is fairly low, however.

IBV is strong in dissemination of bioscience, which is key for students and employee recruitment, career development as well as funding opportunities. It is encouraging to see active engagement from IBV staff in several different outreach and communication aspects from debates to writing children's books. In addition, IBV interacts well with policy makers and has representation on research boards and government bodies in many areas of the biosciences. This is excellent and should be encouraged.

5. Relevance to society

IBV research has high societal relevance contributing to a wide range of topics covering management of natural resources, sustainable food production and future production of clean energy. Understanding of basic molecular mechanisms of diseases will also aid in the development of new therapeutic strategies and for the understanding of species variation and interaction. A future aim for IBV is to position itself as a leader for climate change research and a recruitment drive in this area is ongoing. This is a good strategy.

IBV research directly contributes to addressing grand challenges, this is aligned with the institutional strategy to support projects addressing the UN sustainability goals. Of note, the administrative unit has developed an exciting collaboration with the Department of Geoscience and Chemistry to establish the Centre for Biogeochemistry. This is of high societal relevance given the pressing need to predict changes in global carbon cycling, a crucial requirement to develop strategies to counter anthropogenic climate change.

As mentioned in section 4, IBV is recommended to extend and drive ongoing plans to bridge the gap between well-founded fundamental research and translational/applied research. This will enhance the administrative unit's ambition to have a coherent approach to applied research and support more collaborative work with industry. More interactions with the Life Science Growth House (Growth House) will help establish more start-ups, which could provide an attractive alternative career path for researchers and graduates.

Comments on impact case 1 – Extending the serum half-life of IgG therapeutics and albumin-fused biologics

Most proteins in the blood degrade quickly – In contrast, IgG and albumin are highly stable. Underpinning research has led to elucidating the mechanisms of protein stability due to the binding of FcRn, which regulates serum half-life and biodistribution via cellular recycling or transcytosis.

These findings have been applied to the design of antibody and albumin molecules with tailored FcRn binding and transport properties for use as therapeutics. Underpinning work and applications are detailed in several high-impact papers; including Grevys et al., J Immunol 2015; Andersen et al., Nat Comms 2012 and Grevys et al., Nat Comms 2017.

These findings and their applications have potentially very high impact in drug development as exemplified by multiple industrial collaborations, including licensing by a large international drug development company, for use in therapy against inflammatory bowel disease. In addition, the research has resulted in launch of the Veltis® technology, which allows any drug to be genetically

fused or conjugated to engineered albumin variants to extend their half-life. The administrative unit should make sure it gets its fair share of the return and not undersell its contribution.

Comments on impact case 2 – Chronic Wasting Disease (CWD) management

The discovery of chronic wasting disease (CWD) in reindeer in 2016 in Norway was the first case of the infection in Europe. CWD is a contagious and lethal prion disease in cervids and the geographic expansion of CWD into Europe represents a significant biodiversity and economic concern.

A PI from the administrative unit has played a key role in the flow of data, analysis and leading research and development of novel surveillance tools for CWD. This has also involved the instigation of a proactive hunting surveillance system with the aim of early disease detection that simultaneously avoids undesirable population decline by targeting demographic groups with a higher likelihood of being infected and a lower reproductive value (published in Nature Comms, 2020).

This proactive hunting surveillance reached 99% probability of freedom from infection (<4 reindeer infected) within 3–5 years, in comparison to around 10 years using ordinary harvest surveillance. As such, this is an important impact case study which could be relevant for other diseases and surveillance systems. Further applications should be explored to widen the remit of this approach.

Comments on impact case 3 – The Norwegian Sequencing Centre (NSC) as a national resource in COVID-19 whole genome sequencing

The Norwegian Next Generation Sequencing (NGS) centre was established in 2009 with the Centre for Ecological and Evolutionary Synthesis (CEES, IBV, UiO) and the Ullevål Hospital (under the Oslo University Hospital (OUS) as the first sites in Norway. The centre was involved in multiple sequencing projects and development of applications. The centre has now been extended by the establishment of NorSeq, the national sequencing consortium. The centre has had a large impact on Norwegian science exemplified by >1000 publications based on data generated by NSC in the period 2009 – 2022.

The importance and impact of the NSC as a national resource was highlighted by its pivotal role in the COVID-19 pandemic. NSC has sequenced over 80,000 COVID-19 genomes (90% of all COVID sequencing in Norway), allowing Norwegian health authorities to monitor the evolution of the pandemic in terms of new virus variants. This resource needs to be maintained and is well placed to help if another pandemic arises.

Comments on impact case 4 – Discovery of a muscle memory altered the World Anti-Doping Agency (WADA) anti-doping code

Underpinning research is based on identifying a novel cellular memory mechanism residing in the muscle cells. Specifically, work shows that episodic treatment with steroids induced large fibres and more myonuclei. These extra myonuclei were not lost and when subjected to overload exercise at a later date, even after steroid use had been removed, they grow much faster than controls. These findings were published in a seminal paper – Egner et al., Journal of Physiology, 2013 – and reported more widely in scientific journals.

This is an excellent and highly important impact case, detailing long-lasting muscle memory after testosterone administration. It has high societal impact as the findings have led to international policy change by WADA, extending the maximum exclusion time from 2 to 4 years for anabolic androgen steroid (AAS) abuse.

Comments on impact case 5 – Coastal Marine Protected Areas (MPAs) and management of coastal resources

Coastal areas, in particular in the Skagerrak area, are heavily impacted by various human encroachments, including various developments, pollution, traffic and harvesting of species, which can cause population decline and collapse.

This impact case describes the collection and analysis of data on the effect of various management protocols for conserving populations of lobster and wrasses.

This research has had direct policy impact, having been implemented into management rules and regulations. The positive impact of these policies has been instrumental in establishing numerous protected areas along the Norwegian coast. This seems an exciting area for future research.

Appendices

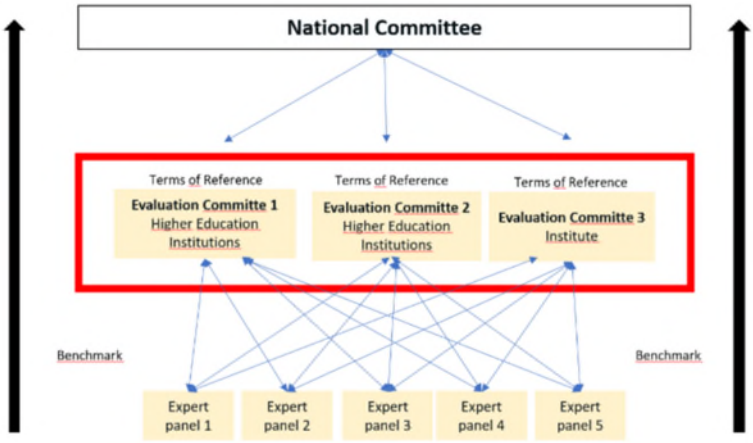
Evaluation of Biosciences 2022-2023

By evaluating Norwegian research and higher education we aim to enhance the quality, relevance, and efficiency. In accordance with the statutes of the Research Council of Norway (RCN), the RCN evaluates Norwegian professional environments to create a solid and up-to-date knowledge base about Norwegian research and higher education in an international perspective.

The evaluation of life sciences is conducted in 2022 - 2024. The evaluation of biosciences takes place in 2022 - 2023, and the evaluation of medicine and health is carried out in 2023-2024. 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), the institute sector and the health trusts. The evaluation shall result in recommendations to the institutions, the RCN and the ministries.

Evaluation of biosciences (EVALBIOVIT) 2022-2023
The evaluation of biosciences includes twenty-two administrative units (e.g., faculty, department, institution) which are assessed by evaluation committees according to sectorial affiliation and/or other relevant similarities between the units. The administrative units enrolled their research groups (97) to five expert panels organised by research subjects or themes and assessed across institutions and sectors.

Organisation of evaluation of biosciences research 2022 - 2023



The institutions have been allowed to adapt the evaluation mandate (Terms of Reference) to their own strategic goals. This is to ensure that the results of the evaluation will be useful for the institution's own strategic development. The administrative unit together with the research group(s) selects an appropriate benchmark for each of the research group(s).

The Research Council of Norway has commissioned an external evaluation secretariat at Technopolis Group for the implementation of the evaluation process.

Each institution/administrative unit is responsible for following up the recommendations that apply to their own institution/administrative unit. The Research Council will use the results from the evaluation in the development of funding instruments and as a basis for advice to the Government.

The web page for the evaluation of biosciences 2022-2023:
https://www.forskningsradet.no/en/analysis-numbers/evaluations/subject-theme/biosciences/

Forskningsrådet

Til innmeldte administrative enheter til
fagevaluering av biovitenskap (EVALBIOVIT)

Vår saksbehandler/tlf.	**Vår ref.**	**Oslo,**
Hilde D.G. Nielsen/4092 2260	21/10653	21.04.2022
	Deres ref.	

Fagevaluering av biovitenskap (EVALBIOVIT) 2022 – 2023

Vi viser til invitasjonsbrev om å delta i fagevaluering av biovitenskap (EVALBIOVIT) datert 11.11.2021 og til informasjonsmøte med innmeldte administrative enheter 15.12.2021.

Porteføljestyret for livsvitenskap vedtok evalueringsprotokollen for fagevaluering av biovitenskap 05.04.2022 (vedlegg 1). Protokollen beskriver roller, prosesser og ansvarsfordeling i evalueringsarbeidet og er i tråd med forslaget til nytt nasjonalt rammeverk for evaluering av forskning og høyere utdanning utarbeidet i regi av Kunnskapsdepartementet.

Forskningsrådet har mottatt innmelding av 37 administrative enheter til EVALBIOVIT. Disse vil bli fordelt på sektorspesifikke evalueringskomitéer: 1-2 evalueringskomité/er for administrative enheter som tilhører instituttsektoren og 1-2 evalueringskomité/er for administrative enheter som tilhører UH-sektor. Universitetsmuseene vil bli evaluert samlet i én evalueringskomité for UH-sektor.
Det skal i tillegg opprettes internasjonale fagekspertpaneler etter faglig eller tematisk likhet på tvers av sektorer. Ekspertpanelene skal evaluere forskergruppene som de administrative enhetene melder inn. Evalueringskomitéene og ekspertpanelene skal vurdere de innsamlede dataene og gi anbefalinger til den enkelte institusjon, til Forskningsrådet og til departementene.

Tilpasning av mandat (vedlegg 1)

Forskningsrådet ber med dette administrative enheter om å tilpasse mandatet (vedlegg 1) til de lokale forhold ved egen institusjon. Tilpasningen gjøres ved å fylle inn de åpne punktene i malen (Appendix A). Utfylt skjema sendes på epost til evalbiovit@forskningsradet.no *innen 30. september 2022.*

Innmelding av forskergrupper (vedlegg 2a og 2b)

Forskningsrådet ber administrative enheter om å melde inn forskergrupper i tråd med forskergruppedefinisjonen beskrevet i kapittel 1.2 i evalueringsprotokollen. Det bes også om at forskergruppene innplasseres i den tentative fagpanelinndelingen for EVALBIOVIT (vedlegg 2a). Utfylt regneark (vedlegg 2b) sendes til evalbiovit@forskningsradet.no *innen 31. mai 2022.*

Forskningsrådet vil ferdigstille panelstruktur og avgjøre den endelige fordelingen av forskergruppene på fagpaneler *etter* at alle forskergrupper er meldt inn.

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Org.nr. 970141669

Invitasjon til å foreslå eksperter (vedlegg 3a og 3b)

Forskningsrådet inviterer administrative enheter til å spille inn forslag til eksperter som kan inngå i evalueringskomitéene og i ekspertpanelene (vedlegg 3a). Hver evalueringskomité skal bestå av 7-9 komitémedlemmer. Hvert ekspertpanel skal bestå av 5-7 eksperter. Utfylt regneark (vedlegg 3b, fane 1 og fane 2) sendes til evalbiovit@forskningsradet.no *innen 31. mai 2022.*

Forskningsrådet v/porteføljestyret for livsvitenskap vil oppnevne leder og medlemmer til evalueringskomitéene og til ekspertpanelene.

Data og datainnsamling

Forskningsrådet har nå ute et oppdrag for analyse av data om personal og forskningsproduksjon. Analysen skal i hovedsak baseres på data i DBH, NIFUs forskerpersonaleregister og Cristin. Analysene vil inkludere indikatorer som skal brukes for evaluering av alle institusjoner.

Videre vil institusjonene få et ansvar for innsamling av data til en egenevaluering som skal inngå i vurderingsgrunnlaget for evalueringskomiteene. For å sikre at evalueringen blir nyttig for forskningsinstitusjonenes utvikling, vil Forskningsrådet også invitere institusjonene til å delta i utvelgelse av relevante evalueringsdata og indikatorer som kan danne grunnlag for vurdering opp mot institusjonens egne strategiske mål og sektormål. På bakgrunn av dette har Forskningsrådet en forventning om at institusjonene som deltar i evalueringen stiller med nødvendige ressurser gjennom hele evalueringsprosessen.

Forskningsrådet har, etter en anbudskonkurranse om sekretariatstjenester, inngått en avtale med Technopolis Group som skal bistå Forskningsrådets administrasjon i arbeidet med EVALBIOVIT. Sekretariatet skal blant annet koordinere datainnsamlingen fra institusjonene og systematisere det innsamlede materialet for vurdering i ekspertpaneler og evalueringskomitéer.

Endring av administrativ enhet

For noen få tilfeller kan det være behov for å gjøre noen endringer i forhold til den administrative enheten[1] som allerede er innmeldt til EVALBIOVIT. For eksempel kan et fakultet som ble meldt inn samlet til EVALBIOVIT i desember 2021 finne det mer hensiktsmessig å heller melde inn fakultetets institutter som egne administrative enheter. Hvis man ønsker å endre på den administrative enheten må dette meldes Forskningsrådets administrasjon så fort som mulig, men ikke senere enn 31.05.2022. Melding om endring sendes på epost til: evalbiovit@forskningsradet.no.

