

# Research and Innovation

Diagnostics and Technology Division  
Annual Report 2025



## Research and Innovation

Tittel:

Research and Innovation

Editorial staff: Divisional research council

Front page: AI generated image by COPILOT based on request: illustration for an annual research and innovation report in a hospital diagnostics and technology division. Abstract medical diagnostics ecosystem with radiology scan imagery, laboratory samples, digital pathology patterns, molecular structures, AI network nodes and subtle data streams

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## Director's Comments



The Diagnostics and Technology Division demonstrated a dedicated commitment to research and innovation in 2025, allocating 24.4 full time equivalent positions to these activities. Our mission is to conduct high-quality research and innovation that establishes a robust foundation for evidence-based practice and support informed priority- setting within diagnostic and technology services.

Collaboration with internal teams and external partners such as University of Oslo, OsloMet, industry stakeholders and other health institutions has been central to these efforts.

A growing emphasis on artificial intelligence and personalized medicine has opened new possibilities for early detection and enhanced patient outcomes. Through testing, implementation, and dissemination of innovative solutions with our partners, the division continues to strengthen the health service delivery. Targeted research into disease mechanisms and clinical challenges has resulted in the development of new biomarkers, detection methods and analyses which benefit patient diagnostics, treatment, and follow-up care.

EVALMEDHELSE the professional evaluation committee of Norway's research council, published a report in 2025. The report assessed research quality, conditions, and societal relevance of medical research across the country as well as providing guidance for future development. Akershus University Hospital were among the institutions evaluated; in this context, two research groups in our division received specific assessments. The report recognizes our division's strengths in research quality, institutional relevance, and high publishing activity. At the same time the committee points out several areas for development, such as the need for more stable and long-term funding, clearer prioritization of resources, and increased international collaboration- all vital for both high quality and financing.

The division's research committee brings together the research and development representatives from each department, led by the research and innovation manager. Meeting several times a year, the committee helps ensure effective coordination and continued progress in research activities.

I extend my sincere gratitude to all employees and collaborating partners for the effort and commitment that make our achievements possible.

**Janne Pedersen**

Director

## Introduction by the Research and Innovation Leader

The year 2025 was marked by strong research and innovation activity within the Division of Diagnostics and Technology. Through high-quality research, innovation and close collaboration with internal and external partners, we have continued to strengthen evidence-based services and our contribution to clinical research and innovation at Ahus. This is reflected in 78 scientific publications, which is the division's highest publication output since 2022 and NOK 20 million in awarded external research funding.

During 2025, we also approved the Research and Innovation Strategi 2026-2029, in close collaboration with the division's research committee. The committee serves as an important link between the divisional level and the professional departments and has contributed to broad involvement and shared ownership of the strategy. The strategy highlights key priority areas such as personalised medicine, artificial intelligence, digitalisation, method development, biobanks and clinical studies. This has been approved by the division's leadership group and provides a clear direction for the further development of research activity in DDT.

In April 2025, Clinic of Diagnostics and Technology, Institute of Medicine, Campus Ahus, UiO was opened, creating a bridge to the university for our areas.

I am also pleased that in 2025 we introduced internal research funding at divisional level allowing researchers to apply for internal funding. This sends an important signal that we want to continue investing in research, encourage new initiatives and create opportunities for promising projects to grow.

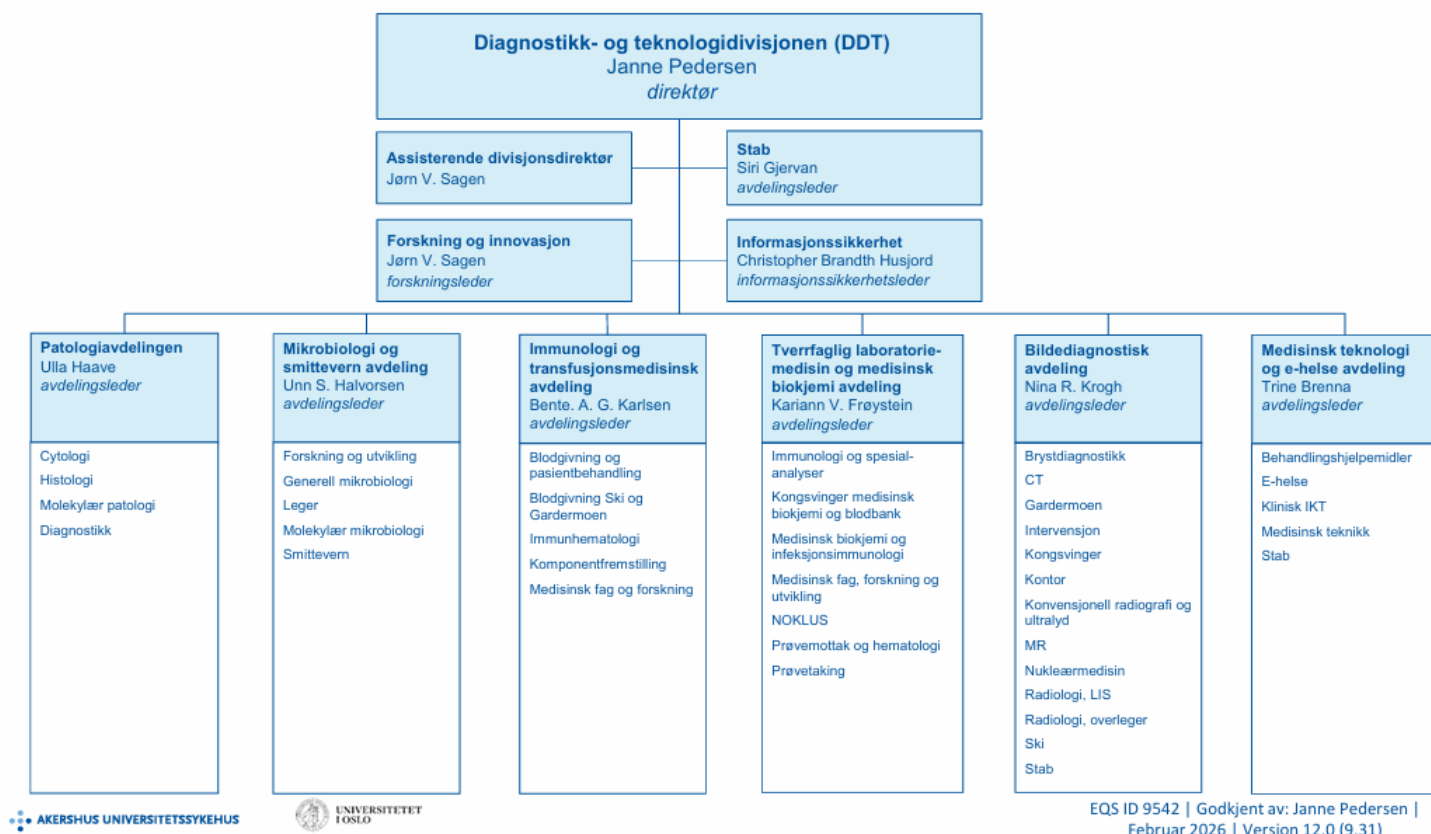
The annual Research and Innovation Seminar was another significant event during the year, providing a valuable forum for knowledge sharing, presentation of projects and professional networking across the division.

Finally, I would like to extend my sincere thanks to all collaborators. Research and Innovation are created through great collaboration and long-term commitment. I look forward to continuing this important work together in the years ahead.

**Jørn V. Sagen**

Deputy Divisional Director and Head of Research and Innovation

## Organization of research and innovation at the division



Research and innovation activities in the Diagnostics and Technology Division are embedded within the departments and coordinated through the Divisional Research Council. The Research and Innovation Unit supports strategic development, internal funding processes, reporting and collaboration across departments.

### The Divisional Research Council (DRC)

Members of DRC	Department
Jørn V. Sagen (leader)	DDT
Semhar Abraham (secretary)	Fol
Petter Hurlen*	Fol
Lise Lund-Berven	MIKS

Hege V. Aamot	MIKS
Faiza Mahmood	IMTRA
Per Christian Sæther	IMTRA
Gisle Berge	TLMB
Ragnhild Røysland	TLMB
Jens Borgbjerg	BDA
Siri L. Heck	BDA
Elisabeth Sivy Nginamau	PA
Mohammad-Vahid Bemanian	PA
Arian Ranjbar	MTE
Jesper Ravn	MTE

\*Retired November 2025.

