Centre for Cancer Biomarkers

www.ccbio.no

CCBIO Newsletter

ISSUE NO 1, VOL 12, MARCH 2025

DIRECTOR'S COMMENTS

Dear all,

The 13th CCBIO Annual Symposium is rapidly approaching (May 13-14) and has now been announced. Be sure to register for this exciting meeting — we have a strong program for you. Also, there will be significant industry participation and support, where start-ups and big pharma are included in the program with educational presentations. On May 12, there is a satellite meeting organized by C-MYC on single-cell technologies.

Several interesting papers have recently been presented from CCBIO2.0 teams, on breast cancer of the young (Wik group), functional biomarkers for PD1-PDL1 interaction (Strell group), multiplex single-cell mapping of peripheral blood leukocytes in ovarian cancer patients (Bjørge group), and high-dimensional exploration of stem cell markers in endometrial cancer tissues by imaging mass cytometry (Krakstad group). Also, Blanchard & Strand have searched for inspiration in Chinese philosophy to refine their reflections on responsible research and innovation (RRI).

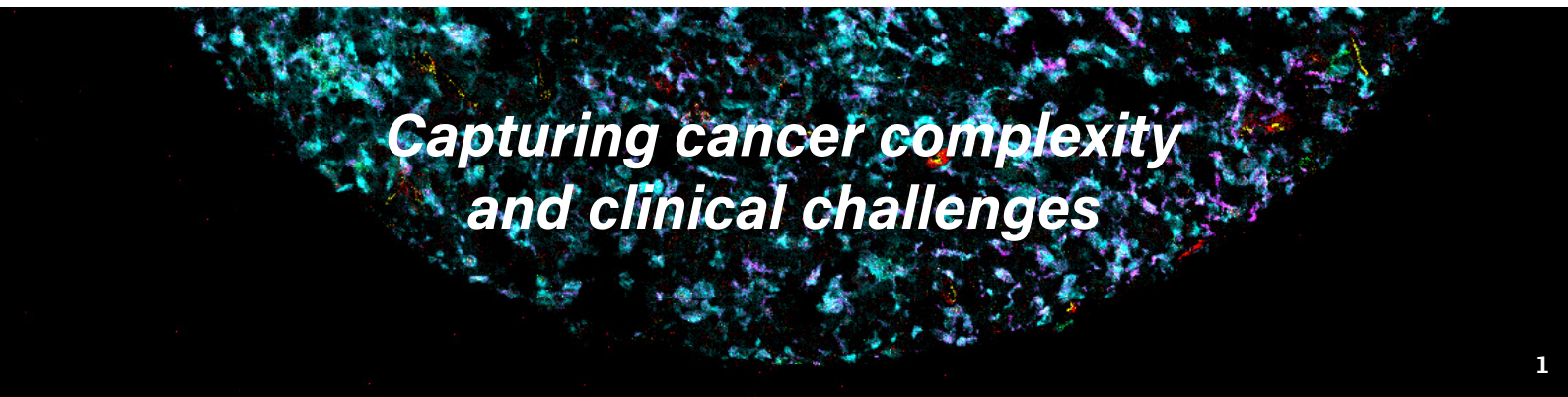
External funding is crucial. Recently, Akslen & Vethe received FRIPRO funding for their 'cancer neuroscience' program (also supported by the Norwegian Cancer Society), and Bjørge received one of the DRIV grants from Trond Mohn Research Foundation (TMF) to study ovarian cancer in more detail.

Other activities are also ongoing. Akslen & Strand recently participated in the UiB one-day seminar on the RCN Center of Excellence program, to inform and inspire the candidates working on their concepts in the current CoE cycle. SpringerNature has invited Akslen & Watnick to prepare the 3rd edition of the textbook Biomarkers of the Tumor Microenvironment, to be published in 2026.

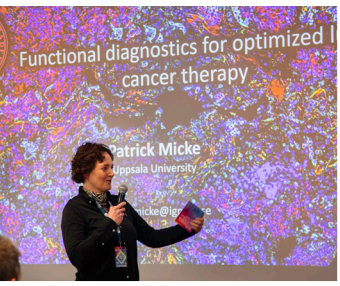
Please also take a moment to read the 'travel reports' from Harsh and Ghazal, and welcome to new faces in the CCBIO2.0 family. Of course, do not forget to screen the information on upcoming CCBIO2.0 events, new papers, media appearances, and other calendar entries.