Informasjonsmøte 9. mai 2022 og nettside for EVALBIOVIT

Forskningsrådet arrangerer 09.05.2022 kl. 12.00-12.45 et informasjonsmøte for alle som deltar i EVALBIOVIT. Møtet vil foregå digitalt (Zoom). Vi vil i møtet bl.a. gå gjennom evalueringsprotokollen samt at det vil være mulig å stille spørsmål. Påmelding til evalbiovit@forskningsradet.no *innen 07.05.2022.*

Forskningsrådet har opprette en egen nettside hvor informasjon om EVALBIOVIT vil bli publisert fortløpende. Lenke til nettsiden finner dere her: https://www.forskningsradet.no/statistikk-evalueringer/biovitenskap-2022-2023/.

[1] Med administrativ enhet menes en organisatorisk enhet på nivå 2 eller 3 i organisasjonsstrukturen til DBH for UH sektor eller NIFUs organisasjonsregister for institutt- og helsesektoren.

Spørsmål som gjelder fagevalueringen kan sendes på epost til evalbiovit@forskningsradet.no eller ved å kontakte Hilde Dorthea Grindvik Nielsen på epost hgn@forskningsradet.no /mobil 40 92 22 60.

Med vennlig hilsen
Norges forskningsråd

Ole Johan Borge
avdelingsdirektør
Avdeling for helseforskning og helseinnovasjon

Hilde G. Nielsen
spesialrådgiver
Avdeling for helseforskning og helseinnovasjon

Vedlegg
1. Evalueringsprotokoll for fagevaluering av biovitenskap 2022-2023
2a. Tentativ fagpanelinndeling for evaluering av forskergrupper
2b. Skjema for innmelding av forskergrupper
3a. Invitasjon til å foreslå eksperter og informasjon om evalueringskomitéer og ekspertpaneler
3b. Skjema for å foreslå eksperter til evalueringskomitéer og ekspertpaneler

The Research Council of Norway

Evaluation of life sciences in Norway 2022-2023

LIVSEVAL protocol version 1.0

By decision of the Portfolio board for life sciences April 5., 2022

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The report can be downloaded at
www.forskningsradet.no/publikasjoner

Oslo, 5 April 2022

ISBN 978-82-12-Klikk her for å fylle ut (xxxxx-x). (pdf)

1 Introduction

Research assessments based on this protocol serve different aims and have different target groups. 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), and by the institute sector and regional health authorities and health trusts. These institutions will hereafter be collectively referred to as Research Performing Organisations (RPOs). The assessments should serve a formative purpose by contributing to the development of research quality and relevance at these institutions and at the national level.

1.1 Evaluation units

The assessment will comprise a number of *administrative units* submitted for evaluation by the host institution. By assessing these administrative units in light of the goals and strategies set for them by their host institution, it will be possible to learn more about how public funding is used at the institution(s) to facilitate high-quality research and how this research contributes to society. The administrative units will be assessed by evaluation committees according to sectoral affiliation and/or other relevant similarities between the units.

The administrative units will be invited to submit data on their *research groups* to be assessed by expert panels organised by research subject or theme. See Chapter 3 for details on organisation.

Administrative unit	An administrative unit is any part of an RPO that is recognised as a formal (administrative) unit of that RPO, with a designated budget, strategic goals and dedicated management. It may, for instance, be a university faculty or department, a department of an independent research institute or a hospital.
Research group	Designates groups of researchers within the administrative units that fulfil the minimum requirements set out in section 1.2. Research groups are identified and submitted for evaluation by the administrative unit, which may decide to consider itself a single research group.

1.2 Minimum requirements for research groups

1) The research group must be sufficiently large in size, i.e. at least five persons in full-time positions with research obligations. This merely indicates the minimum number, and larger units are preferable. In exceptional cases, the minimum number may include PhD students, postdoctoral fellows and/or non-tenured researchers. *In all cases, a research group must include at least three full-time tenured staff*. Adjunct professors, technical staff and other relevant personnel may be listed as group members but may not be included in the minimum number.

2) The research group subject to assessment must have been established for at least three years. Groups of more recent date may be accepted if they have come into existence as a consequence of major organisational changes within their host institution.
3) The research group should be known as such both within and outside the institution (e.g. have a separate website). It should be able to document common activities and results in the form of co-publications, research databases and infrastructure, software, or shared responsibilities for delivering education, health services or research-based solutions to designated markets.
4) In its self-assessment, the administrative unit should propose a suitable benchmark for the research group. The benchmark will be considered by the expert panels as a reference in their assessment of the performance of the group. The benchmark can be grounded in both academic and extra-academic standards and targets, depending on the purpose of the group and its host institution.

1.3 The evaluation in a nutshell

The assessment concerns:

- research that the administrative unit and its research groups have conducted in the previous 10 years
- the research strategy that the administrative units under evaluation intend to pursue going forward
- the capacity and quality of research in life sciences at the national level

The Research Council of Norway (RCN) will:

- provide a template for the Terms of Reference[1] for the assessment of RPOs and a national-level assessment in life sciences
- appoint members to evaluation committees and expert panels
- provide secretarial services
- commission reports on research personnel and publications based on data in national registries
- take responsibility for following up assessments and recommendations at the national level.

RPOs conducting research in life sciences are expected to take part in the evaluation. The board of each RPO under evaluation is responsible for tailoring the assessment to its own strategies and specific needs and for following them up within their own institution. Each participating RPO will carry out the following steps:

1) Identify the administrative unit(s) to be included as the main unit(s) of assessment
2) Specify the Terms of Reference by including information on specific tasks and/or strategic goals of relevance to the administrative unit(s)

[1] The terms of reference (ToR) document defines all aspects of how the evaluation committees and expert panels will conduct the [research area] evaluation. It defines the objectives and the scope of the evaluation, outlines the responsibilities of the involved parties, and provides a description of the resources available to carry out the evaluation.

3) The administrative unit will, in turn, be invited to register a set of research groups that fulfil the minimum criteria specified above (see section 1.2). The administrative unit may decide to consider itself a single research group.
4) For each research group, the administrative unit should select an appropriate benchmark in consultation with the group in question. This benchmark can be a reference to an academic level of performance or to the group's contributions to other institutional or sectoral purposes (see section 2.4). The benchmark will be used as a reference in the assessment of the unit by the expert panel.
5) The administrative units subject to assessment must provide information about each of their research groups, and about the administrative unit as a whole, by preparing self-assessments and by providing additional documentation in support of the self-assessment.

1.4 Target groups

- Administrative units represented by institutional management and boards
- Research groups represented by researchers and research group leaders
- Research funders
- Government

The evaluation will result in recommendations to the institutions, the RCN and the ministries. The results of the evaluation will also be disseminated for the benefit of potential students, users of research and society at large.

This protocol is intended for all participants in the evaluation. It provides the information required to organise and carry out the research assessments. Questions about the interpretation or implementation of the protocol should be addressed to the RCN.

2 Assessment criteria

The administrative units are to be assessed on the basis of five assessment criteria. The five criteria are applied in accordance with international standards. Finally, the evaluation committee passes judgement on the administrative units as a whole in qualitative terms. In this overall assessment, the committee should relate the assessment of the specific tasks to the strategic goals that the administrative unit has set for itself in the Terms of Reference.

When assessing administrative units, the committees will build on a separate assessment by expert panels of the research groups within the administrative units. See Chapter 3 'Evaluation process and organisation' for a description of the division of tasks.

2.1 Strategy, resources and organisation

The evaluation committee assesses the framework conditions for research in terms of funding, personnel, recruitment and research infrastructure in relation to the strategic aims set for the administrative unit. The administrative unit should address at least the following five specific aspects in its self-assessment: 1) funding sources, 2) national and international cooperation, 3) cross-sector and interdisciplinary cooperation, 4) research careers and mobility, and 5) Open Science. These five aspects relate to how the unit organises and actually performs its research, its composition in terms of leadership and personnel, and how the unit is run on a day-to-day basis.

To contribute to understanding what the administrative unit can or should change to improve its ability to perform, the evaluation committee is invited to focus on factors that may affect performance.

Further, the evaluation committee assesses the extent to which the administrative unit's goals for the future remain scientifically and societally relevant. It is also assessed whether its aims and strategy, as well as the foresight of its leadership and its overall management, are optimal in relation to attaining these goals. Finally, it is assessed whether the plans and resources are adequate to implement this strategy.

2.2 Research production, quality and integrity

The evaluation committee assesses the profile and quality of the administrative unit's research and the contribution the research makes to the body of scholarly knowledge and the knowledge base for other relevant sectors of society. The committee also assesses the scale of the unit's research results (scholarly publications, research infrastructure developed by the unit, and other contributions to the field) and its contribution to Open Science (early knowledge and sharing of data and other relevant digital objects, as well as science communication and collaboration with societal partners, where appropriate).

The evaluation committee considers the administrative unit's policy for research integrity and how violations of such integrity are prevented. It is interested in how the unit deals with research data, data management, confidentiality (GDPR) and integrity, and the extent to which independent and critical pursuit of research is made possible within the unit. Research integrity relates to both the scientific integrity of conducted research and the professional integrity of researchers.

2.3 Diversity and equality

The evaluation committee considers the diversity of the administrative unit, including gender equality. The presence of differences can be a powerful incentive for creativity and talent development in a diverse administrative unit. Diversity is not an end in itself in that regard, but a tool for bringing together different perspectives and opinions.

The evaluation committee considers the strategy and practices of the administrative unit to prevent discrimination on the grounds of gender, age, disability, ethnicity, religion, sexual orientation or other personal characteristics.

2.4 Relevance to institutional and sectoral purposes

The evaluation committee compares the relevance of the administrative unit's activities and results to the specific aspects detailed in the Terms of Reference for each institution and to the relevant sectoral goals (see below).

Higher Education Institutions

There are 36 Higher Education Institutions in Norway that receive public funding from the Ministry for Education and Research. Twenty-one of the 36 institutions are owned by the ministry, whereas the last 15 are privately owned. The HEIs are regulated under the Act relating to universities and university colleges of 1 August 2005.

The purposes of Norwegian HEIs are defined as follows in the Act relating to universities and university colleges[2]

- provide higher education at a high international level;
- conduct research and academic and artistic development work at a high international level;
- disseminate knowledge of the institution's activities and promote an understanding of the principle of academic freedom and application of scientific and artistic methods and results in the teaching of students, in the institution's own general activity as well as in public administration, in cultural life and in business and industry.

In line with these purposes, the Ministry for Research and Education has defined four overall goals for HEIs that receive public funding. These goals have been applied since 2015:

1) High quality in research and education
2) Research and education for welfare, value creation and innovation
3) Access to education (esp. capacity in health and teacher education)
4) Efficiency, diversity and solidity of the higher education sector and research system

The committee is invited to assess to what extent the research activities and results of each administrative unit have contributed to sectoral purposes as defined above. In particular, the committee is invited to take the share of resources spent on education at the administrative units into account and to assess the relevance and contributions of research to education, focusing on the master's and PhD levels. This assessment should be distinguished from an

[2] https://lovdata.no/dokument/NLE/lov/2005-04-01-15?q=universities

assessment of the quality of education in itself, and it is limited to the role of research in fostering high-quality education.

Research institutes (the institute sector)

Norway's large institute sector reflects a practical orientation of state R&D funding that has long historical roots. The Government's strategy for the institute sector[3] applies to the 33 independent research institutes that receive public basic funding through the RCN, in addition to 12 institutes outside the public basic funding system.

The institute sector plays an important and specific role in attaining the overall goal of the national research system, i.e. to increase competitiveness and innovation power to address major societal challenges. The research institutes' contributions to achieving these objectives should therefore form the basis for the evaluation. The main purpose of the sector is to conduct independent applied research for present and future use in the private and public sector. However, some institutes primarily focus on developing a research platform for public policy decisions, others on fulfilling their public responsibilities.

The institutes should:

- maintain a sound academic level, documented through scientific publications in recognised journals
- obtain competitive national and/or international research funding grants
- conduct contract research for private and/or public clients
- demonstrate robustness by having a reasonable number of researchers allocated to each research field

The committee is invited to assess the extent to which the research activities and results of each administrative unit contribute to sectoral purposes and overall goals as defined above. In particular, the committee is invited to assess the level of collaboration between the administrative unit(s) and partners in their own or other sectors.

The hospital sector

There are four regional health authorities (RHFs) in Norway. They are responsible for the specialist health service in their respective regions. The RHFs are regulated through the Health Enterprises Act of 15 June 2001 and are bound by requirements that apply to specialist and other health services, the Health Personnel Act and the Patient Rights Act. Under each of the regional health authorities, there are several health trusts (HFs), which can consist of one or more hospitals. A health trust (HF) is wholly owned by an RHF.

Research is one of the four main tasks of hospital trusts.[4] The three other mains tasks are to ensure good treatment, education and training of patients and relatives. Research is important if the health service is to keep abreast of stay up-to-date with medical developments and carry out critical assessments of established and new diagnostic methods,

[3] Strategy for a holistic institute policy (Kunnskapsdepartementet 2020)

[4] Cf. the Specialist Health Services Act § 3-8 and the Health Enterprises Act §§ 1 and 2

treatment options and technology, and work on quality development and patient safety while caring for and guiding patients.

The committee is invited to assess the extent to which the research activities and results of each administrative unit have contributed to sectoral purposes as described above. The assessment does not include an evaluation of the health services performed by the services.

2.5 Relevance to society

The committee assesses the quality, scale and relevance of contributions targeting specific economic, social or cultural target groups, of advisory reports on policy, of contributions to public debates, and so on. The documentation provided as the basis for the assessment of societal relevance should make it possible to assess relevance to various sectors of society (i.e. business, the public sector, non-governmental organisations and civil society).