The Divisional Research Council (DRC) (Divisions Forskningsutvalg) works with topics related to science and innovation, promoting activity throughout the division. There are 14 members- two representatives from each department. In 2025, the council had nine meetings.

## Research and Innovation highlights for 2025

### Annual Research and Innovation event

The annual Research and Innovation Seminar was held on October 22, 2025, at Thon Hotel Opera, with approximately 70 participants in attendance. The seminar featured guest lectures from the newly appointed Director of Medicine and Health Science at Ahus, as well as the Director of Communication.

Several PhD candidates, postdoctoral researchers, and recipients of DDT's internal research funding for 2025 were invited to present. Their presentations showcased a broad spectrum of innovative research spanning various fields, underscoring the diversity and vitality of the scientific community.

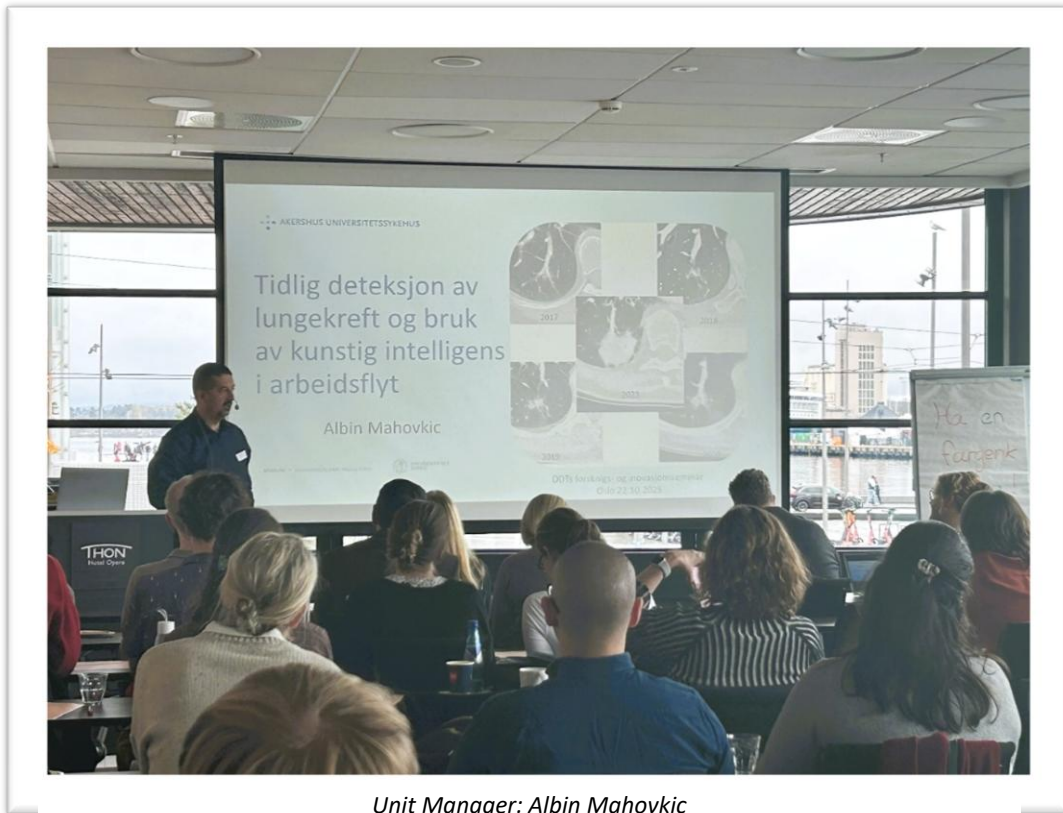
The seminar concluded with a sociable dinner, providing participants with an excellent opportunity to exchange ideas and reflect on the insights gained throughout the day.



*Assistant Divisional Director and Head of research and Innovation:*

*Jørn V. Sagen*

*Foto: DDT*



Unit Manager: Albin Mahovkic  
Foto: DDT



PhD Candidate: Elias Stenhede Johansson  
Foto: DDT

## 2025 in numbers



## Funding and Grants 2025

Source of funding	Project title	Project leader (Department)	Awarded amount (NOK)
Norsk overvåkingssystem for antibiotikaresistens hos mikrober (NORM)	2nd meeting of Bacterial genome sequencing pan-European network	Hege Vangstein Aamot (MIKS)	50 000
Helse Sør-Øst	Precision diagnostics for infectious diseases: Integrating mNGS and host factors to guide individualized treatment (PATHFINDER)	Hege Vangstein Aamot (MIKS)	9 000 000
NITO – Norges Ingeniør- og Teknologorganisasjon	Optimization of extraction of circulating cell-free DNA in plasma	Silje Mathiassen (PA)	65 000
Kreftforeningen	Integrating cytology samples into InPreD to increase access to precision medicine	Ulla Randen (PA)	4 000 000
Helse Sør-Øst	Detection of renal fibrosis and prediction of kidney function decline: The role of kidney MRI and markers of accelerated renal ageing	Anne Negård (BDA)	2 046 000
Newlands Clinic	Invasive group A streptococci - incidence, microbial characteristics and impact on clinical features and patient outcome	Anita Blomfeldt (Hege Vangstein Aamot fra 1.juli- MIKS)	300 000

HSØ Service Innovation funds	Home lab in home hospital	Tonje Holm Hjertaas (MTE)	250 000
Novartis Norge AS	AI-based risk assessment of recurrence in early HR+/HER-breast cancer	Jesper Ravn (MTE)	3 338 000
DDT Internal Research Funds	Ahus Foundation Model for Medical Imaging (AFMI)	Arian Ranjbar (MTE)	200 000
DDT Internal Research Funds	HPV-variasjon i pre-maligne og maligne lesjoner hos kvinner som lever med HIV	Kristiane Søreng (MIKS)	200 000
DDT Internal Research Funds	Colorectal cancer-microbiome	Ulla Randen (PA)	100 000
DDT Internal Research Funds	eMagine - early Magnetic resonance imaging to detect and predict complications and comorbidities in inflammatory bowel disease	Aida Kapic Lunder (BDA)	100 000
DDT Internal Research Funds	ARCHaM – Assessing Risk of Cervical disease via HPV and Microbiome	Milan Stosic (MIKS)	200 000
DDT Internal Research Funds	Exploring permissive and protective HLA class II molecules in patients experiencing alloimmunization towards blood group antigens following erythrocyte transfusions	Per Christian Sæter (IMTRA)	200 000
Ahus Internal Grants	Colorectal cancer: Microbiome-associated tumor-promoting inflammation; laying the groundwork for non-invasive biomarker	Vahid Bemanian (PA)	100 000

## PhD defenses in 2025

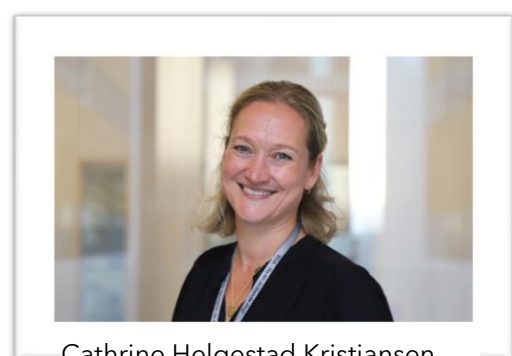


Milan Stosic

Profiling Intrahost HPV Variability – Relevance for risk stratification of cervical cancer development (OsloMet).

*Supervisor: Associate Professor Ole Herman Ambur, OsloMet.*

The primary objective of the investigation was to enhance detection of intrahost HPV variability and assess its value as an early indicator for cervical cancer risk, while refining sequencing techniques for high-risk HPV types. The research expanded and validated the TaME-seq method for whole-genome sequencing multiple high-risk HPV types, demonstrating its robust performance, including application to SARS-CoV2. A longitudinal study with HPV16-positive women was conducted to observe the evolution of intrahost viral variability over time. Results showed that higher levels of APOBEC3-induced mutations were associated with normal or low-grade lesions, whereas high-grade lesions exhibited notably fewer such mutations. Additionally, the team developed GENOMICON-Seq, a sequencing simulator designed to model biological mutations and technical errors, thereby supporting method optimization. These findings indicate that APOBEC3-driven intrahost variability may serve as an early biomarker for identifying HPV16-positive women at elevated risk of developing high-grade lesions. The study also delivered improved sequencing tools and workflows, supporting advanced HPV genomic analysis and reinforcing future diagnostic and risk-stratification strategies for cervical cancer prevention.