Keep up all the good work!

Best regards, Lars A. Akslen, Director



Prefinal program available for the 13th Annual Symposium



Photos by Ingvild Festervoll Melien

Remember to register for CCBIO's 13th Annual Symposium! The event takes place at Solstrand Hotel & Bad outside of Bergen, May 13 and 14, 2025. Registration deadline is April 1, but we strongly recommend early registration to ensure participation and lodging. Note there also will be a satellite seminar this year, May 12!

We have organized a strong scientific program and secured a range of international speakers, among them **Sir David Lane, Eva Hellström-Lindberg, Olav Engebraaten, Theodoros Foukakis, Julia Tutzauer, Anna Dimberg, Steinar Ø. Thoresen, Gema Moreno-Bueno** and **Jean Albrengues.**

Younger researchers will be offered slots for **3-minute speed-talks** as well as extended **poster sessions** with ample time for interaction between the participants. *Deadline for abstracts is April 7*. This year, we will also have more industry participants than earlier, with a separate educational session on career opportunities in the industry.

CCBIO Annual Symposium website: www.ccbiosymposium.no
Registration link: Registration form, with ***deadline April 1***
Practical information: Practical information sheet

c-myc Satellite Seminar May 12:
The symposium is preceded by the **c-myc Single Cell Satellite Seminar May 12**, whis is their their first Annual c-myc Seminar. This will showcase recent advancements in single-cell genomics, transcriptomics, proteomics, and preclinical trials, setting the stage for future clinical applications. See more info about the c-myc Annual Seminar here.

Note: there are separate registration forms for the two events.

More aggressive tumor characteristics in young cancer patients

Photo by Thor Brødreskift.

A new CCBIO publication highlights more aggressive tumor characteristics in young breast cancer patients and provides new insights into age-related differences in treatment and stem-like properties, even among similar molecular subgroups.

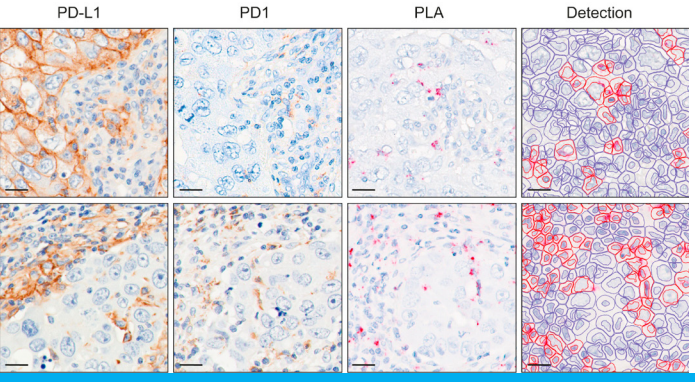
The incidence of breast cancer in young women (aged under 40) is on the rise and is associated with more aggressive tumor characteristics and lower survival rates. Breast cancer is most frequently diagnosed in the sixth decade, and most research presents results based on data from older patients. By using large-scale clinico-pathologic and transcriptomic data from the Molecular Taxonomy of Breast Cancer International Consortium (METABRIC) (n = 1932), the team aimed to explore age-related differences in treatment, tumor characteristics, and gene expression signatures. Young patients presented more aggressive clinico-pathologic features such as higher histological grade, more frequent lymph node metastasis involvement, and estrogen receptor negativity. See ***Rasmus O. C. Humlevik et al.,*** *Distinct clinicopathological features and treatment differences in breast cancer patients of young age.*

Diagnostic shift from static biomarker quantification to assessing active immune pathways

Photo by Ingvild Festervoll Melien

A new study that includes CCBIO authors Carina Strell and Lars Muhl proposes a diagnostic shift from static biomarker quantification to assessing active immune pathways, providing more precise ICI treatment.

Immune checkpoint inhibitors (ICIs) have transformed lung cancer treatment, yet their effectiveness seem restricted to certain patient subsets. Current clinical stratification on the basis of programmed death ligand 1 (PD-L1) expression offers limited predictive value. Given the mechanism of action, directly detecting spatial programmed cell death protein 1 (PD1)–PD-L1 interactions might yield more precise insights into immune responses and treatment outcomes.