When relevant, the administrative units will be asked to link their contributions to national and international goals set for research, including the Norwegian Long-term Plan for Research and Higher Education and the UN Sustainable Development Goals. Sector-specific objectives, e.g. those described in the Development Agreements for the HEIs and other national guidelines for the different sectors, will be assessed as part of criterion 2.4.

The committee is also invited to assess the societal impact of research based on case studies submitted by the administrative units and/or other relevant data presented to the committee. Academic impact will be assessed as part of criterion 2.2.

3 Evaluation process and organisation

The RCN will organise the assessment process as follows:

- Commission a professional secretariat to support the assessment process in the committees and panels, as well as the production of self-assessments within each RPO
- Commission reports on research personnel and publications within life sciences based on data in national registries
- Appoint one or more evaluation committees for the assessment of administrative units.
- Divide the administrative units between the appointed evaluation committees according to sectoral affiliation and/or other relevant similarities between the units.
- Appoint a number of expert panels for the assessment of research groups submitted by the administrative units.
- Divide research groups between expert panels according to similarity of research subjects or themes.
- Task the chairs of the evaluation committees with producing a national-level report building on the assessments of administrative units and a national-level assessments produced by the expert panels.

Committee members and members of the expert panels will be international, have sufficient competence and be able, as a body, to pass judgement based on all relevant assessment criteria. The RCN will facilitate the connection between the assessment levels of panels and committees by appointing committee members as panel chairs.

3.1 Division of tasks between the committee and panel levels

The expert panels will assess research groups across institutions and sectors, focusing on the first two criteria specified in Chapter 2: 'Strategy, resources and organisation' and 'Research production and quality' The assessments from the expert panels will also be used as part of the evidence base for a report on Norwegian research within life sciences (see section 3.3).

The evaluation committees will assess the administrative units based on all the criteria specified in Chapter 2. The assessment of research groups delivered by the expert panels will be a part of the evidence base for the committees' assessments of administrative units. See figure 1 below.

The evaluation committee has sole responsibility for the assessments and any recommendations in the report. The evaluation committee reaches a judgement on the research based on the administrative units and research groups' self-assessments provided by the RPOs, any additional documents provided by the RCN, and interviews with representatives of the administrative units. The additional documents will include a standardised analysis of research personnel and publications provided by the RCN.

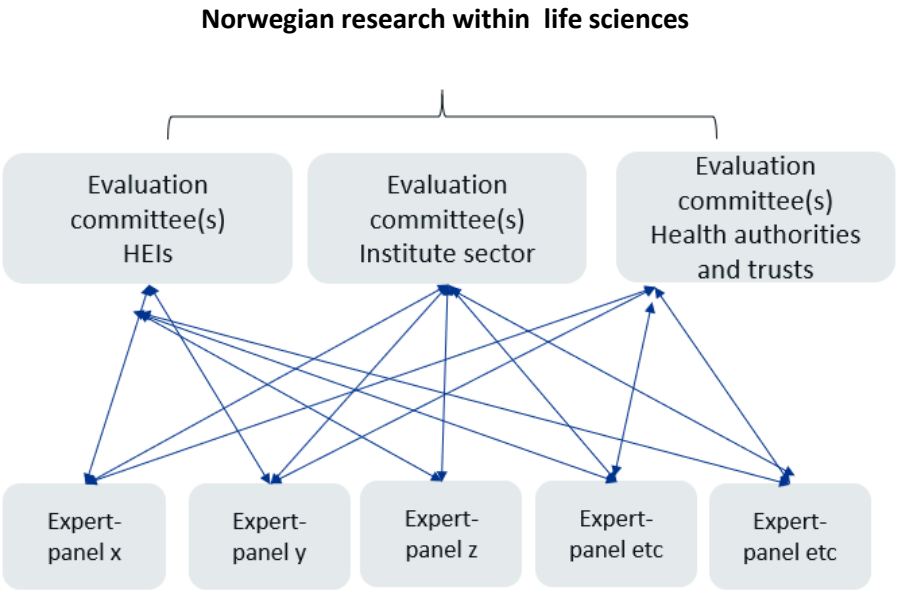

Figure 1. Evaluation committees and expert panels

The evaluation committee takes international trends and developments in science and society into account when forming its judgement. When judging the quality and relevance of the research, the committees shall bear in mind the specific tasks and/or strategic goals that the administrative unit has set for itself including sectoral purposes (see section 2.4 above).

3.2 Accuracy of factual information

The administrative unit under evaluation should be consulted to check the factual information before the final report is delivered to the RCN and the board of the institution hosting the administrative unit.

3.3 National level report

Finally, the RCN will ask the chairs of the evaluation committees to produce a national-level report that builds on the assessments of administrative units and the national-level assessments produced by the expert panels. The committee chairs will present their assessment of Norwegian research in life sciences at the national level in a separate report that pays specific attention to:

- Strengths and weaknesses of the research area in the international context
- The general resource situation regarding funding, personnel and infrastructure
- PhD training, recruitment, mobility and diversity
- Research cooperation nationally and internationally
- Societal impact and the role of research in society, including Open Science

This national-level assessment should be presented to the RCN.

Appendix A: Terms of References (ToR)

[Text in red to be filled in by the Research-performing organisations (RPOs)]

The board of [RPO] mandates the evaluation committee appointed by the Research Council of Norway (RCN) to assess [administrative unit] based on the following Terms of Reference.

Assessment
You are asked to assess the organisation, quality and diversity of research conducted by [administrative unit] 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 [n] aspects in your assessment:

1. …
2. …
3. …
4. …

…

[To be completed by the board: specific aspects that the evaluation committee should focus on – they may be related to a) strategic issues, or b) an administrative unit's specific tasks.]

In addition, we would like your report to provide a qualitative assessment of [administrative unit] 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
- [to be completed by the board]

Interviews with representatives from the evaluated units
Interviews with the [administrative unit] 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 [the administrative unit] 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 [administrative unit] and RCN by [date]. The [administrative unit] should be allowed to check the report for factual inaccuracies; if such inaccuracies are found, they should be reported to the life sciences secretariat no later than two weeks after receipt of the draft report. After the committee has made the amendments judged necessary, a corrected version of the assessment report should be sent to the board of [the RPO] and the RCN no later than two weeks after all feedback on inaccuracies has been received from [administrative unit].

Appendix B: Data sources

The lists below shows the most relevant data providers and types of data to be included in the evaluation. Data are categorised in two broad categories according to the data source: National registers and self-assessments prepared by the RFOs. The RCN will commission an analysis of data in national registers (R&D-expenditure, personnel, publications etc.) to be used as support for the committees' assessment of administrative units. The analysis will include a set of indicators related to research personnel and publications.

- **National directorates and data providers**
- Norwegian Directorate for Higher Education and Skills (HK-dir)
- Norwegian Agency for Quality Assurance in Education (NOKUT)
- Norwegian Agency for Shared Services in Education and Research (SIKT)
- Research Council of Norway (RCN)
- Statistics Norway (SSB)

National registers

1) R&D-expenditure
    a. SSB: R&D statistics
    b. SSB: Key figures for research institutes
    c. HK-dir: Database for Statistics on Higher Education (DBH)
    d. RCN: Project funding database (DVH)
    e. EU-funding: eCorda
2) Research personnel
    a. SSB: The Register of Research personnel
    b. SSB: The Doctoral Degree Register
    c. RCN: Key figures for research institutes
    d. HK-dir: Database for Statistics on Higher Education (DBH)
3) Research publications
    a. SIKT: Cristin - Current research information system in Norway
    b. SIKT: Norwegian Infrastructure for Bibliometrics
    (full bibliometric data incl. citations and co-authors)
4) Education
    a. HK-dir/DBH: Students and study points
    b. NOKUT: Study barometer
    c. NOKUT: National Teacher Survey
5) Sector-oriented research
    a. RCN: Key figures for research institutes
6) Patient treatments and health care services
    a. Research & Innovation expenditure in the health trusts
    b. Measurement of research and innovation activity in the health trusts
    c. Collaboration between health trusts and HEIs
    d. Funding of research and innovation in the health trusts
    e. Classification of medical and health research using HRCS (HO21 monitor)

Self-assessments

1) Administrative units
    a. *Self-assessment covering all assessment criteria*
    b. Administrative data on funding sources
    c. Administrative data on personnel
    d. Administrative data on the division of staff resources between research and other activities (teaching, dissemination etc.)
    e. Administrative data on research infrastructure and other support structures
    f. SWOT analysis
    g. Any supplementary data needed to assess performance related to the strategic goals and specific tasks of the unit

2) Research groups
    a. *Self-assessment covering the first two assessment criteria (see Table 1)*
    b. Administrative data on funding sources
    c. Administrative data on personnel
    d. Administrative data on contribution to sectoral purposes: teaching, commissioned work, clinical work [will be assessed at committee level]
    e. Publication profiles
    f. Example publications and other research results (databases, software etc.) The examples should be accompanied by an explanation of the groups' specific contributions to the result
    g. Any supplementary data needed to assess performance related to the benchmark defined by the administrative unit

The table below shows how different types of evaluation data may be relevant to different evaluation criteria. Please note that the self-assessment produced by the administrative units in the form of a written account of management, activities, results etc. should cover all criteria. A template for the self-assessment of research groups and administrative units will be commissioned by the RCN from the life sciences secretariat for the evaluation.

Table 1. Types of evaluation data per criterion

Evaluation units / Criteria	Research groups	Administrative units
Strategy, resources and organisation	Self-assessment Administrative data	Self-assessment National registers Administrative data SWOT analysis
Research production and quality	Self-assessment Example publications (and other research results)	Self-assessment National registers
Diversity, equality and integrity		Self-assessment National registers Administrative data
Relevance to institutional and sectoral purposes		Self-assessment Administrative data
Relevance to society		Self-assessment National registers Impact cases
Overall assessment	*Data related to:* *Benchmark defined by administrative unit*	*Data related to:* *Strategic goals and specific tasks of the admin. unit*

The Research Council of Norway

EVALBIOVIT

Self-assessment for administrative units

Version 1.2

Overview

Institution (name and short name):
Administrative unit (name and short name):
Date:
Contact person:
Contact details (email):

1 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), and by the institute sector. For the life sciences area, research undertaken by regional health authorities and health trusts is also included. 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 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 an administrative unit. The self-assessment contains questions regarding the unit's research- and innovation related activities and developments over the past 10 years. All the submitted data will be evaluated by evaluation committees (for administrative units) and expert panels (for research groups). Please read through the whole document including all instructions before answering the questions to avoid overlaps.

As an administrative unit, you are also responsible for collecting the completed self-assessment for each of the research groups that belong to the unit. The research groups need to submit their completed self- assessment to the unit no later than the 1st of December 2022. The unit will submit the research groups' completed self-assessments and the unit's own completed self-assessment no later than the 5th of December 2022.

The whole self-assessment shall be written in English.

Please use the following format when naming your document: name of the institution, and name of the administrative unit, e.g. UiO_FacBiosci. Send it to evalbiovit@technopolis-group.com no later than 5th of December 2022.

For questions concerning the self-assessment or EVALBIOVIT in general, please contact RCN's evaluation secretariat at Technopolis Group: evalbiovit.questions@technopolis-group.com.

Many thanks in advance![1]

[1] Personal information will be deleted when evaluation reports are published and no later than 30 April 2024

For more information on how Technopolis Group handles data processing, see: http://www.technopolis-group.com/privacy-policy/

For more information on how the Research Council of Norway handles data processing, see: https://www.forskningsradet.no/en/privacy-policy/

2 Self-assessment for administrative units

Self-assessment guidelines:

- Data on personnel should refer to reporting to DBH on 1 October 2021 for HEIs and to the yearly reporting for 2021 for the institute sector
- Other data should refer to 31 December 2021 if not specified otherwise
- Please read the entire self-assessment document before answering
- Provide information – provide documents and other relevant data or figures about the administrative unit, 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 administrative unit (most often this includes filling out specific forms) and inform the reader about the administrative unit
- Reflect – comment in a reflective and evaluative manner how the administrative unit operates
- 4000 characters including spaces equals one page

2.1 Strategy, resources and organisation of research

2.1.1 Research strategy

2.1.1.1 Describe the main strategic goals for research and innovation of the administrative unit (1000–4000 characters). How are these goals related to institutional strategies?

- Describe the main fields and focus of research and innovation in the unit
- Describe how you work to maximise synergies between the different purposes of the unit
- Describe the planned research-field impact; planned policy impact and planned societal impact
- Describe how the strategy is followed-up in the allocation of resources and other measures
- Describe the most important occasions where priorities are made (i.e., announcement of new positions, applying for external funding, following up on evaluations)
- If there is no long-term research strategy – explain why

Form 1 *Administrative unit's strategic planning documents*

Instructions: For each category (Research strategy, Research funding, Cooperation policy, Open science policy) present up to 5 documents that according to you are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then present these documents. Please use the following formatting: Name of document, Years active, Link to the document.

Example: Norwegian University of Science and Technology Strategy, 2021–2025, hyperlink to the document

2.1.2 Organisation of research

2.1.2.1 Describe the organisation of research and innovation activities at the unit, including how responsibilities for research and other purposes (education, knowledge exchange, patient treatment, training etc) are distributed and delegated (500–1500 characters).

Form 2 *SWOT analysis for administrative units*

Instructions: Please complete a SWOT analysis for your administrative unit. Reflect on what are the major internal Strengths and Weaknesses as well as external Threats and Opportunities for your research and innovation activities and research environment. Assess what the present Strengths enable in the future and what kinds of Threats are related to the Weaknesses. Consider your scientific expertise and achievements, funding, facilities, organisation and management (500–2000 characters per cell).

2.1.3 Research funding

2.1.3.1 Describe the funding sources of the unit and indicate the share of the unit's budget (NOK) dedicated to research compared to other purposes. Shares may be calculated based on full time equivalents (FTE) allocated to research compared to total FTE in unit (500–1500 characters).