Cathrine Helgestad Kristiansen

Spectral CT with reduced iodine contrast dose in the evaluation of cardiovascular disease" for the doctoral degree in health sciences»(OsloMet).

*Supervisor: Associate Professor Peter Mæhre Lauritzen, Oslo University Hospital, OsloMet and Akershus University Hospital.*

In her thesis, Cathrine investigated evaluating whether the amount of iodine contrast used in CT angiography could be reduced by employing dual-energy spectral CT techniques and identifying which strategies for administering contrast would yield the most effective results.

The results are significant for clinical practice, demonstrating that dual-energy methods make it possible to cut the iodine contrast dose in half during CT angiography without sacrificing diagnostic quality. While higher energy levels result in less noise, it is the increased attenuation at lower energy levels that is essential for achieving the optimal contrast-to-noise ratio.

Reducing iodine contrast brings clear benefits to patients, lessens environmental impact, and lowers healthcare costs, highlighting the value of adopting this technology.



Faiza Mahmood

Allergy among blood donors and effect of supplementary treatment with the *Agaricus blazei*-based mushroom extract, Andosan in allergic and asthma patients (UiO).

*Supervisor: Associate Professor Lise Sofie Haug Nissen-Meyer, University of Oslo*

In her thesis, Faiza investigated allergic sensitization among blood donors and their impact on blood transfusions. In addition, she examined whether a mushroom extract (based on *Agaricus blazei* Murill, AbM) could affect allergies and asthma symptoms in patients undergoing allergen specific immunotherapy.

The main focus was to determine the prevalence of IgE antibodies in different groups of blood donors (both randomly selected and selected based on self-reported allergy or following allergic transfusion reactions in recipients of blood). Effects of AbM-supplementation on asthma and allergy symptoms and biological markers was also assessed through two clinical trials—one involving blood donors and another with asthma and allergy patients, both using intervention and placebo groups. The results showed no clear objective benefit of the mushroom extract on allergic disease. However, the research highlighted a high occurrence of IgE antibodies and increased poly-sensitization, especially in donors linked to allergic transfusion reactions, underlining the need for further study into the causes and implications for blood transfusions from sensitized donors.

# 2025 annual research and innovation reports from the seven departments

## Department of Diagnostic Imaging (BDA)

### Research Group

The Department of Diagnostic Imaging maintains and further develops its role as a strong clinical and academic environment in advanced imaging. The research group includes radiologists, radiographers and physicists working closely together with clinicians on translational and clinically driven projects, covering a broad range of medical imaging.

The department benefits from access to state-of-the-art spectral detector CT, advanced MRI, and interventional radiology facilities, which form the basis for both ongoing clinical studies and methodological development projects.

The department currently has 10 PhD candidates and 7 staff members engaged in postdoctoral work. In addition, 4 doctors combine clinical consultant roles with academic positions, and a radiographer holds a teaching position at OsloMet.

The year also marked the retirement of Professor Jonn Terje Geitung. His contribution to building the department's research, PhD supervision and teaching of medical students was recognized with a farewell seminar. The position has been filled by a newly appointed Associate Professor Anselm Schulz.

### Research Activity

The department's research activity includes a wide spectrum of studies across cardiothoracic, abdominal, musculoskeletal and neuroimaging as well as methodological research. External funding was obtained in 2025 for several of these projects.

Ongoing cardiothoracic studies include CT-based lung cancer screening, CMR assessment of myocardial fibrosis and function, and optimization of spectral CT for cardiac and pulmonary angiography.

In abdominal and urogenital imaging, current projects focus on advanced diagnostic imaging and screening in prostate cancer, MRI for inflammatory bowel disease, and the use of both contrast-enhanced and low-dose CT as alternatives or supplements to MRI for renal tumors. The department has also successfully

implemented CT-guided cryoablation for renal cell carcinoma, offering a minimally invasive treatment option.

In musculoskeletal imaging, studies compare standing versus supine radiographs in ankle fractures and assess imaging factors influencing outcomes in lumbar spinal stenosis and spondylolisthesis. In addition, methodological projects on AI in radiology aim to improve image interpretation, clinical workflow and protocol optimization.

In neurology, research activities focus on imaging in acute ischemic stroke and intracerebral hemorrhage.

In addition, the department actively contributes to and supports clinical research across multiple hospital specialties, working closely with clinical departments to design, conduct and implement imaging-based studies that directly improve patient care.

2025 was a milestone year for academic progression within the department's radiography group, when Cathrine Helgestad Christiansen as the first radiographer at Ahus successfully defended her PhD thesis. Further, Stine Andenæs completed her master's thesis

The department contributed to a total of 40 articles in peer-reviewed journals, including 8 with a first and/or last author from the department, and 12 publications in Level 2 journals. (see separate reference list)

### Public Outreach

The department had a strong presence at national and international congresses. Researchers from the department gave a total of 21 oral presentations at various national and international meetings, including the European Society of Cardiology Congress; the meetings of the European Society of Gastrointestinal and Abdominal Radiology, the European and Nordic Societies of Urogenital Radiology, and the European Society of Coloproctology, the Nordic Congress of Radiology; as well as several Scandinavian interest group meetings. The lectures mainly focused on optimization of advanced CT and MRI techniques, including spectral CT, CT pulmonary angiography, CMR strain analysis, and imaging-based response assessment in cancer (RECIST/iRECIST). Additional themes included complex hepatobiliary imaging, colorectal and renal cell carcinoma staging and ablation, 3D visualization for personalized surgery, and lung cancer screening.

We were represented at the Nordic Congress of Radiology 2025, the Global Society of Cardiovascular Computed in Amsterdam and the IEEE International Symposium on Circuits and Systems with posters on advanced cardiac CT imaging and ultra-low-power ECG technology.

The department also contributed to education by organizing the basic course for residents in radiology, “Basic Course C Radiology (Imaging Modalities and Uroradiology)” and teaching at the National Radiographer CT Course.

#### **European specialty societies representation**

Members of the department hold important roles in leading European specialty societies, reflecting international recognition and facilitating collaboration and guideline work. Positions of trust include national and young ambassadors for Norway in the European Society of Gastrointestinal and Abdominal Radiology (ESGAR) and memberships in the European Society of Urogenital Radiology (ESUR) Renal & Adrenal Working Group.

#### **Media Presence**

Public and professional communication in 2025 included multiple media features and outreach activities, such as participation in podcasts and interviews in general newspapers as well as medical and professional society news outlets.

## Department of Pathology (PA)

### Research Committee

In 2025 the research committee consisted of head of department and Associate Professor Ulla Randen, research scientist Vahid Bemanian, leader for the Section of Molecular Pathology and research John Christopher Noone, specialist biomedical scientist and research coordinator Silje Mathiassen, specialist biomedical scientist Sofie Ranestad, medical consultant Claudia Zahara, medical consultant Ann-Christin Røberg Beitnes, medical consultant Anastasia Renzi, medical consultant Elisabeth Sivy Nginamau, medical consultant Jose Louis Subritas Camacho, molecular biologist Benoit Follin-Arbelet, and molecular biologist Øystein Stakkestad. The committee hosted three meetings in 2025.

### Research Group

#### **CRC-microbiome**

Vahid Bemanian leads the research group CRC-microbiome that consists of Ulla Randen, Hege Tunsjø (OsloMet), Per Christian Sæther (IMTRA), José L.S. Camacho, Silje Mathiassen, Anette Knapskog, Gro Gundersen, Sofie Ranestad, Stephan Brackmann (GAM), Thulasika Senthakumaran (MOLMIK), Thura Omran (stipendiat).