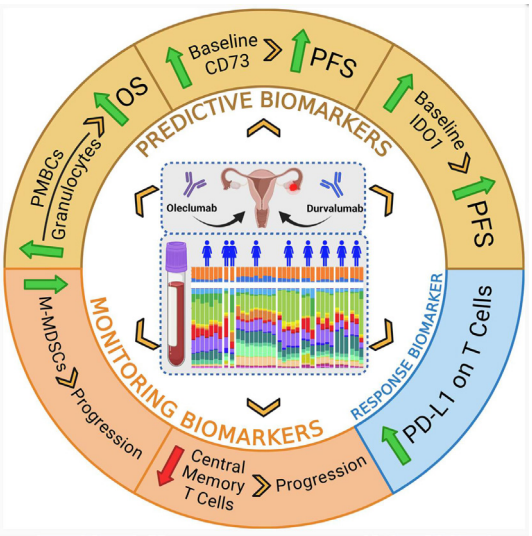
The team applied a second-generation in situ proximity ligation assay to detect PD1–PD-L1 interactions in diagnostic tissue samples from 16 different cancer types, a tissue microarray with surgically resected early-stage NSCLC, and finally diagnostic biopsies from 140 patients with advanced NSCLC with and without ICI treatment. RNA sequencing analysis was used to identify potential resistance mechanisms. See ***Amanda Lindberg et al.***, *In Situ Detection of Programmed Cell Death Protein 1 and Programmed Death Ligand 1 Interactions as a Functional Predictor for Response to Immune Checkpoint Inhibition in NSCLC.*

The power of mass cytometry to phenotype peripheral blood leukocytes

Photo by Thor Brødreskift.

This publication from the Bjørge group demonstrates the power of mass cytometry to comprehensively phenotype peripheral blood leukocytes over time in ovarian cancer patients receiving combination oleclumab (anti-CD73) and durvalumab (anti-PD-L1) immunotherapy.

Immune checkpoint inhibitors have demonstrated limited efficacy in overcoming immunosuppression in patients with epithelial ovarian cancer (EOC). Although certain patients experience long-term treatment benefit, reliable biomarkers for responder pre-selection and the distinction of dominant immunosuppressive mechanisms have yet to be identified. Here, the team used a 40-marker suspension mass cytometry panel to comprehensively phenotype peripheral blood leukocytes sampled over time from patients with relapsed EOC who underwent combination oleclumab (anti-CD73) and durvalumab (anti-PD-L1) immunotherapy in the NSGO-OV-UMB1/ENGOT-OV30 trial.



This study highlights the potential of this approach to advance our understanding of immune dynamics in response to treatment.

See ***Luka Tandaric et al.***, *Peripheral blood leukocyte signatures as biomarkers in relapsed ovarian cancer patients receiving combined anti-CD73/anti-PD-L1 immunotherapy in arm A of the NSGO-OV-UMB1/ENGOT-OV30 trial*

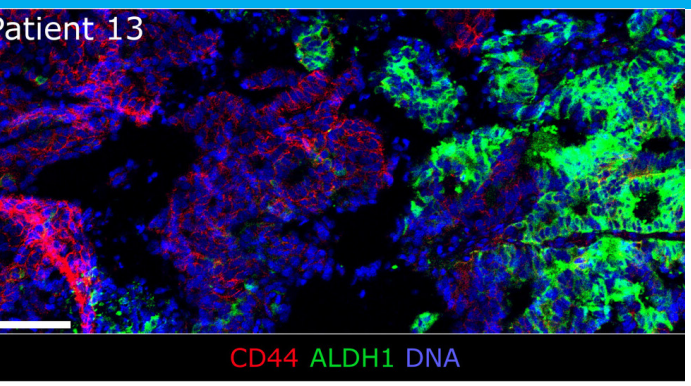
Inspiration from Chinese philosophy on responsible research and innovation