2.1.3.2 Describe how successful the administrative unit has been in obtaining competitive regional, national and/or international research funding grants (200–1000 characters).

Form 3 *Funding levels for the administrative unit for 2021*

Instructions: For administrative units in the institute sector receiving basic funding via RCN, funding levels should be provided for 2021 in the funding categories used in the yearly reporting:

a) National grants (NOK) (post 1.1 og 1.2)):

   i) from the Research Council of Norway (NOK) – excluding basic funding

   ii) from the ministries and underlying directorates (NOK)

   iii) from industry (NOK)

   iv) other national grants including third sector, private associations and foundations (NOK)

b) National contract research (post 1.3)

c) International grants (post 1.4)

d) Funding related to public management (forvaltningsoppgaver post 1.5)

For Higher Education Institutions costs covered by external funding sources should be reported according to the same categories as far as possible. Costs may be classified as Other if they cannot be placed in one of the specified categories. Reporting should be based on incurred costs (regnskapstall) for 2021.

2.1.4 Participation in national infrastructures

2.1.4.1 Describe the most important participation in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Nasjonalt veikart for forskningsinfrastruktur) including as host institution(s) (200–1000 characters).

Form 4 *Infrastructures listed in the Norwegian roadmap for research infrastructures (Nasjonalt veikart for forskningsinfrastruktur)*

Instructions: Please present up to 5 participations in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Nasjonalt veikart for forskningsinfrastruktur) for each area that were the most important to your administrative unit. For each category area, please use the following formatting:

Name of research infrastructure, Years when used, Description (100–500 characters) of the engagement with the research infrastructure (reasoning, objectives, expected/actual outcomes).

[2] Excluding basic funding.

[3] For research institutes only research activities should be included from section 1.3 in the yearly reporting

2.1.4.2 Describe the most important participation in the international infrastructures funded by the ministries (Norsk deltakelse i internasjonale forskningsorganisasjoner finansiert av departementene) (200–1000 characters).

Form 5 *Participation in international research organisations*

Instructions: Please describe up to 5 participations in international and European infrastructures (ESFRI) for each area that have been most important to your research unit. When presenting your participation, please use the following formatting:

Name of research infrastructure, Years when used, Description (100–500 characters) of the participation in the research infrastructure (reasoning, objectives, expected/actual outcomes).

2.1.4.3 Describe the most important participation in European (ESFRI) infrastructures (Norske medlemskap i infrastrukturer i ESFRI roadmap) including as host institution(s) (200–1000 characters).

Form 6 *Participation in infrastructures on the ESFRI Roadmap*

Instructions: For each area, please give a description of up to 5 engagements that have been most important to your research unit. When presenting your participation, please use the following formatting: Name of research infrastructure, Years when used, Description (100–500 characters) of the engagement with the research infrastructure (reasoning, objectives, expected/actual outcomes)."

2.1.5 Accessibility to research infrastructures

2.1.5.1 Describe the accessibility to research infrastructures for your researchers. Considering both physical and electronic infrastructure (200–1000 characters).

2.1.5.2 Describe what is done at the unit to fulfil the FAIR-principles[4] (200–1000 characters).

2.1.6 Research staff

2.1.6.1 Describe the profile of research personnel at the unit in terms of position and gender (200–1000 characters).

Form 7 *Administrative data on the division of staff resources for 2021*

2.1.6.2 Describe the structures and practices to foster researcher careers and help early-career researchers to make their way into the profession (200–1000 characters).

2.1.6.3 Describe how research time is distributed among staff including criteria for research leave (forskningsfri) (200–1000 characters).

2.1.6.4 Describe research mobility options (200–1000 characters).

2.2 Research production, quality, and integrity

2.2.1 Research quality and integrity

2.2.1.1 Describe the scientific focus areas of the research conducted at the administrative unit, including the unit's contribution to these areas (500–2000 characters).

2.2.1.2 Describe the unit's policy for research integrity, including preventative measures when integrity is at risk, or violated (200–1000 characters).[5]

2.2.2 Open Science policies at the administrative unit

2.2.2.1 Describe the institutional policies, approaches, and activities to the following Open Science areas (consider each area separately, 500–1000 characters in total):

- Open access to publications
- Open access to research data and implementation of FAIR data principles
- Open-source software/tools
- Open access to educational resources
- Open peer review
- Skills and training for Open Science
- Citizen science and/or involvement of stakeholders / user groups

2.2.2.2 Describe the most important contributions and impact of the unit's researchers towards the different Open Science areas (consider each area separately, 500–1000 characters in total):

- Open access to publications
- Open access to research data and implementation of FAIR data principles
- Open-source software/tools
- Open access to educational resources
- Open peer review
- Skills and training for Open Science
- Citizen science and/or involvement of stakeholders/user groups

2.2.2.3 Describe the institutional policy regarding ownership of research data, data management, and confidentiality (200–1000 characters). Is the use of data management plans implemented at the unit?

2.3 *Diversity and equality*

2.3.1 Diversity and equality practices

2.3.1.1 Describe the policy and practices to protect against any form of discrimination in the administrative unit (200–1000 characters).

Form 8 *Administrative unit's policies against discrimination*

Instructions: Give a description of up to 5 documents that are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then these documents should be referred to. For each document use the following formatting: Name of document, Years active, Link to the document

Example: Norwegian University of Science and Technology Strategy, 2021–2025, hyperlink to the document

2.4 Relevance to institutional and sectorial purposes

2.4.1 Sector specific impact

2.4.1.1 Describe whether the administrative unit has activities aimed at achieving sector-specific objectives[6] or focused on contributing to the knowledge base in general. Describe activities connected to sector-specific objectives, the rationale for participation and achieved and/or expected impacts (500–3000 characters).

- Alternatively, describe whether the activities of the unit are aimed at contribution to the knowledge base in general. Describe the rationale for this approach and the impacts of the unit's work to the knowledge base.

2.4.2 Research innovation and commercialisation

2.4.2.1 Describe the administrative unit's practices for innovation and commercialisation (500–1500 characters).

- Describe the interest among the research staff in doing innovation and commercialisation activities
- Describe how innovation and commercialisation is supported at the unit

Form 9 *Administrative unit's policies for research innovation*

Instructions: Describe up to 5 documents of the administrative unit's policies for research innovation, including IP policies, new patents, licenses, start-up/spin-off guidelines, etc., that are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then present these documents. For each document use the following formatting: Name of document, Years active, Link to the document

Example: Norwegian University of Science and Technology Strategy, 2021–2025, hyperlink to the document

2.4.2.2 Provide examples of successful innovation and commercialisation results, such as new patents, licenses, etc (500–1500 characters).

Form 10 *Administrative description of successful innovation and commercialisation results*

Instructions: Please describe up 10 successful innovation and commercialisation results at your administrative unit. For each result, please use the following formatting: Name of innovation and commercial results, Year, Links to relevant documents, articles, etc. that present the result, Description (100–500 characters) of successful innovation and commercialisation result.

2.4.3 Collaboration

2.4.3.1 Describe the unit's policy towards regional, national and international collaboration, as well as how cross-sectorial collaboration and interdisciplinary collaboration is approached at the administrative unit (500–1500 characters). Please fill out the forms that match your institution: the institute sector fills out Form 11a and Form 11b; HEIs fill out Form 12.

- Reflect on how successful the unit have been in meeting its aspirations for collaborations

Form 11a (institute sector) *Administrative unit's partnerships ('faktisk samarbeid')*

Instructions: For each of the administrative unit's tender and project-based cooperation (which are not tax deducted) please present up to 5 examples under each category (Collaboration with national public institutions; Collaboration with national private institutions; Collaboration with international public institutions; Collaboration with international private institutions). Please use 100– 500 characters to describe the impacts and relevance of collaboration.

Form 11b (institute sector) *Administrative unit's collaboration*

Instructions: For each of the administrative unit's tender and project-based cooperation please present up to 5 examples under each category (Collaboration with academic partners nationally; Collaboration with non-academic partners nationally; Collaboration with academic partners internationally; Collaboration with non-academic partners internationally). Please use 100–500 characters to describe the impacts and relevance of collaboration.

2.4.3.2 Reflect on the importance of different types of collaboration for the administrative unit (200–1000 characters).

- Regional, national and international collaborations

Collaborations with different sectors, including public, private and third sector

Form 12 (HEIs) *Administrative unit's partnerships" ('faktisk samarbeid')*

Instructions: For each of the administrative unit's tender and project-based cooperation (which are not tax deducted) please present up to 5 examples under each category (Collaboration with national public institutions; Collaboration with national private institutions; Collaboration with international public institutions; Collaboration with international private institutions). Please use 100– 500 characters to describe the impacts and relevance of collaboration.

2.4.3.3 Reflect on the importance of different types of collaboration for the administrative unit, the added value of these collaborations to the administrative unit and Norwegian research system (500–1500 characters).

2.4.4 ONLY for higher education institutions

2.4.4.1 Reflect on how research at the unit contributes towards master and PhD-level education provision, at your institutions and beyond (200–1000 characters).7

2.4.4.2 Describe the opportunities for master and bachelor students to become involved in research activities at the unit (200–1000 characters).

2.4.5 ONLY for research institutes

2.4.5.1 Describe how the research activities at the administrative unit contribute to the knowledge base for policy development, sustainable development, and societal and industrial transformations more generally (500–1500 characters).8

2.4.5.2 Describe the most important research activities including those with partners outside of research organisations (500–1500 characters).

2.5 Relevance to society

2.5.1 Administrative unit's societal impact

2.5.1.1 Reflect on the unit's contribution towards the Norwegian Long-term plan for research and higher education, societal challenges more widely, and the UN Sustainable Development Goals (500–1500 characters).

2.5.1.2 Describe how the administrative unit's research and innovation has contributed to economic, societal and cultural development by submitting one to five impact cases depending on the size of the unit. For up to 10 researchers: one case; for 10 to 30 researchers: two cases; for 30-50 researchers: three cases; for 50-100 researchers: four cases, and up to five cases for units exceeding 100 researchers. Please use the attached template for impact cases. Each impact case will be submitted as an attachment to the self-evaluation. Institutions that submit impact cases do not have to fill in the box below.

Case no. 1

Thank you for completing the self-assessment.

[7] Please note: RCN will provide data from the national student survey (Studiebarometeret) on students' experience with research methods and exposure to research activities. The data will most probably be on an aggregate level but including the unit under assessment.

[8] Strategi for helhetlig instituttpolitikk, Kunnskapsdepartementet, p.4): «Instituttsektoren skal utvikle kunnskapsgrunnlag for politikkutforming og bidra til bærekraftig utvikling og omstilling, gjennom forskning av høy kvalitet og relevans.» (The government's strategy for an independent institute sector).

List of research groups

Institution	Administrative unit	Research group
University of Oslo (UiO)	Department of Biosciences (IBV)	*Aquatic Biology and Toxicology (AQUA)*
		Biochemistry and Molecular Biology (BMB)
		Centre for Ecological and Evolutionary Synthesis (CEES)
		Genetics and Evolutionary Biology (EVOGENE)
		Physiology and Cell Biology (FYSCELL)

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.

Methods and limitations

Methods

The evaluation is based on documentary evidence and online interviews with the representatives of Administrative unit.

The documentary inputs to the evaluation were:

- Evaluation Protocol Evaluation of life sciences in Norway 2022-2023
- Administrative unit´s Terms of Reference
- Administrative unit's self-assessment report
- Administrative unit's impact cases
- Administrative unit's research groups evaluation reports
- Panel reports from the Expert panels
- Bibliometric data (*NIFU Nordic Institute for Studies of innovation, research and education*)
- Personnel data (*Statistics Norway (SSB)*)
- Funding data – The Research Council´s contribution to biosciences research (*RCN*)
- Extract from the Survey for academic staff and the Student Survey (*Norwegian Agency for Quality Assurance in Education (NOKUT)*)

After the document review, the Committee met and conducted an initial assessment against the assessment criteria and defined questions for the interview with the Administrative unit. The Committee shared the interview questions with the Administrative unit three weeks before the interview.

The Committee interviewed the Administrative unit in an hour-long virtual meeting to validate the Committee's understanding and refine perceptions as well as fill any gaps in understanding and evidence. The Administrative unit answered the Committee's questions including any follow-up questions.

After the online interview, the Committee held a meeting to review the initial assessment in light of the interview and draft a report based on their assessment of the Administrative unit against the assessment criteria.

A one-page profile of the Administrative unit was drafted based on information from the self-assessment. The Administrative unit had the opportunity to fact-check this profile. Thereafter, the profile was included in the final draft of the report.

The final draft was reviewed by committee members and any comments were addressed. After a final copy-edit, the final report was approved by the Committee.