### Research Activities

#### **PhD projects**

Thura Omran defended her PhD project titled “Exploring the immunological landscape of colorectal neoplasia: Fusobacterium-associated gene expression, tumor microenvironment modulation, and biomarker potential for colorectal cancer detection” the 27<sup>th</sup> of November 2025 and got her degree. Her supervisors were Vahid Bemanian, Hege Smith Tunsjø, and Per Christian Sæther. Additionally, two employees worked on their PhD projects in 2025: Hanna Maria Eng and José Luis Subirats Camacho. Eng defended her thesis titled “Quality Assurance of Cause of Death Statistics in Norway - A Validation Study of Death Certificates and Autopsy Reports” the 12<sup>th</sup> of February 2026 and got her degree. Her supervisors were Ulla Randen and Christina Jacobsen.

#### **Other projects**

The Pathology department collaborates with several other departments and research environments at Ahus, as well as with other hospitals and educational institutions in Norway. In 2025 the research efforts of the

Pathology department resulted in 4 scientific publications, and three bachelor students completed their thesis at the department. The department also contributed to 19 research projects in collaboration with clinicians at Ahus by providing pathology services, laboratory services and through sectioning of FFPE samples for further analysis.

The department was granted 4.000.000 NOK from Kreftforeningen to carry out the project "Integrating cytology samples in InPreD to widen access to precision medicine". This study aims to evaluate the clinical utility of cytology smears and blocks in expanded NGS-based cancer profiling in InPreD screening. This could potentially expand access to precision oncology for advanced patients, without the use of invasive procedures.

The department also began a collaboration with the Ahus Innovation Center for AI on an AI-project. The project aims to digitalize historic pathological slides, with the aim of developing an AI model to predict the risk of recurrence in breast cancer patients. The project is led by Jesper Ravn from MTE and aims to improve current patient care and prognostication.

The department also collaborates with NTNU on an additional AI-focused project, Artificial Intelligence and Digital Pathology in Cancer (AICAN). As part of this initiative, the Department of Pathology has digitized tissue sections from the Akershus Lung Registry and Biobank. The project is led by Hanne Sorger at NTNU and Kirill Neumann at the Department of Pulmonary Medicine, Akershus University Hospital (Ahus). Its aim is to develop methods capable of predicting biological characteristics and prognosis in lung cancer.

The research group led by Vahid Bemanian continued to work on the project "Colorectal cancer: Early detection using non-invasive biomarkers and monitoring of intestinal bacterial flora" throughout 2025. The project is a collaborative effort between Ahus and OsloMet. In addition to leading the project, Bemanian is responsible for managing the project's biobank, which includes tissue biopsies, fecal samples, blood samples, and oral swabs. These biological materials are collected to investigate genetic alterations in cancer patients and to study the role of gut microbiota in the development of colorectal cancer.

Vahid Bemanian is also leading another project titled "Use of Liquid Biopsy in Cancer Diagnostics: Evaluation of Next-Generation Sequencing for Monitoring Lung Cancer Patients at Akershus University Hospital." The aim of the study is to establish routine diagnostic methods for next-generation sequencing (NGS) of circulating tumor nucleic acids in patients with advanced non-small cell lung cancer, in order to monitor the development of mutations during treatment. The project is a collaboration with Kirill Neumann at the Department of Pulmonary Medicine, Akershus University Hospital.

### Public Outreach

In 2025 employees in the department contributed to two poster presentations at conferences. In October, John Christopher Noone contributed to a poster presentation with the title “Nationwide implementation of comprehensive genomic profiling in advanced cancer: The first 1,740 patients included in the IMPRESS-Norway profiling phase” at the ESMO Congress in Berlin.

Further, Lars Gustav Lyckander contributed to a poster presentation in Paris in September titled “Mesenteric dissection in dMMR colon cancer in the era of immunotherapy: Challenging and futile?” at the ESCP 20th Scientific and Annual Conference.

## Department of Microbiology and Infection Control (MIKS)

### Research Committee

The Research Committee for Microbiology and Infection Control (FUMS) was established in 2012 and in 2025 consisted of:

- Hege Vangstein Aamot (Chair) - Representative for researchers
- Truls Leegaard - Representative for Scientific staff/Associate Professor
- Lise Lund-Berven - Section Leader R&D
- Kirsten Gravningen - Representative for Medical doctors
- Kristiane Søreng - Representative human papillomavirus
- Adina Repesa - Representative for lab scientists

FUMS held 7 meetings in 2025.

### Research Group

The research group consisted of 23 employees mainly from MIKS and the Department of Infectious Diseases. Kirsten Gravningen has led this group since July 2025. Our multidisciplinary group conducts research across a range of infection-related topics: antibiotic stewardship and infection control in hospitals, clinical infections, antimicrobial resistance, microbiological diagnostics including molecular epidemiology and next-generation sequencing, as well as human papillomavirus (HPV). The group had four meetings in 2025.

### Resources and Infrastructure

Eleven staff members hold PhDs. Three of the department's employees have academic positions: two as Associate Professors at the Institute of Clinical Medicine, University of Oslo, and one as an Associate Professor at the Institute of Nursing, Health, and Biomedical Sciences, Østfold University College (the latter position ended on 1 October 2025). The department funds one permanent full-time researcher position and one PhD candidate position at 50% employment. Other employees who spend part of their time on research and development primarily work as infection control physicians, section leaders, staff at the HPV reference laboratory, or diagnostics personnel.

In total, the department's staff participated in 9 research grant applications, either as applicants or project collaborators. Three applications involving the department's staff were granted a total of 9,500,000 NOK.

### Research Activities

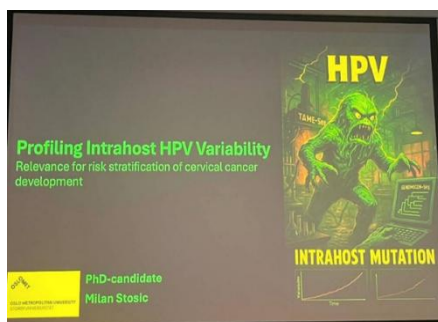
The department's staff are involved in a broad range of ongoing projects, spanning molecular epidemiology, next-generation sequencing for surveillance and rapid diagnostics, infection control, antibiotic resistance

and stewardship, HPV and cancer research, and diverse clinical translation projects undertaken with several clinical departments.

The department published 19 articles in peer-reviewed journals in 2025 and contributed data to an additional three articles. A total of 10 different employees participated in one or more articles, 2 as first author and 3 as last author.

The department currently has 2 PhD candidates: Patricia Campbell: “The gonorrhoea epidemic in Norway – the importance of the throat niche in transmission and antimicrobial resistance development” and Heidi Espvik: “Improving AntiBiotic stewardship in hospitals using electronic records, individual feedback to prescribers, and assessing Environmental risk in wastewater (ABVICE)”.

Milan Stosic defended his thesis “Profiling Intrahost HPV Variability – Relevance for Risk Stratification of



Milan Stosic from MIKS defended his PhD thesis on profiling of intrahost HPV variability on June 17<sup>th</sup>, 2025. He was supervised by Ole Herman Ambur (OsloMet), Trine B. Rounge (UiO) and Irene K. Christiansen (MIKS), all present in the right picture.

Cervical Cancer Development” on 17<sup>th</sup> of June. Irene Kraus Christiansen was co-supervisor

The department has a master student from OsloMet in an ongoing master’s project conducted as part of the quality assurance project “Mapping and categorization of HPV-negative cancer cases in Norway”. This project is led jointly by the HPV reference laboratory and the National cervical screening programme. The main supervisor is Kristiane Sjøreng (MIKS), with Milan Stosic (MIKS) and Ole Herman Ambur (OsloMet) as co-supervisors.

In addition, the department's staff supervise three external PhD candidates and two medical students.

### Public Outreach

In the past year, the department's staff have given 25 invited oral presentations, 1 oral presentation with peer review, 8 poster presentations with peer review at conferences/meetings and have chaired 6 scientific sessions.

Additionally, MIKS staff have published eight book chapters in the national textbook Mikrober, helse og sykdom and one book chapter in the international textbook Manual of Molecular Microbiology.