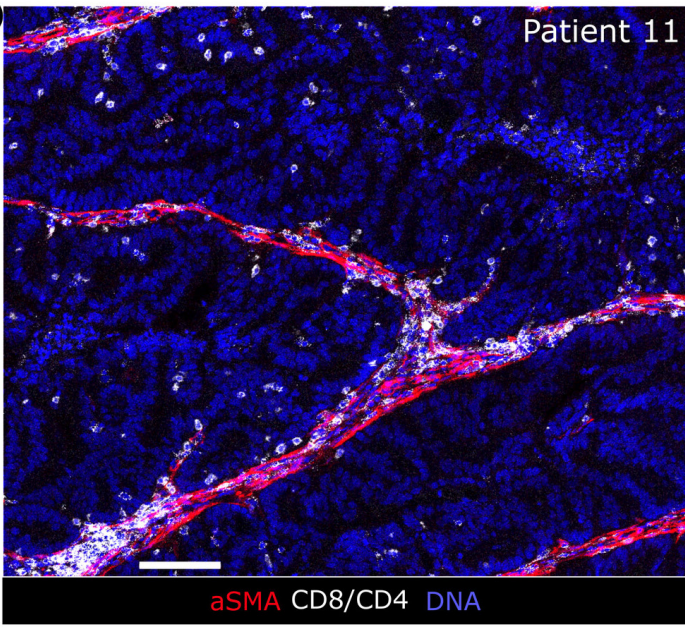
In this paper, CCBIO's ELSA team with Anne Blanchard and Roger Strand explores how ancient Chinese philosophy, in particular Daoism, may inspire practices and reflections on responsible research and innovation (RRI), including reflecting on CCBIO and the search for cancer biomarkers.

The paper answers a call from Chinese scholars to 'humanize Responsible Research and Innovation'; namely, to recentre the framing and practice of RRI around individuals. To do so, RRI scholars and practitioners working in Europe report experiences with engaging in ideas from Chinese philosophy, specifically Daoism, and adapting them to European RRI realities. In this way, the paper aims to contribute to a dialectic learning process between Eastern and Western contexts of application for RRI. The paper explores how Daoist concepts such as wu-wei (non-action or effortless action), can play a role in humanizing RRI. Wu-wei inspires a shift from focussing on future end goals and best practices, to a focus on the present. It inspires a mindset of listening without too much judgement, interference, or desire to convince or even change others. Blanchard and Strand argue that wu-wei opens paths for deeply transformative learning.

See ***Anne Blanchard & Roger Strand***: *East in the West: Europeans rethinking RRI with the help of Daoist Philosophy*

Multiple single-cell profiling of putative cancer stem cell markers





In this CCBIO work, Hilde Lien et al. performed imaging mass cytometry and multiplex single-cell analyses on an endometrial cancer patient series including both tumor biopsies and corresponding patient-derived organoids.

The presence of cancer stem cells is linked to aggressive disease and higher risk of recurrence, and multiple markers have been proposed to detect cancer stem cells. However, a detailed evaluation of the expression patterns and the prognostic value of markers relevant for endometrial cancer is lacking. As organoid models are suggested to be enriched in cancer stem cells, such models may prove valuable to define tissue-specific cancer stem cells. To address this, imaging mass cytometry and multiplex single-cell analyses were performed on an endometrial cancer patient series including both tumor biopsies and corresponding patient-derived organoids. An antibody panel focused on cancer stem cell markers was used to identify cancer stem cell phenotypes.

In summary, the team identified epithelial phenotypes specific to tumor grade and subtype. High expression of suggested endometrial cancer stem cell markers is not indicative of aggressive disease, notably high expression of CD44 is linked to better clinical outcome. As several of the cancer stem cell markers included in the study have alternative roles not restricted to cancer stem cells, this study highlights the need for further research on reported cancer stem cell markers in endometrial cancer to validate the precise role and function of these cells. See ***Hilde E. Lien et al.***, *Multiplex single-cell profiling of putative cancer stem cell markers ALDH1, SOX9, SOX2, CD44, CD133 and CD15 in endometrial cancer*.

What happens when tumors get nervous? FRIPRO support to CCBIO project

Heidrun and Lars are warming up, ready to make tumors nervous. Photo by Ingvild Festervoll Melien.

Støttet av Forskningsrådet

12 mill NOK was recently awarded to CCBIO's Director Lars A. Akslen and Heidrun Vethe from the Research Council of Norway (FRIPRO) on the project "When breast cancer hits a nerve - neural involvement as a hallmark of tumor progression."