Limitations

The Committee judged the information received through documentary inputs and the interview with the Administrative unit sufficient to complete the evaluation

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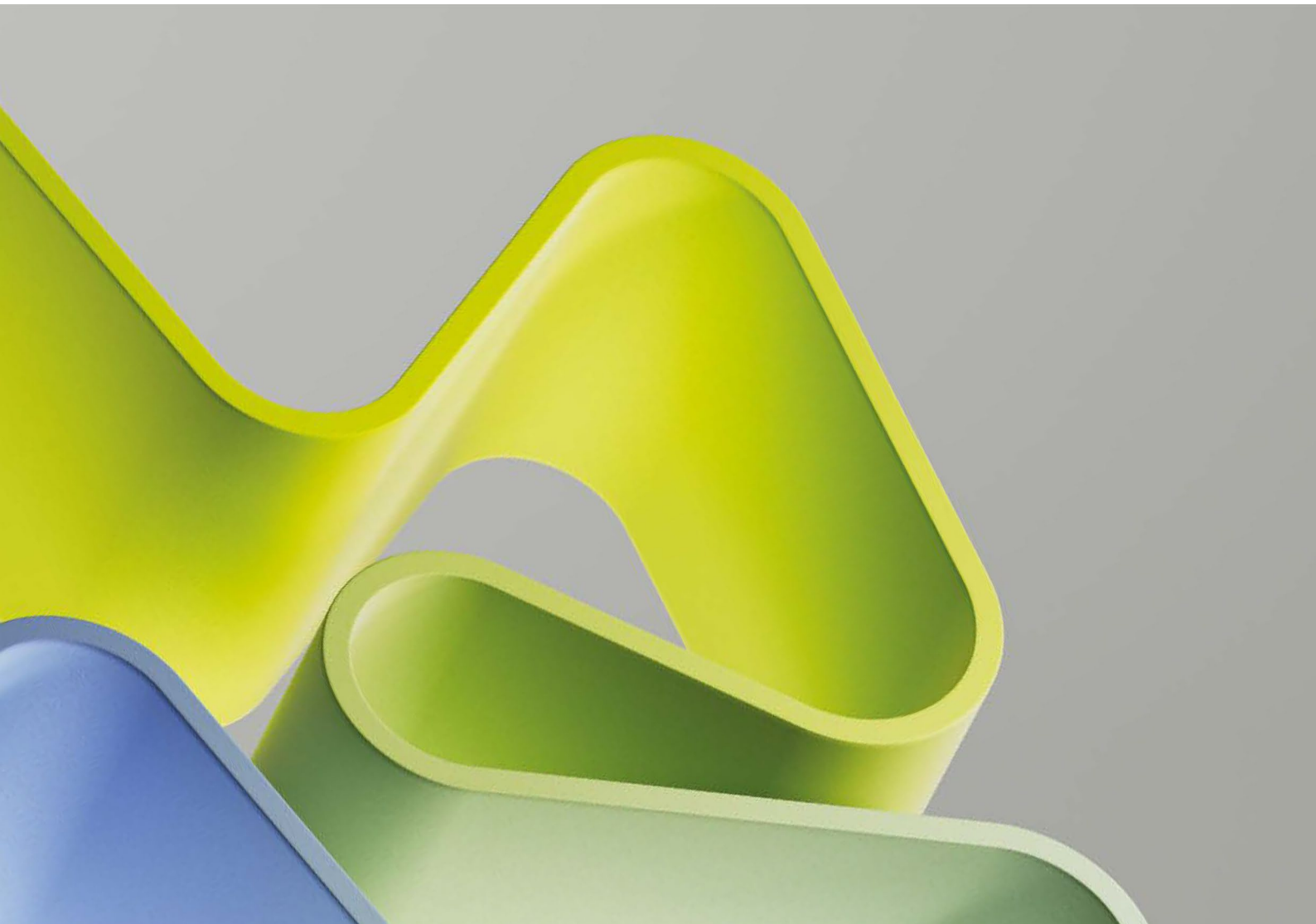
Publikasjonen kan lastes ned fra
www.forskningsradet.no/publikasjoner

Design: [design]
Foto/ill. omslagsside: [fotokreditt]

ISBN 978-82-12-03975-9 (pdf)



Noen tall for IBVs bachelorprogram
- og en sammenlikning med andre biologiprogrammer i Norge

Notat til styret ved IBV, januar 2024

1 Introduksjon

1.1 Tall som presenteres i notatet

IBVs nåværende bachelorprogram i biovitenskap startet i 2017, og erstattet da to tidligere programmer (Biologi, og Molekylærbiologi og biologisk kjemi). I årene 2019-2021 var det krav om R2-matematikk fra videregående, som viste seg å ha stor negativ effekt på søkertall og opptak. Dette notatet presenterer først en oversikt over IBVs bachelorprogram i dag sammenliknet med andre bachelorprogrammer ved MN-fakultetet og med andre biologi-relaterte programmer ved universiteter i Norge, inkludert størrelse på programmene samt nøkkeltall fra 2023 på oppmøte og opptakspoeng. Deretter presenteres en sammenlikning av faglig innhold i den obligatoriske fellesdelen for alle biologiprogrammer i Norge. I neste del presenteres trender over tid for biologiprogrammene i Norge, i totalt antall studenter, prosent fylte plasser ved opptak, opptakspoeng, snittpoeng og gjennomføringsgrad. Til slutt presenteres resultater fra studentenes egen evaluering i Studiebarometeret. Tallene er hentet fra Database for høyere utdanning (DBH), Samordna opptak, og Studiebarometeret (Nokut), samt universitetenes egne nettsider med beskrivelse av programmenes oppbygging og innhold.

1.2 Mål med bachelorutdanningen, MN og UiOs strategier

Utdanning er et viktig hovedtema for strategiene både til UiO[i] og til MN-fakultetet[ii]. MNs strategi nevner blant annet at utdanningen skal være på høyt internasjonalt nivå og knyttes til forskning, og at fakultetet skal tiltrekke seg faglig motiverte studenter. Det står også at fakultetet har særlig ansvar for å fremme tverrfaglighet, samt at utdanningen skal bidra til å svare på vår tids store utfordringer som beskrevet i FNs bærekraftmål. Forsknings- og undervisningssamarbeidet med Naturhistorisk museum nevnes spesifikt, og IBV står for en stor del av dette samarbeidet.

UiOs strategi nevner også tverrfaglighet, samarbeid, og at utdanningen skal være på topp internasjonalt nivå. Her nevnes også tap av naturmangfold som en av samfunnets store utfordringer, samt klimakrisen som vår tids største utfordring. For utdanning spesielt står det blant annet at UiO skal «legge til rette for integrerte studieløp på tvers av språk, landegrenser og fag». Videre at «for å møte studentenes samfunnsengasjement, faglige ønsker og ambisjoner skal studietilbudene gjøres mer fleksible, og det tverrfaglige tilbudet skal øke».

Bachelorutdanningen skal altså bidra til å oppfylle mange mål for studentene, universitetet og samfunnet. For IBVs del kan man basert på dette sette generelle mål for bachelorstudiet:

(1) At studiet skal være attraktivt for studentene (ved at vi tiltrekker oss mange søkere, og at de best kvalifiserte og sterkest motiverte studentene velger oss),

[i] https://www.uio.no/om/strategi/strategi-2030/
[ii] https://www.mn.uio.no/om/strategi/mn_strategibrosjyre_norsk_web.pdf

(2) At få studenter skal droppe ut underveis (ved at vi har et godt faglig og sosialt tilbud, og tilstrekkelig fleksibilitet til å møte ulike behov og interesser blant studentene),
(3) At den store faglige bredden ved IBV representeres i et bredt utvalg av studenter,
(4) At den faglige kompetansen på IBV utnyttes best mulig i undervisningen,
(5) At IBVs bachelorutdanning møter de samfunnsbehov vi har kompetanse til å dekke,
(6) At både studenter og undervisere er motiverte og trives med bachelorutdanningen,
(7) At IBV har et godt samarbeid om utdanning med Naturhistorisk museum (NHM).

IBV har kun ett bachelorprogram i dag, og spørsmålet er om dette er nok til å møte disse målene. Gjennomgangen av tallene under er ment å gi en bedre kvantitativ bakgrunn for instituttets diskusjon av dette.

2 Dagens bilde: IBVs bachelorprogram sammenliknet med andre

2.1 Sammenlikning med andre bachelorprogrammer ved MN-fakultetet

Institutt for biovitenskap er det eneste på MN-fakultetet som kun tilbyr ett bachelorprogram (tabell 1), selv om IBV er blant de største instituttene. Bachelorprogrammet i biovitenskap er stort i form av antall plasser (160 per kull). På fakultetet er det kun IFI som har like store programmer, og informatikk-emner er svært ulike fra biologiske emner (ikke felt eller lab). I 2023 fylte IBV kun 136 av 160 plasser, til tross for at det ikke lenger er R2-krav. Se seksjon 4 med trender over tid for flere tall på dette. Poenggrense for søkere og snittpoeng blant oppmøtte sier noe om hvor attraktivt studiet er, men disse tallene varierer mye fra år til år (se seksjon 4). Vårt program er blant de med lavest snittpoeng ved MN.

Tabell 1. Oversikt over bachelorprogrammer (samt lektorprogrammet 5 år) ved MN-fakultetet, tall fra 2023. Antall plasser er per nye årskull. Poenggrense gjelder ordinær kvote, snittpoeng er blant møtte studenter. Obligatoriske SP gjelder fellesemner i graden (IBV krever for eksempel i tillegg at ytterligere 40 SP velges blant IBVs emner).

Institutt	Programnavn	Studiekode	Retninger	Plasser	Møtte	PoengGrense	PoengSnitt	ObligaroriskeSP
Institutt for biovitenskap	Biovitenskap	185327	1	160	136	39,6	51,21	100
Fysisk institutt	Elektronikk, informatikk og teknologi	185856	1	40	38	0	49,71	140
Fysisk institutt	Fysikk og astronomi	185857	4	90	79	0	53,17	100
Fysisk institutt	Kjernefysikk og nukleærteknologi	185121	1	12	25	52,8	59,11	150
Institutt for geofag	Geofysikk og klima	185915	1	20	11	0	54,34	100
Institutt for geofag	Geologi og geografi	185858	2	55	31	0	50,85	80
Kjemisk institutt	Kjemi og biokjemi	185860	2	40	28	0	53,76	130
Kjemisk institutt	Fornybar energi og nanoteknologi	185863	1	30	36	48,8	53,54	130
Matematisk institutt*	Matematikk med informatikk*	185306	7	80	75	0	56,31	90
Matematisk institutt*	Matematikk og økonomi*	185862	4	30	30	0	54,57	120
Institutt for informatikk	Informatikk	185187	1	150	226	57,3	55,83	90
Institutt for informatikk	Informatikk: Design, bruk, interaksjon	185830	1	125	135	57,3	55,83	90
Institutt for informatikk	Informatikk: Digital økonomi og ledelse	185370	1	62	60	59	60,8	140
Institutt for informatikk	Informatikk: Programmering og systemarkitektur	185829	1	230	260	58,3	58,17	120
Institutt for informatikk	Informatikk: Robotikk og intelligente systemer	185832	1	73	72	51,9	54,69	130
Institutt for informatikk	Informatikk: Språkteknologi	185837	1	58	64	57,9	55,89	110
-	Honours-programmet Realfag	185747	1	20	28	62,8	61,95	30
-	Lektorprogram realfag (5 år)	185233	10 (7)	78	82	0	58,16	NA

*Fra høsten 2024 blir det 3 nye programmer ved Matematisk institutt:
Finans, forsikring og økonomi; Teoretisk og anvendt matematikk; Data, modellering og beregninger

2.2 Sammenlikning med andre programmer i Norge

IBVs bachelorprogram er det desidert største av alle bachelorprogrammer i biologi, molekylærbiologi, og relaterte fag i Norge (tabell 2). Det nest største programmet er Bachelor i biologi ved UiB, med 99 plasser (dette instituttet tilbyr også eget program i molekylærbiologi). Vårt program har mye lavere snittpoeng ved oppmøte (51.21) enn biologi-programmet ved NTNU (hele 58.28 poeng), biologiprogrammet ved NMBU (55.82 poeng) og programmet Økologi og naturforvaltning ved NMBU (57.03 poeng). Se seksjon 4 for tall på dette over tid. Selv om UiB har litt lavere snittpoeng enn oss i sitt biologiprogram (50,32) er det her flere som møter til studiestart av de som får tilbud om plass. De fyller også plassene i sitt molekylærbiologi-program.

Tabell 2. Oversikt over bachelorprogrammer i biologi, molekylærbiologi, og liknende fag ved ulike universiteter i Norge (tall fra 2023). Antall plasser er per nye årskull. Poenggrense gjelder ordinær kvote, snittpoeng er blant møtte studenter.

Institusjon	Sted	Programnavn	Studiekode	Plasser	Møtt	PoengGrense	PoengSnitt
UiO	Oslo	Biovitenskap	185327	160	136	39,6	51,21
NTNU	Trondheim	Biologi	194327	75	93	52,7	58,28
NTNU	Trondheim	Havbruksingeniør	194021	35	40	53,2	54,69
NTNU	Trondheim	Bioingeniørfag	194702	80	76	54,7	55,87
NTNU	Ålesund	Bioingeniørfag	194299	35	31	45	55,87
NTNU	Ålesund	Biomarin innovasjon	194298	35	33	49,9	53,67
NTNU	Ålesund	Bioteknologi	194427	20	15	46	52,84
UiB	Bergen	Biologi	184327	99	107	0	50,32
UiB	Bergen	Molekylærbiologi	184865	40	50	48,5	53,82
NMBU	Ås	Biologi	192327	50	42	46,9	55,82
NMBU	Ås	Akvakultur	192298	30	17	0	46,22
NMBU	Ås	Husdyrvitenskap	192321	35	16	0	50,42
NMBU	Ås	Plantevitenskap	192842	25	15	0	51,39
NMBU	Ås	Skogfag	192322	35	40	44,8	50,66
NMBU	Ås	Økologi og naturforvaltning	192388	30	29	0	57,03
NMBU	Ås	Bioteknologi	192299	40	46	51,6	57,61
NMBU	Ås	Miljøvitenskap	192377	40	13	0	50,02
Nord	Bodø	Biologi	204327	30	13	0	47.48
Nord	Steinkjer	Husdyrfag	204321	32	15	0	50,63
Nord	Steinkjer	Naturforvaltning	204388	37	21	0	48,51
UiT	Tromsø	Biologi	186327	60	21	0	52,47
UiT	Tromsø	Bioteknologi	186299	15	12	0	45,34
UiT	Tromsø	Fiskeri- og havbruksvitenskap	186331	15	12	48	50,81
USN	Bø	Natur- og miljøforvaltning	222315	45	32	0	47,85
UiA	Kristiansand	Biologi	201327	40	35	0	48,99

3 Sammenlikning av faglig innhold i biologi-programmer i Norge

Tabell 3. En oppsummering av innholdet i obligatoriske fellesemner i bachelorutdanninger i biologi i Norge (programmer med studiekode -327, informasjon hentet fra nettsidene til hvert universitet, januar 2024). Studiepoeng er oppsummert over emner som inkluderer hhv felt, lab, økologi/ evolusjon, molekylærbiologi/ fysiologi/ mikrobiologi, matte/ programmering/ statistikk, fysikk og kjemi. Noen emner passer i flere kategorier (for eksempel inkluderer både lab og felt), og er da telt med i alle kategoriene. Nord har to kjemirelaterte emner der total kjemiandel er satt til 10 SP her. Se full oversikt over emner i tabell 4.