## **Department of Interdisciplinary Laboratory Medicine and Medical Biochemistry (TLMB)**

### Research Committee

Gisle Berge (PhD, researcher, leader of FORUT), Lamy Garabet\* (MD, PhD/postdoc), Ingrid Marie Hardang\* (MD, PhD student), Ragnhild Røysland (MD, PhD, associated professor), Kristin Elisabeth Wickstrøm\* (MD), Naila Shaheen\* (research biomedical laboratory scientist), Hamida Anwari\* (MSc, research biomedical laboratory scientist), Gunnhild Kravdal\* (MD), Trude Haga Flatås (leader of Section MFFU), Kariann Vangen Frøystein (leader of TLMB).

\*Part of the year

### **Employees at TLMB with research positions**

#### **Research biomedical laboratory scientists:**

Naila Shaheen (on leave from 9/25)

Hamida Anwari (8/25)

Ama Dankwah Oduro (substitute from 9/25)

#### **Scientists (research and development):**

Gisle Berge (PhD)

Morten Kaare Moe (PhD)

Alexey Zatula (PhD), until 28/7-25

#### **Medical doctors in medical biochemistry with research position:**

Ingrid Marie Hardang (50% Ph.d. student)

Lamy Samir Noori Garabet (PhD, 50% post doc)

Ragnhild Røysland (PhD, associate professor UiO 20%)

### Research Group

In 2025 there was no research group at TLMB, but research active employees at TLMB collaborate with research groups at Ahus and Østfold Kalnes Hospital.

### Research Activities

Members of the department have published four research papers in peer-reviewed journals, one technical paper, and participated with 4 presentations/abstracts/posters in 2025. The research active employees at TLMB were involved in different research projects during 2025, including iron metabolism (Ingrid M. Hardang), coagulation/thrombosis (Lamya Garabet), complement activation (Lamya Garabet) and cardiovascular- and neurological biomarkers (Ragnhild Røysland).

### PhD projects

The department financed one PhD student in 2025:

Ingrid M Hardang, 50%, University in Oslo. Project title: Iron deficiency biomarkers and hepcidin isoforms in COPD.

In addition, MD. Kristin Elisabeth Wickstrøm was employed at the department in 2025. She is PhD student at UiO, financially supported by Unilabs in a 50% research position. Project title: Supervised and unsupervised modeling on routine clinical and laboratory variables for diagnosis, prognosis and subgrouping of infectious diseases.

### Other projects

Lamya Garabet, consultant at TLMB and postdoc at Østfold Kalnes Hospital, is involved in projects at Kalnes both in the field of thrombosis and ITP. Her postdoc project involves investigation of the role of microRNAs in the diagnosis of Immune thrombocytopenia (ITP) and is now involved in a new project to investigate the role of microRNAs as prognostic biomarkers. She collaborates with Carola Henriksson at Oslo University Hospital in projects to investigate biomarkers in deep vein thrombosis and post-thrombotic syndrome, and the role of von Willebrand factor and its multimers in antiphospholipid syndrome. Patients' inclusion has started in the new project Coag-Prof, investigating the coagulation profiles in ITP patients receiving fostamatinib vs. thrombopoietin receptor agonists. Ragnhild Røyslands research focus is on biomarkers of cardiovascular disease and neurological disease and the cross-talk between heart and brain pathology. Røysland has collaborated with Professor Torbjørn Omland the Cardiovascular research group at campus Ahus, UiO, and with Professor Kristin Moberg Aakre at the University of Bergen. Since 2024 Ragnhild Røysland, Ingrid Marie Hardang and Gisle Berge have collaborated with Professor Tormod Fladby and Professor Trygve Holmøy at the Department of neurology at Ahus, on making blood based neurological biomarkers (neurofilament light chain and p-tau 217) measured with digital immunoassay technology, clinically available. Our research biomedical laboratory scientists were involved in 40 clinical studies/research projects in 2025 in collaboration with different clinical departments.

## Public Outreach

### Publication

Nevrofilament lettkjede – en markør for nevronskade. Holmøy T., Hardang I.M., Fladby T., Kirsebom B.E., Røysland R. Tidsskr Nor Legeforen 2025 Vol. 145. doi: 10.4045/tidsskr.25.0245

Several articles and television features (Aftenposten and NRK) on startup of digital immunoassay of neurological biomarkers.

### Abstracts/posters, international congresses:

International Society on Thrombosis and Haemostasis (ISTH), Washington DC (USA), 21-25 June 2025;

1. Impact of symptom duration on D-dimer test in venous thromboembolism: data from the TROLL registry. Garabet L., Jørgensen C.L., Pettersen H.S., Tjønnfjord E., Tavoly M., Ghanima W.

2. D-dimer levels and localization of venous thromboembolism: findings from the TROLL registry. Jørgensen C.L., Garabet L., Pettersen H.S., Tavoly M., Ghanima W.

3. Performance of a Machine Learning-based Model for prediction of Deep Vein Thrombosis.

Myklebust-Hansen H.S., Magnusson L.V., Tavoly M., Garabet M., Ghanima W.

American Society of hematology (ASH) Florida (USA) 6-9 December 2025:

1. Differential expression of coagulation and inflammation genes in ITP patients before and after treatment with thrombopoietin receptor agonists. Garabet L., Burton M., Thomassen M., Eriksson A., Skov V., Hasselbalch H.C., Jonassen C.M., Bussel J.B., Ghanima W.

## **Department of Immunology and Transfusion Medicine (IMTRA)**

### **Research Committee**

In 2025, the committee was led by researcher Per Christian Sæther (PhD) and had nine members elected or nominated for a continuous period of four years. The remaining members included Abid Hussain Llohn (Executive Chief Medical Consultant, MD), Bente Anita Grande Karlsen (Head of Department, Master of Management), Astrid Aandahl (Chief Transfusion Medicine physician, MD), Faiza Mahmood (Chief Medical Consultant, MD, PhD student), Ayesha Fakhruddin Muhammed (Acting Chief Medical Consultant, MD), Brita Hermundstad (Senior Consultant, Master of Health Administration), Hege Ingebretsen (Resident physician), and Betlehem Biratu Oljiya (Biomedical Laboratory Scientist with MBD), representative from Section of Blood Group Serology).

The IMTRA research committee (IMTRA FU) held five meetings in 2025.

### **Research Group**

While IMTRA does not currently have its own research group, our staff members collaborate locally at Ahus, nationally and internationally with other research groups. As outlined in the 2026–2032 development plan, we strive to establish a dedicated research group within the department with a clear research focus on immunology and transfusion medicine.

### **Resources and Infrastructure**

In 2025, IMTRA employed one staff member with a PhD, with 20% of his position allocated to research. A second staff member held a 50% research position until August when she accepted the position as research leader, with 80% research allocation. She successfully defended her PhD thesis in December 2025 and has entered the role as leader for the IMTRA FU. The department also employs four staff members holding master's degrees.

Several staff members across professional groups contribute to research and development in the department. Smaller research and development projects are funded by the department, whereas agreement contracts are made in collaboration projects.

In 2025, the department was awarded 200 000 NOK from the DDT internal research fund for 2026. The funding supports a department-initiated project aimed at investigating the role of HLA molecules in alloimmunization.

### Research Activities

The research efforts of IMTRA focus on transfusion services and immunology. These efforts include research and quality improvement projects aimed at improving current transfusion practices, thereby improving clinical outcomes for patients receiving blood transfusions. Several of these projects are long-term initiatives, such as the department's participation in the World Apheresis Registry. Other projects are conducted in collaboration with clinical departments at Ahus or with other hospitals in Helse Sør-Øst.

The department was also involved in two PhD projects, both of which concluded in 2025. Faiza Mahmood, MD, successfully defended her doctoral thesis 4<sup>th</sup> of December 2025. Her PhD project primarily focused on allergy research. In two studies, she examined the effects of Andosan as a supplementary treatment in patients or blood donors with asthma and allergic diseases. In other studies, she investigated IgE antibody profiles in a cohort of blood donors at Ahus and the impact of such antibodies on transfusions. The second PhD project was completed by Thura Akrem Omran, who successfully defended her thesis at Oslo Metropolitan University 27<sup>th</sup> of November 2025. Researcher Per Christian Sæther served as a co-supervisor in collaboration with Vahid Bemanian from the Department of Pathology and Hege Tunsjø from Oslo Metropolitan University. The PhD project explored inflammation in colorectal cancer, with a particular focus on the identification of non-invasive diagnostic biomarkers.