There is currently very limited knowledge on the potential role of nerve structures in malignant tumors. What happens when tumors get nervous? Do they become more aggressive? These are questions that Akslen and Vethe will study by using a combination of advanced tissue analysis (imaging mass cytometry) and a range of experimental models.

"We are starting to think that the presence of nervous systems in malignant tumors represents a novel "hallmark of cancer". This grant is very important for us in the early stages of our breast cancer neuroscience program," Akslen says.

FRIPRO is designed for exceptionally talented researchers in their respective fields, and only applications scoring very high on all assessment criteria are eligible for FRIPRO funding. In 2024, about 20-25 per cent of FRIPRO applications were granted.

Congratulations to Lars A. Akslen and Heidrun Vethe!

TMF support to CCBIO/DRIV project on ovarian cancer

Photo by Ingvild Festervoll Melien.

CCBIO's Co-Director Line Bjørge has received major project support from the Trond Mohn Research Foundation (TMF). This is an important women health project, and will be connected to the women health centre DRIV as well as to CCBIO.

This project will increase the understanding of the immunobiology in ovarian cancer, develop tools to identify biomarkers and test immunotherapies, as well as establish methods for combining surgery with immunotherapy. The project consists of three parts: development of personalized immunoprofiling tools, modeling of tumor interactions for testing immunotherapies, and development of a local immunotherapy method with CAR-T cells. The results from preclinical tests will form the basis for a clinical program that will be ready by the end of the project period.

Congratulations to Line Bjørge!

Read more (Norw.) about the TMF support to women health projects.

New edition of CCBIO book in planning

Photo by Ingvild Festervoll Melien.

Editors Lars A. Akslen and Randolph S. Watnick have been invited to edit a new edition of the CCBIO book *Biomarkers of the Tumor Microenvironment*.

The first edition was available in August 2017 at Springer Publishing. Several CCBIO investigators and affiliated professors contributed. In 2022, this book was published in a new and extended format as a Springer textbook, still with Akslen and Watnick as editors. Now, the 3rd edition is under planning, and this will involve a range of our CCBIO affiliated scientists. Stay tuned!