Institusjon	Sted	Programnavn	Studiekode	SPFelt	SPLab	SPØkoEvo	SPMolFysioMikro	SPMatProgStat	SPFysikk	SPKjemi
UiO	Oslo	Biovitenskap	185327	0	50	20	40	20	10	20
NTNU	Trondheim	Biologi	194327	15	60	30	35	15	0	10
UiB	Bergen	Biologi	184327	10	40	30	40	30	10	10
NMBU	Ås	Biologi	192327	20	50	35	50	30	0	10
UiT	Tromsø	Biologi	186327	30	100	55	65	15	0	10
Nord	Bodø	Biologi	204327	30	90	52,5	45	22,5	0	10
UiA	Kristiansand	Biologi	201327	50	80	50	40	0	0	10

Tabell 3 viser en oppsummering av det faglige innholdet i de obligatoriske fellesemnene i bachelorutdanninger i biologi som tilbys ved ulike universiteter i Norge (se full oversikt over emner i tabell 4), summert over studiepoeng for emnene i ulike kategorier. Merk at programmene kan sette ytterligere krav utover fellesdelen, for eksempel krever IBV at 40 sp blant de valgbare emnene videre må tas ved IBV. Oversikten over tar kun for seg fellesdelen som alle studenter i programmet tar, og som regel dekker denne de første semestrene. IBVs bachelorprogram skiller seg ut på flere måter (se tabell 4 for detaljer):

- Det eneste som ikke tilbyr noen fellesemner som dekker økologi / evolusjon / biomangfold det første året.
- Programmet med færrest studiepoeng i økologi / evolusjon / biomangfold blant obligatoriske fellesemner.
- Det eneste som ikke dekker populasjons- og samfunnsøkologi blant de obligatoriske fellesemnene.
- Eneste program som krever både fysikk og to kjemiemner blant obligatoriske fellesemner.
- Det eneste som ikke inkluderer feltarbeid blant obligatoriske fellesemner.

IBVs bachelorprogram har stor tyngde mot molekylærbiologi, fysikk og kjemi, med lite vekt på økologi og evolusjon i fellesdelen. Vi er det eneste programmet som ikke tilbyr et emne som dekker populasjons- og samfunnsøkologi blant de obligatoriske fellesemnene (Biomangfold dekker ikke dette). Alle andre programmer har minst ett fellesemne med «økologi» i navnet.
Vi er det eneste programmet som krever både fysikk og to kjemiemner blant obligatoriske emner det første året (til sammen 30 sp). De fleste programmer inkluderer kun ett kjemiemne, og de fleste har ingen fysikkemner. UiB har et emne i mekanikk og varmelære (3. semester) som fremstår som et brukerkurs i fysikk mer rettet mot biologistudenter enn fysikkemnet som vi krever, og har kun ett kjemiemne. Nord har to kjemirelaterte emner det første året (til sammen 22.5 studiepoeng), men det største av disse dekker også cellebiologi, og de har ingen fysikkemner.

Både UiB, NMBU og Nord har flere studiepoeng i statistikk, matematikk og programmering enn det som tilbys i IBVs program (merk at det her er telt med et eget emne i vitenskapelig metode for Nord). I motsatt ende er UiA som ikke tilbyr slike emner de første tre semestrene (matte og statistikk kan der velges i fjerde og femte semester), men legger stor vekt på både felt og lab.

Tabell 4. Oversikt over obligatoriske fellesemner ved ulike bachelorutdanninger i Norge. ExPhil ved UiO tas i 4, 5, eller 6 semester. Emner er klassifisert mhp felt (ikke ekskursjon), lab, økologi/ evolusjon, molekylærbiologi/ fysiologi/ mikrobiologi, matte/ programmering/ statistikk, fysikk og kjemi. Noen emner passer i flere kategorier.

Emne	Emnekode	Semester	Studiepoeng	ØkoEvo	MatProgStat	Fysikk	Kjemi	MolFysioMikro	Felt	Lab
UiO Bachelor i biovitenskap (185327):										
Beregningsmodeller	BIOS1100	1	10	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Celle- og molekylærbiologi	BIOS1110	1	10	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Generell kjemi	KJM1101	1	10	Nei	Nei	Nei	Ja	Nei	Nei	Ja
Fysiologi	BIOS1120	2	10	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Biokjemi I	BIOS1130	2	10	Nei	Nei	Nei	Ja	Ja	Nei	Ja
Innføring i fysikk	FYS1001	2	10	Nei	Nei	Ja	Nei	Ja	Nei	Nei
Evolusjon og genetikk	BIOS1140	3	10	Ja	Nei	Nei	Nei	Nei	Nei	Nei
Biologisk mangfold	BIOS1150	3	10	Ja	Nei	Nei	Nei	Nei	Nei	Ja
Innføring anvendt statistikk	STK1000	3	10	Nei	Ja	Nei	Nei	Nei	Nei	Nei
NTNU Bachelor i biologi (194327):										
Økologi, adferd og evolusjon	BI1003	1	15	Ja	Nei	Nei	Nei	Nei	Nei	Nei
Generell kjemi	KJ1002	1	15	Nei	Nei	Nei	Ja	Nei	Nei	Ja
Celle- og molekylærbiologi	BI1001	2	15	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Faunistikk og floristikk	BI1002	2	15	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Dyrenes struktur og funksjon	BI1006	3	7,5	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Plantenes struktur og funksjon	BI1007	3	7,5	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Brukerkurs i matematikk A	MA0001	3	7,5	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Ex. Phil. For naturvitenskap og teknologi	EXPH0300	3	7,5	Nei	Nei	Nei	Nei	Nei	Nei	Nei
UiB Bachelor i biologi (184327):										
Innføring i evolusjon og økologi	BIO100	1	10	Ja	Nei	Nei	Nei	Nei	Nei	Nei
Innføring i molekylærbiologi	MOL100	1	10	Nei	Nei	Nei	Nei	Ja	Nei	Nei
Brukerkurs i matematikk / Matematikk for naturvitenskap	MAT101 / MAT105	1	10	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Organismebiologi 1	BIO101	2	10	Ja	Nei	Nei	Nei	Ja	Nei	Ja
Innføring i programmering	INF100	2	10	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Kjemi grunnkurs	KJEM109	2	10	Nei	Nei	Nei	Ja	Nei	Nei	Ja
Grunnkurs i mekanikk og varmelære	PHYS101	3	10	Nei	Nei	Ja	Nei	Nei	Nei	Nei
Organismebiologi 2	BIO102	3	10	Ja	Nei	Nei	Nei	Nei	Ja	Nei
Elementær statistikk	STAT101	3	10	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Cellebiologi og genetikk	BIO103	4	10	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Komparativ fysiologi	BIO104	4	10	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Ex. Phil.		4	10	Nei	Nei	Nei	Nei	Nei	Nei	Nei
NMBU Bachelor i biologi (192327):										
Innføringsemne i biologi	BIO140	1	5	Ja	Nei	Nei	Nei	Ja	Ja	Ja
Cellebiologi	BIO100	1	5	Nei	Nei	Nei	Nei	Ja	Nei	Nei
Brukerkurs i matematikk eller Kalkulus	MATH100/MATH111	1	10	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Generell zoologi	ZOOL100	1	7,5	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Ex. Phil. eller Ex.phil seminarversjon	PHI100/PHI101	1	10	Nei	Nei	Nei	Nei	Nei	Nei	Nei
Plantediversitet	BOT100	2	7,5	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Grunnleggende økologi	ECOL100	2	5	Ja	Nei	Nei	Nei	Nei	Nei	Nei
Generell kjemi	KJM100	2	10	Nei	Nei	Nei	Ja	Nei	Nei	Ja
Generell mikrobiologi 1	BIO130	3	5	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Grunnleggende plantefysiologi	BOT130	3	5	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Biologisk dataanalyse	STIN100	3	10	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Genetikk	BIO120	4	10	Ja	Nei	Nei	Nei	Nei	Nei	Ja
Statistikk	STAT100	4	10	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Molekylærbiologi	BIO210	5	10	Nei	Nei	Nei	Nei	Ja	Nei	Nei
Fysiologi	HFX201	5	10	Nei	Nei	Nei	Nei	Ja	Nei	Nei
Evolusjonsbiologi	BIO223	6	10	Ja	Nei	Nei	Nei	Nei	Nei	Nei
UiT Bachelor i biologi (186327):										
Innføring i biologi	BIO-1105	1	10	Ja	Nei	Nei	Nei	Ja	Nei	Nei
Introduksjon til kjemi og kjemisk biologi	KJE-1001	1	10	Nei	Nei	Nei	Ja	Ja	Nei	Ja
Kvantitative metoder	BIO-1007	1	5	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Evolusjon	BIO-1008	1	5	Ja	Nei	Nei	Nei	Nei	Nei	Nei
Celle- og molekylærbiologi	MBI-1002	2	15	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Zoologi	BIO-1104	2	10	Ja	Nei	Nei	Nei	Nei	Nei	Ja
Innføring i mikrobiologi	BIO-1601	2	5	Nei	Nei	Nei	Nei	Nei	Nei	Ja
Økologi	BIO-2017	3	10	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Botanikk	BIO-1103	3	10	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Plantefysiologi	BIO-2016	3	10	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Økologi	BIO-2017	4	10	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Dyrefysiologi	BIO-2002	4	10	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Genetikk, molekylærbiologi og informatikk	BIO-2018	4	10	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Studiedesign og dataanalyse	BIO-2004	5	10	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Ex. Phil. Tromsøvarianten	FIL-0700	5	10	Nei	Nei	Nei	Nei	Nei	Nei	Nei
Nord Bachelor i biologi (204327):										
Biologisk mangfold I - Protister og planter	BIO1015	1	7,5	Ja	Nei	Nei	Nei	Nei	Nei	Ja
Økologi	BIO1017	1	7,5	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Biologisk mangfold II - Invertebrater	BIO1016	1	7,5	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Prinsipper innen kjemi og biokjemi	KJE1002	1	7,5	Nei	Nei	Nei	Ja	Ja	Nei	Ja
Essensiell cellebiologi og biokjemi	BIO1018	2	15	Nei	Nei	Nei	Ja	Ja	Nei	Ja
Matematikk og statistikk	MAT1014	2	7,5	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Evolusjon og genetikk	BIO1013	2	7,5	Ja	Nei	Nei	Nei	Nei	Nei	Ja
Molekylær cellebiologi	BIO2009	3	7,5	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Vitenskapelige metoder	MET1006	3	15	Nei	Ja	Nei	Nei	Nei	Nei	Nei
Biologisk mangfold III - Vertebrater	BIO1019	3	7,5	Ja	Nei	Nei	Nei	Nei	Nei	Ja
Marinbiologi og oseanografi	BIO2010	4	15	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Zoofysiologi	BIO1021	4	15	Nei	Nei	Nei	Nei	Ja	Nei	Ja
UiA Bachelor i biologi (201327):										
Introduksjon til biologien	BIO112-1	1	10	Ja	Nei	Nei	Nei	Ja	Ja	Ja
Cellebiologi med genetikk	BIO111-1	1	10	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Human fysiologi og anatomi	BIO104-1	1	10	Nei	Nei	Nei	Nei	Ja	Nei	Ja
Evolusjonsbiologi	BIO113-1	2	10	Ja	Nei	Nei	Nei	Nei	Nei	Ja
Zoologi	BIO103-1	2	10	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Botanikk	BIO102-1	2	10	Ja	Nei	Nei	Nei	Nei	Ja	Ja
Molekylærbiologi	ML-208-1	3	10	Nei	Nei	Nei	Nei	Ja	Ja	Ja
Generell økologi	BIO206-1	3	10	Ja	Nei	Nei	Nei	Nei	Ja	Nei
Generell kjemi	KJ-111-1	3	10	Nei	Nei	Nei	Ja	Nei	Nei	Ja
Bacheloroppgave	BIO-300-1	6	20	Ja	Nei	Nei	Nei	Ja	Nei	Nei
Ex. Phil.	EX-100-1	6	10	Nei	Nei	Nei	Nei	Nei	Nei	Nei

4 Trender: Utvikling i IBVs bachelorprogram over tid sammenliknet med andre

4.1 Dataene som er inkludert

Avsnittene under tar for seg trender i opptakstall, poeng, gjennomføringsgrad, og studentenes tilfredshet med studiet (Studiebarometeret), for diverse bachelorprogrammer i biologi og molekylærbiologi i Norge fra 2008 til i dag (oversikt i Tabell 5). Enkelte tidsserier går ikke like langt tilbake, men alle år det finnes data for er med. Tallene er hentet fra Database for Høyere Utdanning (DBH), Samordna Opptak, og Nokut (Studiebarometeret). IBVs nåværende program (Bachelor i biovitenskap, forkortet til UiO_IBV i grafene under) erstattet de to tidligere programmene i 2017 (Bachelor i biologi forkortet til UiO_Bio, og Bachelor i molekylærbiologi og biologisk kjemi forkortet UiO_Mol).