IMTRA was involved in five peer-reviewed publications in 2025. Astrid Aandahl contributed to three publications concerning apheresis: two published in *Transfusion and Apheresis Science* and one in the *Journal of Clinical Apheresis*. Faiza Mahmood served as first author in the publication of her study on IgE sensitization and blood donors, which was published in *Scandinavian Journal of Immunology*. The remaining publication were produced in collaboration with the Department of Pathology and Oslo Metropolitan University as part of the PhD project conducted by Thura Akrem Omran and published in *Frontiers of Immunology*. Per Christian Sæther and Vahid Bemanian served as joint last authors. A complete list of publications is included in this report.

### Public Outreach

As a member of the National Patient Blood Management Group, Astrid Aandahl contributed to a poster presentation at the NATA conference (Network for the Advancement of Patient Blood Management, Haemostasis, and Thrombosis) held in Munich 24-26<sup>th</sup> of April 2025. She also co-authored a feature article titled "Myter og fakta om plasmatransfusjon" in *Tidsskrift for Den norske Legeforening*. Loghman Jahangirizad and co-authors at IMTRA presented a poster at the 2025 ISBT (International Society of Blood Transfusion) conference in Milan entitled "Comparison of two methods for measuring hemolysis in supernatant from erythrocyte concentrates".

## Department of Medical Technology and E-health (MTE)

### Research Committee

Jesper Ravn, Arian Ranjbar, Trine Brenna, Eilin W. Mork, Tonje H. Hjertaas, Max J. Temmesfeld, Laila H. Steen

### Research Group

MTE's research group - Artificial Intelligence and Medical Informatics (AIM) consists of 8 members and 10 affiliated researchers.

### Resources and Infrastructure

During 2025, MTE recruited two additional PhD students, Eirik Fagerbakke and Sebastian Aas, focusing on foundation models and digital twins for healthcare. MTE now hosts a total of five PhD students. More than 10 employees contributed to scientific publications during the year. In addition, MTE established the Ahus Innovation Center for Artificial Intelligence in 2025.

### Ahus Innovation Center for Artificial Intelligence (AI)<sup>2</sup>

The Ahus Innovation Center for Artificial Intelligence (AI)<sup>2</sup> is an interdisciplinary research and innovation center dedicated to advancing the development, evaluation, and implementation of AI in healthcare. The center brings together clinicians, researchers, data scientists, engineers, and innovation specialists to develop solutions that address real clinical needs and improve healthcare delivery across the entire patient journey.

The center's activities span the full lifecycle of healthcare AI, including data infrastructure, model development, clinical evaluation, implementation, governance, and automation. By combining medical expertise with advanced technology, (AI)<sup>2</sup> aims to develop trustworthy, scalable, and clinically meaningful AI solutions for the hospital of the future.

### Research Activities

AI remains the primary research focus of MTE and AIM. In addition to launching Ahus' dedicated AI center, funding was awarded to the Norwegian Center for Trustworthy AI (TRUST) at UiO, in which Ahus is a major partner and leads Action Cluster 1 on AI for healthcare and medicine.

During 2025, the research group also participated successfully in several international AI competitions. At CVPR, one of the leading conferences in AI, the group achieved 5th place in a competition focused on developing foundation models for medical imaging. Later in the year, the group achieved 1st place at MICCAI, one of the top international conferences in medical AI, in a similar competition. The team also won a

hackathon at Computing in Cardiology, where they developed diagnostic models for Chagas disease and heart failure.

#### Public Outreach

MTE contributed to several poster presentations and public talks during 2025. Arian Ranjbar presented the newly established AI center at the St. Olavs Conference.

## **Research and Innovation unit (FoI)**

### Research Group

The “Cardiometabolic research group” consists of researcher Indu Dhar and is led by professor Jørn V. Sagen.

### Public Outreach

FoI organized the annual Research and Innovation event on the 22<sup>nd</sup> of October 2025.

## Publication list

### Department of Diagnostic Imaging (BDA)

1. Neumann K, Berg J, **Ashraf H**, Isaksson J, Aija K, Borg MH, Rasmussen TR. Adherence to guidelines for incidental pulmonary nodules: insights from a Nordic survey. *Acta Oncol.* 2025; 64:22–6.
2. **Borgbjerg J**, Rafdal H, Rasmussen GE, Johansen TJ, Svendsen ED, Graumann O. Improved Ice Ball Visualization during CT-Guided Cryoablation of Renal Tumors Using Dual-Energy CT Virtual Monoenergetic and Electron Density Images. *J Vasc Interv Radiol.* 2025;36(4):716–9.
3. **Borgbjerg J**, **Leland-Try M**, Graumann O, Nielsen TK, Muller S. Accuracy and reproducibility are essential in imaging-based size assessment of renal masses: comment on "Renal mass imaging modalities: does body mass index (BMI) matter?" *Int Urol Nephrol.* 2025;57(4):1351–2.
4. **Borgbjerg J**, Breen BS, **Kristiansen CH**, Larsen NE, Medrud L, Mikalone R, Muller S, Naujokaite G, **Negard A**, Nielsen TK, **Salte IM**, Frokjaer JB. Agreement between Routine-Dose and Lower-Dose CT with and without Deep Learning-based Denoising for Active Surveillance of Solid Small Renal Masses: A Multiobserver Study. *Radiol Imaging Cancer.* 2025;7(4): e240250.
5. Singh Y, Eaton JE, Venkatesh SK, Welle CL, Smith B, Faghani S, Vesterhus M, Karlsen TH, Jorgensen KK, Folseraas T, Petrovic K, **Negard A**, Bjoerk I, Abildgaard A, Gulamhusein AF, Jhaveri K, Gores GJ, Ilyas SI, Taner T, Heimbach JK, Diwan TS, LaRusso NF, Lazaridis KN, Erickson BJ. Deep learning analysis of MRI accurately detects early-stage perihilar cholangiocarcinoma in patients with primary sclerosing cholangitis. *Hepatology.* 2025;10.1097.
6. Viktil E, Hanekamp BA, Nesbakken A, Loberg EM, Sjo OH, **Negard A**, Dormagen JB, **Schulz A**. MRI of early rectal cancer; bisacodyl micro-enema increases submucosal width, reader confidence, and tumor conspicuity. *Abdom Radiol (NY).* 2025;50(6):2401–13.
7. Paus MF, Lyngbakken MN, Tveit A, Steine K, Berge T, Skranes JB, Aagaard EN, Kvisvik B, Brynildsen J, **Heck SL**, Wimalanathan T, Aakre KM, Rosjo H, Omland T. Determinants of Cardiac Myosin Binding Protein C in the General Population. *Clin Chem.* 2025;71(4):484–96.
8. Bjorkeli EB, Johannessen K, **Geitung JT**, Karlberg A, Eikenes L, Esmaeili M. Deep neural network modeling for brain tumor classification using magnetic resonance spectroscopic imaging. *PLOS Digit Health.* 2025;4(4): e0000784.
9. Bjorkeli EB, **Geitung JT**, Esmaeili M. Artificial intelligence-powered four-fold upscaling of human brain synthetic metabolite maps. *J Int Med Res.* 2025;53(4):3000605251330578.
10. **Kristiansen CH**, Thomas O, **Nyquist AB**, Sanderud A, Boavida J, **Geitung JT**, **Tran TT**, Lauritzen PM. A randomised controlled trial comparing three clinical administration strategies in spectral detector CT pulmonary angiography with low contrast medium dose. *Eur Radiol.* 2025.