CCBIO contribution on CoE info day

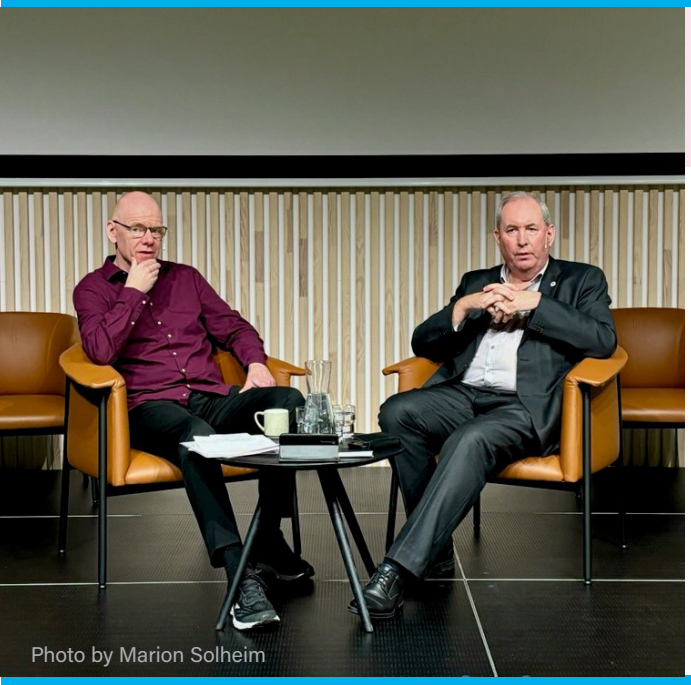


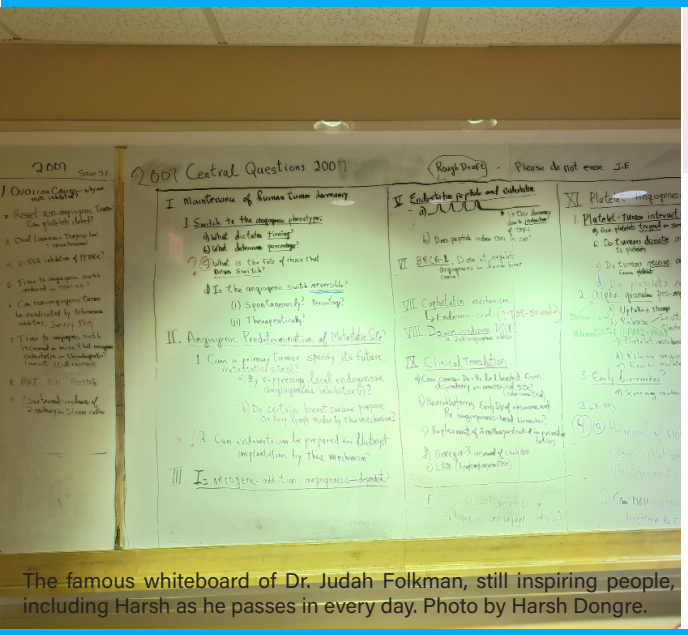
Photo by Marion Solheim

In February, the UiB organized a CoE Info Day, to inspire and inform the communities that plan to apply for Centre of Excellence (CoE) status. CCBIO by Lars A. Akslen and Roger Strand contributed in several parts of the program, sharing our experience as a CoE.

Being a CoE from 2013 to 2024, CCBIO has a vast experience to share from, to serve as inspiration and provide advise. The event was fully booked with UiB researchers who are involved in SFF initiatives, department heads, support staff and other interested colleagues. In the plenum program, Akslen and Strand had talks sharing their insight, and Strand chaired a debate on the concept of a CoE. After the plenum program, Akslen chaired a panel who listened to 4-minute speed talks from pre-registered participants pitching their CoE idea, where upon the panel provided constructive criticism and advise. Several of CCBIO's PIs are involved in new CoE initiatives.

Best of luck to all potential new CoEs at UiB! Or rather, as we can vouch for—it is all down to a solid idea, hard and continuous work, and building an excellent team with the best people!

Report from Harsh in Boston



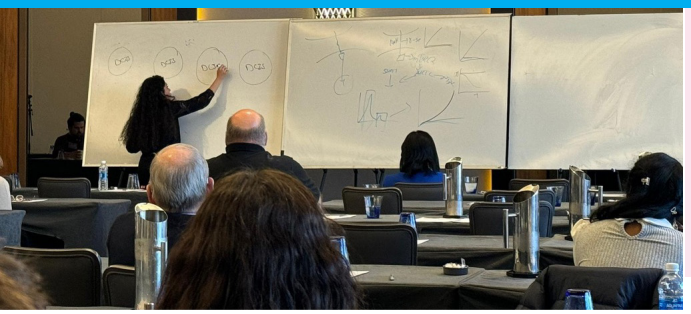
The famous whiteboard of Dr. Judah Folkman, still inspiring people, including Harsh as he passes in every day. Photo by Harsh Dongre.

CCBIO Postdoc Harsh Dongre is currently in his 11th month in Boston on his research year abroad. Now that he soon will be returning, we have asked him to reflect a little about doing a year abroad as part of a career path, why he chose Boston, and what he works with there.

Harsh is in the lab of Dr. Diane Bielenberg, Harvard Medical School (HMS), Boston, making the Vascular Biology Program (VBP) his scientific home for a year. The VBP at Boston Children's Hospital (BCH) and HMS do not need introduction to CCBIO, as they are tightly connected in our INTPART collaboration. Harsh had previously interacted with Diane at the INTPART meeting in Iceland, 2018 and knew her team and research focus. During a visit to her lab in 2022, he discussed with her his personal ambitions and career path, getting greatly encouraged by Diane's insight and willingness to mentor him in his early career stage.

Read the full report from Harsh on this web article. Also see page 3 in a previous newsletter, with the story of the Folkman whiteboard.

Report from Ghazal on lab exchange



Over two months in October–December 2024, PhD Candidate Ghazal Lessan Toussi in Carina Strell's group at CCBIO was given the opportunity to be on a research lab stay at Dr. Watnick's laboratory at Boston Children's Hospital in Boston, USA. This was organized in the CCBIO–VBP Lab Visit Program, which is part of the CCBIO–Harvard INTPART collaboration. Ghazal returned with lots of new knowledge and experiences, as described in her report.