Merknader:

R2-kravet: Noen biologiprogrammer var med på prøveordning med R2-krav om matematikk ved opptak (Universitets- og høgskolerådet), men ikke alle og ikke like lenge. De fleste biologiprogrammene i Norge var ikke med i ordningen, men IBV (UiO) var med i årene 2019, 2020 og 2021, mens i Bergen (UiB) var begge programmene (Molekylærbiologi og Biologi) med bare i 2019. Derfor vil søker- og opptakstallene se annerledes ut for UiB i 2019, og for UiO i 2019, 2020 og 2021, enn for de andre programmene.

Omstrukturering osv.: Flere av universitetene har gjennomgått omstruktureringer i løpet av tidsperioden 2008-2023, og programmer har blitt opprettet og lagt ned i løpet av perioden. Universiteter, fakulteter og institutter har skiftet navn, slått seg sammen osv. I den grad det er mulig er samme studieprogram fulgt over tid selv om navn på institutt/fakultet/universitet er endret i løpet av perioden. For IBV er det gamle studieprogrammet i biologi forkortet til "UiO_BIO" og det gamle studieprogrammet i molekylærbiologi for "UiO_Mol", mens det nye sammenslåtte (fra 2017) er kalt "UiO_IBV".

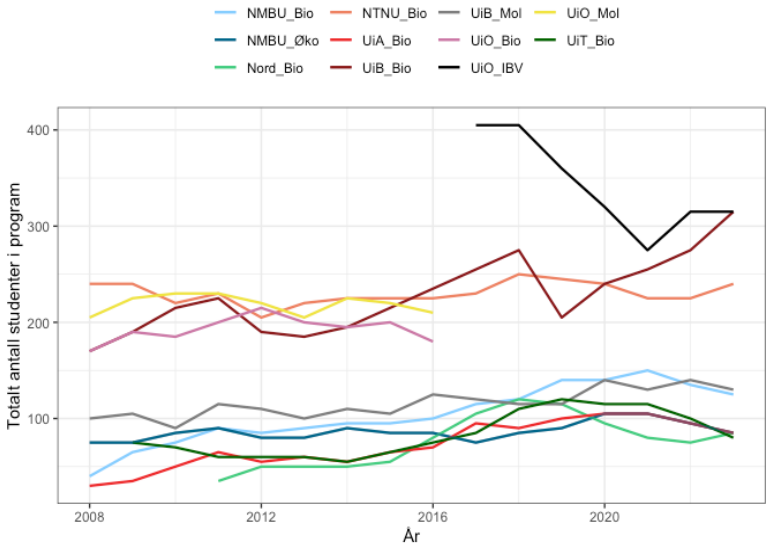
Planlagte plasser: For enkelte år og programmer er det noe usikkerhet i tallene på antall planlagte plasser (rapportert ulikt ulike steder). Dette påvirker eventuelt bare beregningen av andelen fylte plasser.

Studiebarometeret: Enkelte år/program har lav svarprosent, så dette er ganske usikre data. De kan kanskje likevel si noe om forskjellen mellom programmer.

Tabell 5. Oversikt over inkluderte bachelorprogrammer i trendanalysene. Alle programmer i «Biologi» (studiekode -327), er med, samt to programmer i «Molekylærbiologi» (studiekode -865) og programmet i Økologi og naturforvaltning ved NMBU. UiTs program i Biologi skiftet navn i 2019, men er ellers det samme så dataseriene for disse er slått sammen i grafene under. Institutter og fakulteter er ikke spesifisert da det har skjedd mange omstruktureringer i løpet av perioden fra 2008 til i dag. Forkortelse refererer til dette dokumentet og grafene under.

Institusjon	Studiested	Programnavn	Studiekode	År inkludert	Forkortelse
UiO	Oslo	Biovitenskap	185 327	2017-2023	UiO_IBV
UiO	Oslo	Biologi	185 865	2008-2016	UiO_Bio
UiO	Oslo	Molekylærbiologi og biologisk kjemi	185 327	2008-2016	UiO_Mol
NTNU	Trondheim	Biologi	194 327	2008-2023	NTNU_Bio
UiT	Tromsø	Biologi, klima og miljø	186 327	2009-2018	UiT_Bio
UiT	Tromsø	Biologi	186 327	2019-2023	UiT_Bio
NMBU	Ås	Biologi	192 327	2008-2023	NMNU_Bio
NMBU	Ås	Økologi og naturforvaltning	192 388	2008-2023	NMNU_Øko
UiB	Bergen	Biologi	184 327	2008-2023	UiB_Bio
UiB	Bergen	Molekylærbiologi	184 865	2008-2023	UiB_Mol
Nord	Bodø	Biologi	204 327	2011-2023	Nord_Bio
UiA	Kristiansand	Biologi	201 327	2008-2023	UiA_Bio

4.2 Totalt antall studenter over tid



Figur 1. Totalt antall studenter på de ulike bachelorprogrammene, fra 2008-2023. Bachelorprogrammene i Biologi og Molekylærbiologi ved UiO ble erstattet av IBVs nåværende program Biovitenskap i 2017. UiB, NMBU, Nord, og UiA har alle økt antall plasser på sine programmer i Biologi i løpet av perioden. Nedgangen ved UiO_IBV (nåværende program) skyldes i stor grad lave opptakstall i R2-årene 2019-2021.

Figur 1 reflekterer også forskjellen i størrelse på de ulike studieprogrammene, der IBVs nåværende program er klart størst med 160 tilgjengelige plasser per år (totalt 480 plasser dersom

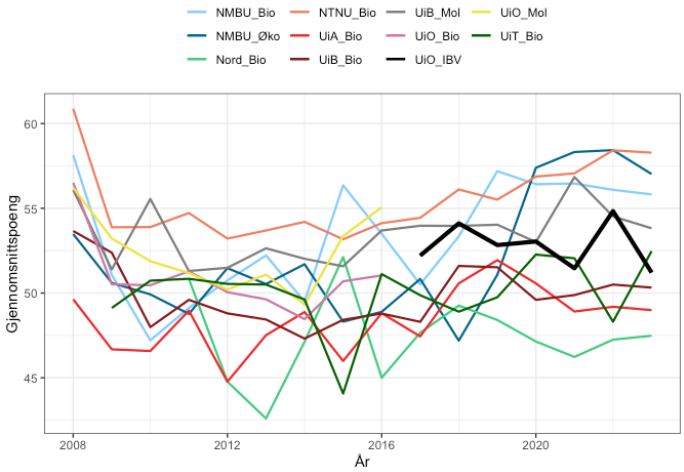
alle var fylt og ingen sluttet), mens UiBs program Biologi er nest størst med 99 plasser per år (totalt 297) som de klarer å fylle.

Flere endringer har skjedd i løpet av spesielt de siste årene (fra 2017), som har gjort at konkurransen om biologistudentene i Norge har økt. Spesielt har flere universiteter økt antall plasser: UiB økte antall plasser på Biologi-programmet fra 85 til 99 i 2016, UiA økte antall plasser fra 30 til 40 i 2017, NMBU økte gradvis antall plasser på Biologi fra 25 før 2015 opp til 50 i 2021, og Nord økte fra 20 til 30 plasser i 2017 (til sammen en økning på 59 plasser i biologi-programmene). UiO, UiT og NTNU har hatt stabilt antall plasser i hele perioden (hhv 160, 60 og 75 per år).

Nedgangen i totalt antall studenter ved IBV de siste årene skyldes hovedsakelig lavere opptak i R2-årene. Men selv etter at R2-kravet ble droppet har ikke opptakstallene tatt seg opp så mye som de burde (se seksjon 4.5, figur 5).

4.3 Gjennomsnittlige poeng ved opptak

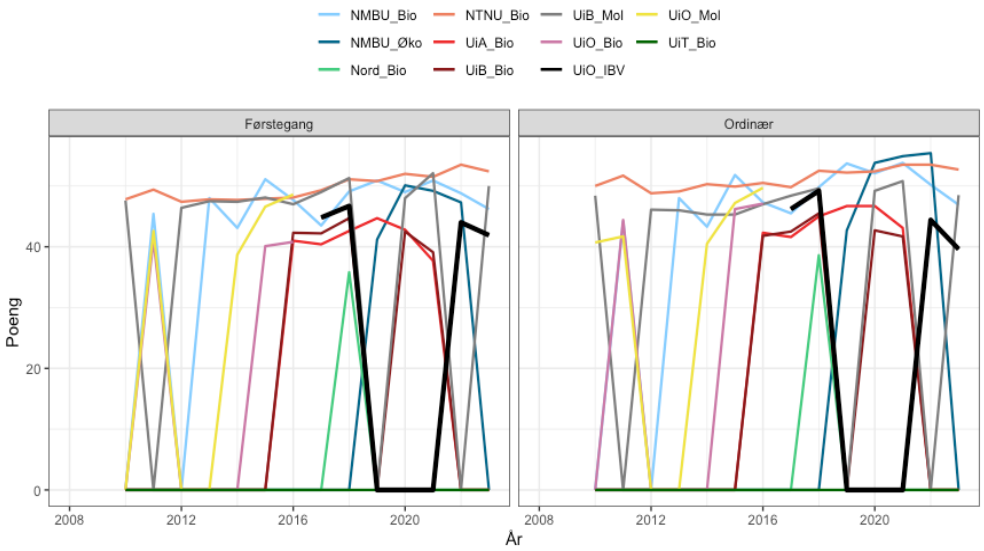
Gjennomsnittlige poeng ved opptak blant møtte studenter sier muligens noe om det generelle nivået blant studentene, men det er mye variasjon fra år til år (Figur 2). UiO ligger midt på treet (og gjorde også det med de gamle programmene), mens NTNU har ligget jevnt høyt hele veien, og NMBU (program Biologi, og program Økologi og naturforvaltning) har ligget høyt de siste femti årene. I en situasjon der konkurransen om studentene har økt (seksjon 4.2) fremstår det som at NTNU og NMBU når best frem til flest studenter, og til de mest faglig interesserte og motiverte studentene.



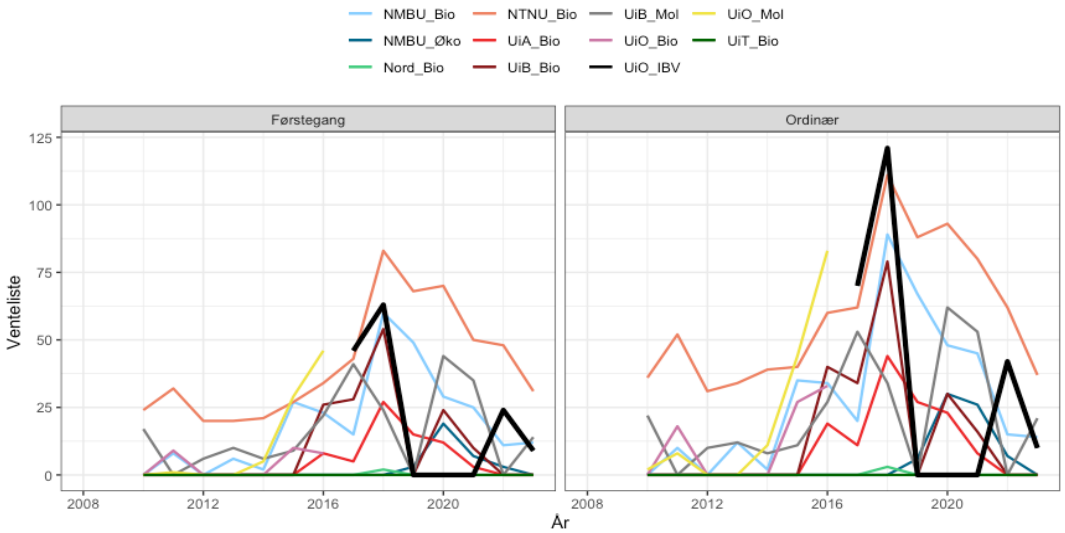
Figur 2. Gjennomsnittlig opptakspoeng blant nye studenter (møtte) på ulike programmer, 2008-2023. IBVs nåværende program uthevet.

4.4 Poenggrense og venteliste ved opptak

Poenggrense ved opptak (Figur 3) varierer også mye fra år til år, men det er noen trender og hovedforskjeller mellom institusjoner. Spesielt ser det ut til at NTNU og NMBU (Biologi) ligger jevnt høyt, sammen med NMBUs program Økologi og naturforvaltning de siste årene (unntatt 2023). Tallene for venteliste (Figur 4) svinger også mye, i samsvar med poengtallene. Igjen er det spesielt NTNU og NMBU som holder jevnt høyt nivå.



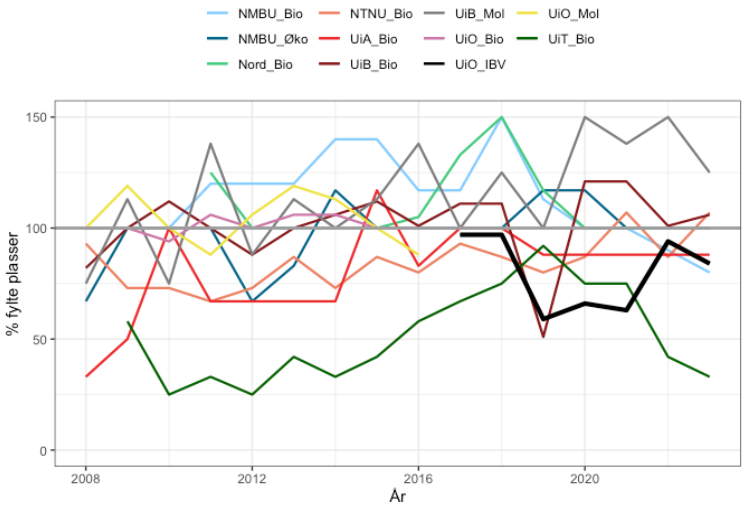
Figur 3. Poenggrense ved opptak ulike bachelorprogrammer mellom 2010-2023, for førstegangskvote og ordinær kvote, etter suppleringsopptaket. Null poeng betyr at alle kvalifiserte søkere fikk tilbud. IBVs nåværende program uthevet



Figur 4. Antall på venteliste ved opptak (førstegangskvote og ordinær kvote, etter suppleringsopptaket) på ulike bachelorprogrammer, 2008-2023. IBVs nåværende program uthevet.