11. Larsen KT, Holt Jahr S, **Nordahl Selseth M**, **Lied-Herland T**, **Hillestad V**, Ihle-Hansen H, Sandset EC, Ronning OM, Kristoffersen ES. Impact of white matter lesions on associations between prehospital blood pressure and outcomes in spontaneous intracerebral hemorrhage. *Eur Stroke J*. 2025;23969873251343495.
12. Kulseng CPS, Sommerfelt S, Flo K, Gjesdal KI, Peterson HF, **Hillestad V**, Sagberg K, Eskild A. The association of placental to fetal ratio with pregnancy duration. *Acta Obstet Gynecol Scand*. 2025;104(5):913–21.
13. Flo K, Kulseng CPS, Peterson HF, **Hillestad V**, Sommerfelt S, Eskild A. Placental size and umbilical vein volume blood flow. *Acta Obstet Gynecol Scand*. 2025;104(6):1135–42.
14. Sagberg K, Lie T, H FP, **Hillestad V**, Eskild A, Bo LE. A new method for placental volume measurements using tracked 2D ultrasound and automatic image segmentation. *Minim Invasive Ther Allied Technol*. 2025;34(3):230–8.
15. Kulseng CPS, Sommerfelt S, Flo K, Gjesdal K-I, Peterson HF, **Hillestad V**, Eskild A. Corrigendum to “Placental size at gestational week 27 and 37: The associations with pulsatility index in the uterine and the fetal-placental arteries” [Placenta 145C (2024) 45–50]. *Placenta*. 2025; 164:49.
16. Kulseng CPS, Sommerfelt S, Flo K, Gjesdal KI, Peterson HF, **Hillestad V**, Eskild A. Corrigendum to "Placental size at gestational week 27 and 37: The associations with pulsatility index in the uterine and the fetal-placental arteries" [Placenta 145C (2024) 45–50]. *Placenta*. 2025; 164:49.
17. Franssen E, Weber C, Myklebust T, Austevoll IM, Brisby H, Hellum C, Storheim K, Aen J, **Banitalebi H**, Brox JI, Indrekvam K, Hermansen E. Clinical Importance of Redundant Nerve Roots in Patients with Symptomatic Lumbar Spinal Stenosis: A Secondary Analysis of NORDSTEN Spinal Stenosis Trial Data. *Spine (Phila Pa 1976)*. 2025;50(14):941–7.
18. Holt Jahr S, Sandset EC, **Nordahl Selseth M**, Larsen KT, **Hillestad V**, Faiz KW, Ronning OM, Kristoffersen ES. Prehospital blood pressure in acute stroke. *Emerg Med J*. 2025.
19. Chadwick J, Berry C, Carpenter MA, Gulati G, **Heck SL**, Hinterberg MA, Holman RR, Lee MMY, Omland T, Paterson C, Petrie MC, Sattar N, Shah SH, Shrestha S, Sourij H, Troth EV, Vinje V, Williams SA. Utilization of Proteomic Measures for Early Detection of Drug Benefits and Adverse Effects. *J Clin Pharmacol*. 2025.
20. Hermansen E, Franssen E, Myklebust TA, Indrekvam K, Austevoll IM, Hellum C, Storheim K, Aen J, **Banitalebi H**, Brox JI, Ottar T, Solberg TK, Brisby H. No long-term benefit of decompression of a borderline lumbar spinal stenosis level adjacent to a more stenotic index level. *Eur Spine J*. 2025.
21. Qvigstad LF, Aas K, Tulipan A, Hole KH, Storas AH, Hammarstrom C, Ghasvand R, **Holmedal SH**, Berge V. Clinical Trial Protocol for prePSMA: A Multicenter, Randomized, Noninferiority Trial of Preoperative Prostate-specific Membrane Antigen Positron Emission Tomography/Computed Tomography as Triage for Extended Pelvic Lymph Node Dissection in Patients Scheduled for Robot-assisted Laparoscopic Radical Prostatectomy. *Eur Urol Focus*. 2025.
22. Omland T, **Heck SL**, Holte E, Mecinaj Lilleaasen A, Gynnild MN, Fagerland MW, Vinje-Jakobsen V, Næs AL, Blix ES, Larsen AI, Geisler J, Gulati G, Wethal T. Sacubitril-Valsartan and Prevention of Cardiac Dysfunction During Adjuvant Breast Cancer Therapy: The PRADA II Randomized Clinical Trial. *Circulation*. 2025.
23. Helgesen FG, **Tetteh MA**, Johansen S. A survey of diagnostic reference levels for head, chest, and abdomen and pelvis CT in private diagnostic facilities in Norway. *Acta Radiol*. 2025;66(8):843–52.

24. Bakke KM, Bjørnestrø T, Bousquet PA, Sanabria AM, Meltzer S, Lüders T, Trøseid AS, Stang E, **Negård A, Frøyen EA, Lunder AK**, Lyckander LG, Aass HCD, Redalen KR, Ree AH. Dissemination of Mitochondrial DNA Variants: Looking at the 'Bigger' Picture of the Tumour Microenvironment in Rectal Cancer Patients. *J Extracell Biol.* 2025;4(11): e70097.
25. Hundvin JA, Bornstein M, **Negård A, Holmedal SH**, Meltzer S, Ree AH, Pilskog S, Redalen KR. Low b-values in apparent diffusion coefficient calculations overestimate diffusion in rectal cancer. *Acta Oncol.* 2025; 64:1430–6.
26. Viktil E, Hanekamp BA, Nesbakken A, Sjo OH, **Negård A**, Dormagen JB, **Schulz A**. Bisacodyl micro-enema before MRI of rectal tumors: effects on rectum, image quality and patient acceptance. *Eur Radiol.* 2025.
27. Gynnild MN, Vinje-Jakobsen V, Holtrop J, Hageman SHJ, Holte E, Gulati G, **Heck SL**, Dorresteijn JAN, Visseren FLJ, Fagerli UM, Raj S, Dalen H, Omland T, Wethal T. Prognostic Performance of a Modified HFA-ICOS Tool for Prediction of Cardiovascular Complications in Cancer Patients. *JACC Adv.* 2025;4(12 Pt 2):102344.
28. Banitalebi A, Rossvoll I, **Banitalebi H**, Myklebust TA, Hermansen E. Comparing Spinopelvic Angles and Magnification on Supine MRI With Standing Radiographs in Lumbar Spinal Stenosis. *Clin Spine Surg.* 2025.
29. Hermansen E, Indrekvam K, Franssen E, Myklebust T, Austevoll IM, Hellum C, Storheim K, Bånerud IF, Ebbs EK, Aaen J, **Banitalebi H**, Brox JI, Weber C, Solberg T, Hjulstad A, Brisby H. Correction to: ISSLS Prize in Clinical Science 2025: A randomized trial on three different minimally invasive decompression techniques for lumbar spinal stenosis. Five years follow-up from the NORDSTEN-SST. *Eur Spine J.* 2025;34(5):2044–5.
30. Akerstedt J, Wanman J, **Banitalebi H**, Myklebust TA, Weber C, Storheim K, Hellum C, Indrekvam K, Hermansen E, Brisby H. Change in Lumbar Lordosis After Decompressive Surgery in Lumbar Spinal Stenosis Patients and Associations with Patient-Related Outcomes Two Years After Surgery: Radiological and Clinical Results from the NORDSTEN Spinal Stenosis Trial. *Spine (Phila Pa 1976).* 2025;50(10): E197.
31. Seip A, Hellum C, Fagerland MW, Solberg T, Brox JI, Storheim K, Hermansen E, Weber C, Brisby H, **Banitalebi H**, Furunes H, Indrekvam K, Ljøstad I, Austevoll IM. Surgeon Recommendation and Outcomes of Decompression With vs Without Fusion in Patients with Degenerative Spondylolisthesis. *JAMA Netw Open.* 2025;8(1): e2453466.
32. Brisby H, Myklebust TA, **Banitalebi H**, Austevoll I, Aaen J, Storheim K, Hellum C, Franssen E, Indrekvam K, Hermansen E. Adjacent Level Canal Area Changes up to Two Years After Lumbar Spinal Stenosis Decompressive Surgery. *Spine (Phila Pa 1976).* 2025;50(7):429–36.
33. Hermansen E, Indrekvam K, Franssen E, Myklebust T, Austevoll IM, Hellum C, Storheim K, Bånerud IF, Ebbs EK, Aaen J, **Banitalebi H**, Brox JI, Weber C, Solberg T, Hjulstad A, Brisby H. ISSLS Prize in Clinical Science 2025: A randomized trial on three different minimally invasive decompression techniques for lumbar spinal stenosis. Five years follow-up from the NORDSTEN-SST. *Eur Spine J.* 2025;34(5):1590–9.
34. Junker T, Jensen CG, Valtersson J, Thorlund MG, Nielsen TK, **Borgbjerg J**, Graumann O. Percutaneous CT-Guided Cryoablation of T1b Renal Cell Carcinoma: A Retrospective Study of Efficacy and Safety. *Cardiovasc Intervent Radiol.* 2025.