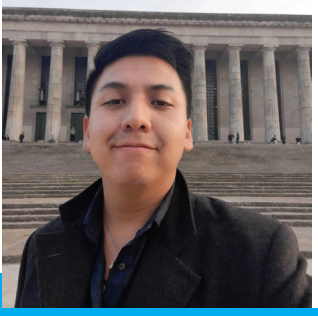
As a PhD student focusing on stage 0 breast cancer, this research stay gave me a unique opportunity to study invasive breast cancer, which is at the other end of the disease spectrum. This exposure challenged me to think beyond my current research scope and brought new ideas back that I am excited to explore further," Ghazal says.

See the full report on this web article.

New faces in the CCBIO family

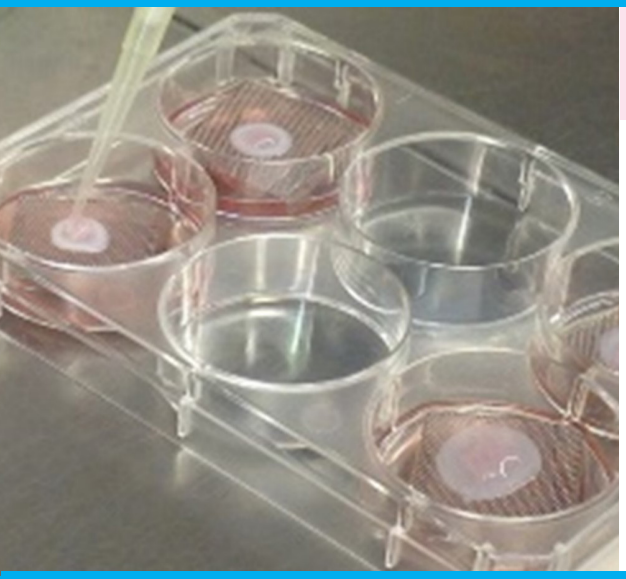
Welcome to new members in the CCBIO groups!

Anastasia Kakol is a new student pursuing a Master's in Global Health, in Dana Costea's group at CCBIO. She holds a Doctor of Dental Surgery (DDS) degree, which she completed at Jagiellonian University in Krakow, Poland. For her Master's, she will focus on histopathological diagnoses of oral pathologies in Bergen, alongside a comparative study of the health curricula in Bergen and Krakow. Her goal is to integrate her dental background with global health initiatives to explore broader health challenges.



Daniel Villarroel holds a bachelor's degree in Biology (BS) from the Universidad Mayor de San Simon in Cochabamba, Bolivia. He is currently pursuing a Master of Philosophy in Global Health at the University of Bergen, in Dana Costea's group at CCBIO. He has worked in research projects in the areas of tropical medicine, molecular biology and immunology back in Bolivia. He will use the 3D multicellular models of head and neck cancer available in Costea's group to investigate the role of non-immune stromal cells on development of cancer cell resistance to proton therapy. He is also part of the INTERCEPTOR Cost network explore management and implementation strategies for efficient biobanking in LMICs settings.

Spring workshop on 3D organotypic models of oral carcinogenesis



Costea's group at CCBIO will host the Spring Workshop on 3D Models of Oral Carcinogenesis at Ustaoset, in collaboration with the EU COST Action INTERCEPTOR, from May 5th to May 11th, 2025.

Professor Costea is part of the management committee of the COST INTERCEPTOR Action, an EU action focusing on advancing oral cancer prevention by developing innovative strategies for managing oral potentially malignant disorders (OPMD). Costea is co-leader of the WG3 on e-tools within INTERCEPTOR, contributing to the development of digital solutions for patient monitoring and early detection.

The spring workshop will provide theoretical and hands-on training in isolating primary cells from normal and neoplastic oral mucosa and constructing 3D *in vitro* models for studying stepwise models of oral carcinogenesis. Participants will gain expertise in harvesting and analyzing these models for research applications. More info and registration on this link.