4.5 Andelen fylte studieplasser

Prosentandelen oppfylte plasser er beregnet basert på antall møtt i forhold til antall planlagte plasser, sistnevnte er noe usikker for enkelte programmer/år. Det ser ut til at UiT skiller seg ut med lav andel oppfylling, mens andre svinger mer rundt 100%. IBVs nye program har ligget under 100% siden starten, men tre av årene var med R2-krav som påvirket opptaket.

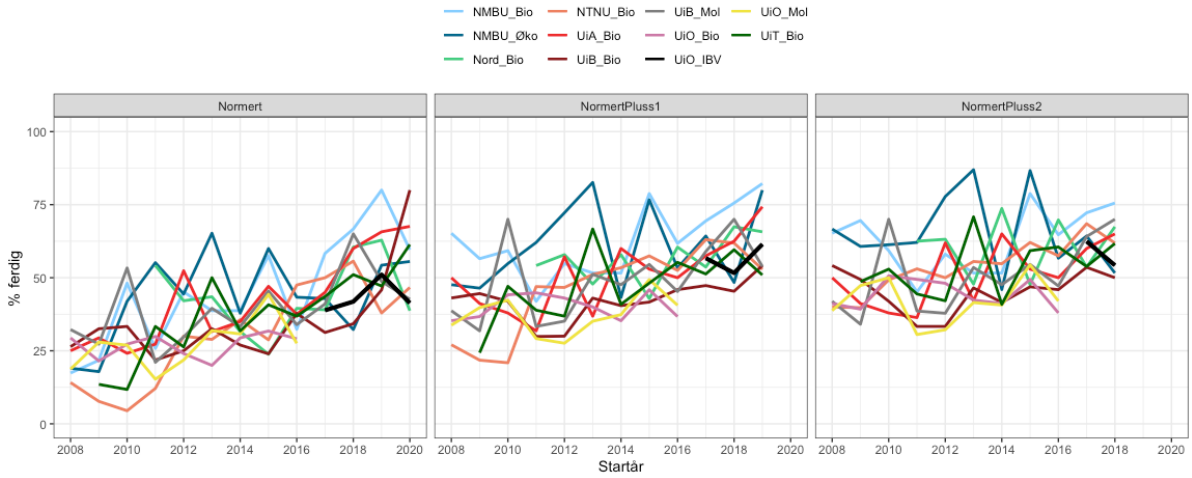


Figur 5. Prosent fylte plasser på ulike bachelorprogrammer, 2008-2023. Verdier større enn 100 betyr at flere ble tatt inn enn planlagt. IBVs nåværende program uthevet.

Figur 6 sammenlikner kun de gamle og nye programmene ved IBV. Selv om vi ser bort fra R2-årene (2019-2021) virker det som instituttet sliter mer med å fylle de 160 plassene i det nye programmet enn det som var tilfellet for de to gamle programmene. Det kan skyldes økt konkurranse med andre institusjoner om biologistudentene de senere årene, siden flere andre har økt antall plasser samt nye programmer har blitt startet opp. IBV ser ikke ut til å nå opp i den konkurransen med sitt nåværende program.

Figur 6. Prosent fylte plasser på de to gamle programmene (2008-2016, hver med 80 plasser) og nytt program (2017-2023, 160 plasser). Merk at 2019-2021 er «R2-år».

4.6 Gjennomføringsgrad

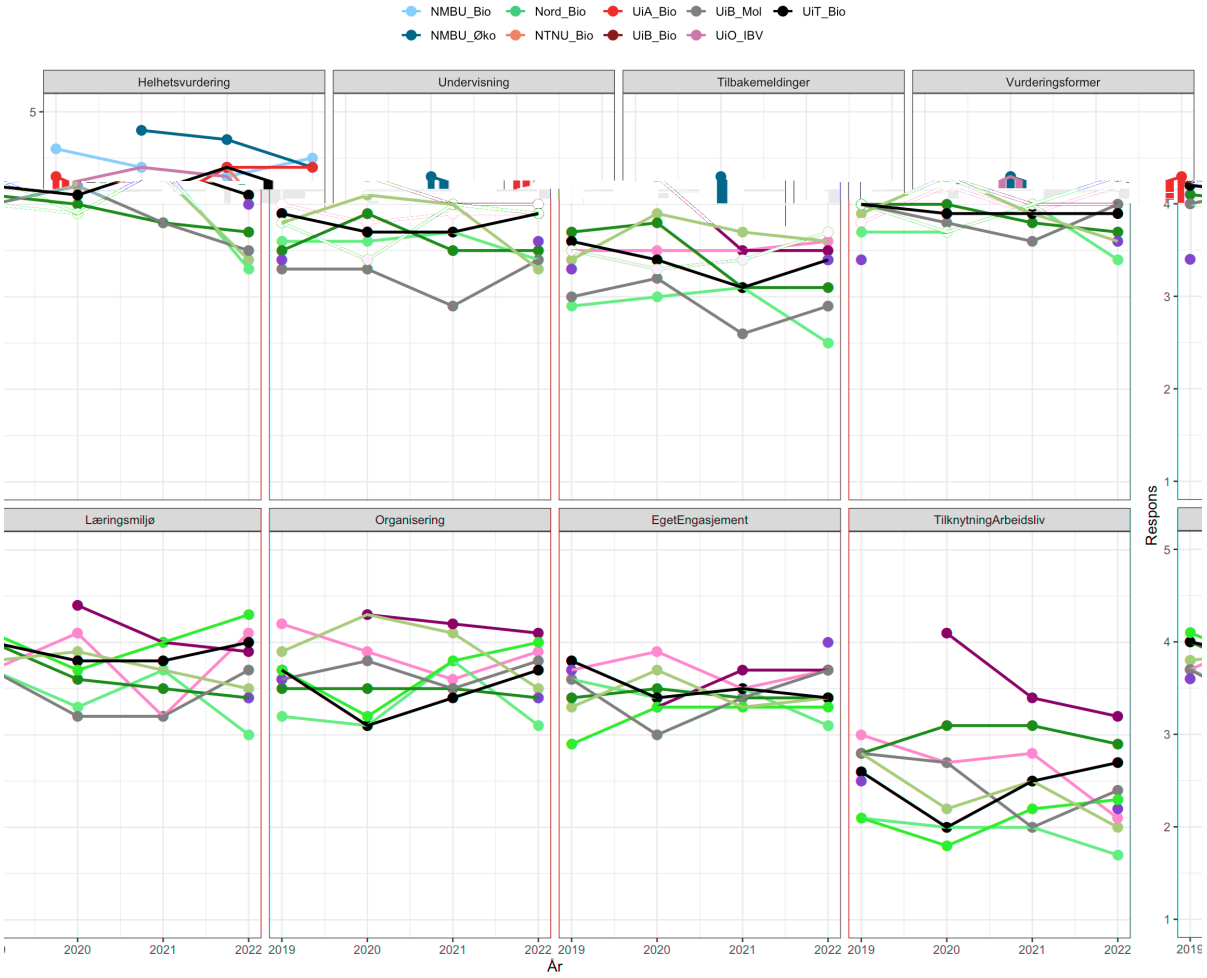


Figur 7. Prosent av startkullet som fullfører på normert tid, på normert tid pluss 1 år, eller på normert tid pluss 2 år, i ulike bachelorprogrammer. IBVs nåværende program uthevet.

Det har vært en generell økning i andelen studenter som fullfører på normert tid, for alle bachelorprogrammene i Norge (Figur 7). UiO ser ut til å følge denne generelle trenden, men IBVs program ligger ikke spesielt godt an sammenliknet med andre programmer (dårlig gjennomføring for kullene som startet i 2017- 2020 sammenliknet med andre).

4.7 Studiebarometeret

Studiebarometeret (Nokut) rapporterer evalueringer av programmet fra andreårsstudenter, tilgjengelige data er fra 2019 til 2022. Studentene svarer på mange spørsmål om studiet og det rapporteres en score fra 1 til 5 på diverse indekser samt en helhetsvurdering (Figur 8). Disse tallene er imidlertid usikre da det kan være få studenter som svarer i enkelte år og programmer. IBVs bachelorprogram ser ut til å stort sett ligge greit an på de fleste kriteriene sammenliknet med andre programmer (Figur 8). På helhetsvurdering og noen andre underliggende kriterier får programmet imidlertid dårlig score i 2022. Helhetsvurderingen påvirkes mye av parameterne undervisning og vurderingsformer, der vi får dårlig score i 2022 sammenliknet med tidligere år og med andre programmer i Norge. Vi gjør det heller ikke spesielt bra på andre parametere. Det er for tidlig å si om dette var et enkelt dårlig år eller en generell trend.

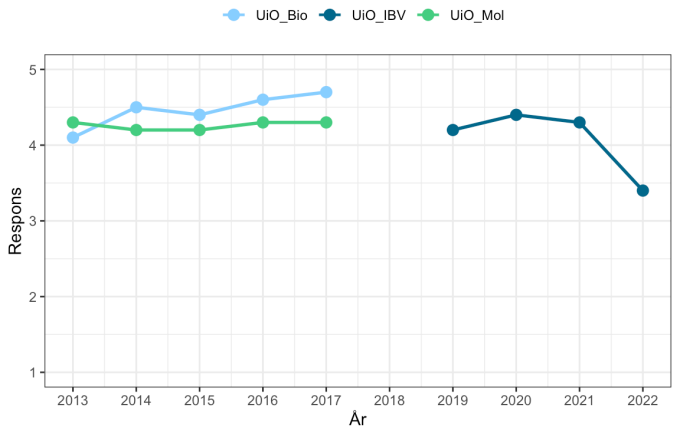


Figur 8. Resultater fra Studiebarometeret 2019-2022 for ulike biologi-programmer. Enkelte år og programmer har ingen tilgjengelige data pga for lav svarprosent. Hver kategori får en score fra 1 til 5.

I NOKUTs egen analyse for 2022 har de brukt maskinlæring til å finne ut hvilke faktorer som er viktigst for tilfredshet med studiene og konkluderer med følgende:

«Kort oppsummert så finner vi at dersom institusjonene ønsker å forbedre studentenes trivsel med studieprogrammet, så er det viktig å sørge for at programmet er godt organisert, og at studentene opplever undervisningen som god. I tillegg er det viktig at studentenes motivasjon er høy. Lite motiverte studenter er som regel også lite tilfredse studenter.»

Figur 9 viser resultater fra helhetsvurdering for de gamle programmene (2013-2017) og nytt program ved IBV (for gamle programmer har vi foreløpig kun tilgjengelig tall på helhetsvurdering). Det gamle programmet Biologi lå jevnt over noe høyere enn det gamle programmet Molekylærbiologi og biologisk kjemi. Det nye programmet Biovitenskap ligger omtrent midt mellom de gamle, unntatt i 2022.



Figur 9. Helhetsvurdering i Studiebarometeret for gamle programmer (2013-2017) og nytt program ved IBV (2019-2022).

5 En oppsummering

Gjennomgangen av tallene over tyder på flere utfordringer med IBVs nåværende bachelorprogram i biovitenskap, og at vi ikke tilstrekkelig oppfyller målene med bachelorutdanning skissert i del 1.2. IBVs nåværende program virker ikke å lykkes godt nok med

- Å tiltrekke studenter (plasser fylles ikke like bra som før, selv i årene uten R2-krav).
- Å tiltrekke de beste og best motiverte studentene (mye lavere poengsnitt ved opptak enn for eksempel NTNU og NMBU, store svingninger over tid).
- Å få nok studenter til å fullføre (lav fullføringsgrad sammenliknet med andre).
- Å tilby fleksible studieløp som møter alle biologistudenter, enten de er mest interesserte i molekylærbiologi/ biologisk kjemi, eller økologi/evolusjon/biomangfold.

Programmet skiller seg markant fra andre biologiprogrammer spesielt med innholdet i obligatoriske fellesemner de første semestrene. Det første året og fellesdelen er antakelig viktig for valg av studiested, samt for om studentene fortsetter på valgt studium når de er i gang. IBVs studieprogram er altså det eneste som ikke tilbyr noen emner i økologi og evolusjon det første året (se tabell 4), og det eneste som ikke tilbyr felt. Det er også programmet med færrest studiepoeng i økologi/evolusjon blant obligatoriske fellesemner. Totalt sett fremstår alle andre biologiprogrammer dermed mer attraktive for studenter som er interessert i økologi/ evolusjon/ biomangfold.

Samfunnet står i en klima- og naturkrise, og MNs og UiOs strategier legger vekt på at vi skal tilby utdanning som gjør studenter i stand til å bidra med å løse disse utfordringene. IBV (og Naturhistorisk museum) sitter med mye kompetanse om biomangfold, evolusjon, økologiske prosesser, og bevaringsbiologi, som ikke reflekteres i dagens bachelorprogram i og med at fellesdelen har så få emner som dekker disse områdene. Flere av våre studenter savner også et økt fokus på økologi og bevaringsbiologi i bachelorgraden (selv om mye kan tyde på at studentene med sterkest interesse for disse områdene velger andre studiesteder). Se for eksempel

kommentaren til nå ferdig masterstudent som også var bachelorstudent i biovitenskap ved IBV, Stine Dagsdatter Hagestad, nederst i denne artikkelen:

https://www.titan.uio.no/naturvitenskap/2022/masteroppgaven-hennes-havnet-midt-i-en-alvorlig-krimsak.html

Her sier hun blant annet at «Selv jeg som var bachelorstudent i biologi hadde veldig lite kunnskap om fugler og bevaringsbiologi generelt. Jeg savner mer fokus på bevaring og forvaltning av naturen i Norge allerede på bachelornivå».