35. Junker T, Thorlund MG, Nielsen TK, Azawi N, Bach SW, Belsey J, **Borgbjerg J**, Graumann O. Comparison of health economics in robot-assisted partial nephrectomy and CT-guided cryoablation for the management of T1 renal cell carcinoma: an analysis of a prospective Danish cohort. *Cardiovasc Intervent Radiol*. 2025.
36. Christensen NHW, Eftang LL, **Leland-Try M**. Capnomediastinum etter total ekstraperitoneal brokkplastikk. *Tidsskr Nor Laegeforen*. 2025;145(7).
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38. **Ashraf H**. The Challenges and Opportunities in Lung Cancer Screening in Pakistan: Bridging the Gap in Early Detection and Care. *Pakistan Annals of Medical Sciences*. 2025;1(1):34–8.
39. Wu YS, Kunst N, Gyorbíro DM, Kristiansen IS, Strand TE, Nguyen OTD, Fotopoulos I, Roe OD, **Ashraf H**, Burger EA. Cost-effectiveness of low-dose CT lung cancer screening among individuals that have ever smoked in Norway: A model-based analysis using NELSON trial criteria and outcomes. *Int J Cancer*. 2025; n/a(n/a).
40. Vargas EE, Tetteroo PM, **Kristiansen CH**, Dobrolinska MM, Greuter MJW, Vembar M, Grass M, Leiner T, Velthuis BK, van der Werf NR, Suchá D. Optimizing coronary CT angiography with spectral dual-layer CT: motion-compensated virtual monoenergetic imaging achieves 50% contrast dose reduction in a phantom study. *Int J Cardiovasc Imaging*. 2025.

## Department of Pathology (PA)

1. Omran TA, **Subirats Camacho JL**, Senthakumaran T, **Gundersen G**, **Alte AK**, **Randen U**, Tunsjø HS, Sæther PC, **Bemanian V**. Fusobacterium-associated molecular and immunological alterations in colorectal cancer: Insights from a Norwegian cohort. *Front Immunol*. 2025; 16:1601423. doi: 10.3389/fimmu.2025.1601423.
2. Senthakumaran T, Tannæs TM, Moen AEF, Brackmann SA, Jahanlu D, Rounge TB, **Bemanian V**, Tunsjø HS. Detection of colorectal-cancer-associated bacterial taxa in fecal samples using next-generation sequencing and 19 newly established qPCR assays. *Mol Oncol*. 2025;19(2):412–429. doi: 10.1002/1878-0261.13700.
3. Bakke KM, Bjørntrø T, Bousquet PA, Sanabria AM, Meltzer S, Lüders T, Trøseid AS, Stang E, Negård A, Frøyen EA, Lunder AK, **Lyckander LG**, Aass HCD, Redalen KR, Ree AH. Dissemination of Mitochondrial DNA Variants: Looking at the 'Bigger' Picture of the Tumour Microenvironment in Rectal Cancer Patients. *J Extracell Biol*. 2025;4(11): e70097. doi: 10.1002/jex2.70097.

## Posters

1. Dyvik I, Lien T, Brattbakk H-R, Erslund KM, Granlund AVB, Guren TTK, Hestetun KE, Nilsen HL, **Noone JC**, Nygaard V, Puco K, Silwal-Pandit L, Skjulsvik AJ, Bratseth Stav G, Tasken K, Vodak D, Hovland R, Helland A, Russnes HEG. 162P Nationwide implementation of comprehensive genomic profiling in advanced cancer: The first 1,740 patients included in the IMPRESS-Norway profiling phase. *Ann Oncol*. 2025;36(Suppl 2): S259–S260. doi: 10.1016/j.annonc.2025.08.596. Presented at: ESMO Congress 2025; Berlin; 17–21 Oct 2025.
2. Kjæstad E, Schultz JK, Ree AH, Dahle-Smith A, **Lyckander LG**, **Subirats Camacho JL**, Holmedal SH, Banipal GS, Augestad KM. P0210 Mesenteric dissection in dMMR colon cancer in the era of immunotherapy: Challenging and futile? *Colorectal Dis*. 2025;27(Suppl 1): S86. doi: 10.1111/codi.70174. Presented at: ESCP 20th Scientific and Annual Conference; Paris; 10–12 Sept 2025.

## Department of Microbiology and Infection Control (MIKS)

1. Taxt AM, Eldholm V, Kols NI, Haugan MS, Raffelsberger N, Asfeldt AM, Ingebretsen A, **Blomfeldt A**, Kilhus KS, Lindemann PC, Bentele H, Stålcrautz J, Ødeskaug LE, Berg TC; Norwegian Serratia study group (**Gravningen K, Sætre SS, Helmersen K** in study group). A national outbreak of *Serratia marcescens* complex: investigation reveals genomic population structure but no source, Norway, June 2021 to February 2023. *Euro Surveill* 2025; 30: 2400291. <https://doi.org/10.2807/1560-7917.ES.2025.30.5.2400291>
2. Boattini M, Bianco G, Bastos P, Mavromanolaki VE, Maraki S, Spiliopoulou A, Kakouris V, Kalchev Y, Budimir A, Bedenić B, Rubic Z, Licker M, Musuroi C, Juhász E, Kristóf K, Pirs M, Velimirovic I, Berktold M, Liptáková A, Krajcikova A, Drevinek P, Gryndlerova A, Brzychczy-Wloch M, Olechowska-Jarząb A, Bielec F, Brauncajs M, Podsiadly E, Nurzyńska G, Zalas-Więcek P, Riesbeck K, Andersson HS, Tønjum T, Berild JC, **Leegaard TM**, Rasmussen AN, Schønning K, Glöckner S, Rödel J, Badr MT, Häcker GA, Stark D, Hamprecht A, Dudakova A, Jantsch J, Mancini S, Quiblier C, Jacot D, Greub G, Ferniani T, Ambretti S, Calvo M, Stefani S, Schade R, Yusuf E, Koeveringe SVK, Vandamme S, Verroken A, Rodriguez-Villalobos H, Duigou F, Corvec S, Floch P, Massip C, Chainier D, Barraud O, Louissaint MB, Mizrahi A, Ali S, Doyle M, Egan C, McNicholas S, Colomina-Rodriguez J, Torres I, Luengo RG, Escartín MNL, Perez MBV, Halperin AV, García SF, Cantón R, Seruca M, Mendes VS, Carvalho D, Cavallo R, Cristino JM, Costa C. Diagnostic and epidemiological landscape of anaerobic bacteria in Europe, 2020-2023 (ANAEuROBE). *Int J Antimicrob Agents* 2025:107478. doi: 10.1016/j.ijantimicag.2025.107478
3. Birkeland KW, Mostert L, Claas ECJ, **Aamot HV**, Demuyser T. The added value of metagenomic next-generation sequencing in central nervous system infections: a systematic review of case reports. *Infection* 2025. doi: 10.1007/s15010-025-02502-2
4. Cipriani G, **Helmersen K**, Mazzon RR, Wagner G, **Aamot HV**, Ferreira FA. Evaluation of whole-genome sequencing protocols for detection of antimicrobial resistance, virulence factors and mobile genetic elements in antimicrobial-resistant bacteria. *J Med Microbiol* 2025; 74: 001990. doi: 10.1099/jmm.0.001990
5. Cavanagh JP, Klingenberg C, Venter HJ, Afset JE, Stromme O, Lindemann PC, Johansen T, Zaragkoulias K, **Aamot HV**, Tofteland S, Littauer P. Revealing the clinical relevance of *Staphylococcus borealis*. *Microbiol Spectr* 2025: e0198824. doi: 10.1128/spectrum.01988-24. Epub ahead of print 12<sup>th</sup> March
6. **Handal N**, Kaspersen H, Mo SS, Cabanel N, **Jørgensen SB**, Fortineau N, Oueslati S, Naas T, Glaser P, Sunde M. A comparative study of the molecular characteristics of human uropathogenic *Escherichia coli* collected from two hospitals in Norway and France in 2019. *J Antimicrob Chemother* 2025: dkaf130. doi: 10.1093/jac/dkaf130
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Research and Innovation

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