Find relevant calls for funding

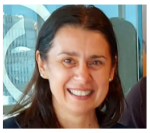
For current calls of funding, please see the Faculty of Medicine's page on External funding opportunities. Do you have concrete plans to apply for funding, want to discuss funding possibilities for your idea, or want more information on a specific call, please send an email to: medforsk@uib.no

Note: even if there are many various deadlines, the Faculty of Medicine now has introduced the internal deadlines March 15 and September 15.

First, you submit your intention of applying for external funding in this registration form, and a notification of your plans will be sent to the Head of Department, Head of Administration, a financial officer and research advisors at the Faculty of Medicine.

All applications must be approved by the department's management. This form is a tool intended to ensure that these administrative processes are taken care of.

Coming CCBIO events



Make sure to save the dates in your calendar, and register when applicable. You can see all planned CCBIO events in the CCBIO web calendar.

- March 27, CCBIO Seminar, Bergen, speaker Göran Karlsson
- April 7–8, Workshop: Harmonizing in vivo models of immunotherapy, past, present and future directions of WG2, Bergen and online
- April 24, CCBIO Seminar, Bergen, speaker Stein-Erik Gullaksen
- May 5–11, Spring Workshop on 3D Models of Oral Carcinogenesis, Bergen
- May 7–9, CCBIONEUR910, Patient and Public Involvement in Medical and Health Research course
- May 12, c-myc Single Cell Satellite Seminar, Solstrand
- May 13-14, CCBIO's 13th Annual Symposium, Solstrand
- May 20–21, CCBIO908, Scientific Writing and Communication Seminar
- May 22, CCBIO Seminar, Bergen, speaker Marcus Buschbeck
- June 12, CCBIO Seminar, Bergen, speaker tba
- October 29–30, the 9th Scandinavian Symposium on Translational Pathology (ScanPath), at Solstrand outside of Bergen

Other relevant coming events

Illustration: colourbox.com

Events from collaboration partners and other relevant events.

- March 18, webinar by Onkologisk Tidsskrift: Treatment of brain metastasis in HER2 positive/HER2 low breast cancer, online
- March 18–19, Life Science Data Management: Planning workshop, ELIXIR Norway and Digital Lige Norway, online
- March 20–22, ESMO Sarcoma and Rare Cancers congress, Lugano, Switzerland
- March 21, Writing for popular audience workshop, Digital Life Norway, online
- April 3, Nordic webinar by Onkologisk Tidsskrift: Adjuvant Treatment of High-Risk, HER2-Negative Breast Cancer – New Strategies and Clinical Implications, online
- April 10, BBB seminar, speaker Felipe Opazo, Bergen
- April 23, webinar by Onkologisk Tidsskrift: Optimizing Treatment Management of HER2-Low in Clinical Practice, online
- April 25–30, AACR Annual Meeting 2025, American Association for Cancer Research, Chicago, Illinois, USA
- April 28–29, Nordic Precision Medicine Forum 2025, Stockholm.
- May 30–June 3, 2025 ASCO Annual Meeting, Chicago, Illinois & online
- June 16–19, EACR 2025, Annual Congress of the European Association for Cancer Research Lisbon, Portugal
- September 23–23, EACR conference: Goodbye Flat Biology: ex vivo to in vivo models of cancer, Essen, Germany
- September 25, Lung Cancer Symposium 2025, Oslo Cancer Cluster Innovation Park
- October 17–21, ESMO Congress 2025, Berlin, Germany
- November 12-14, ESMO AI & Digital Oncology, Berlin, Germany

Publications

You can find the CCBIO publications on this pubmed link. See some of the most recent below.

- **Humlevik ROC, Svanøe AA, Aas T, Heie A, Sæle AKM, Akslen LA, Wik E, Hoivik EA.** Distinct clinicopathological features and treatment differences in breast cancer patients of young age. *Sci Rep*. 2025 Feb 15;15(1):5655. doi: 10.1038/s41598-025-90053-9. PMID: 39955428
- **Lien HE, Hjelmeland ME, Berg HF, Gold RM, Woie K, Akslen LA, Haldorsen IS, Krakstad C.** Multiplex single-cell profiling of putative cancer stem cell markers ALDH1, SOX9, SOX2, CD44, CD133 and CD15 in endometrial cancer. *Mol Oncol*. 2025 Jan 31. doi: 10.1002/1878-0261.13815. Online ahead of print. PMID: 39888143.
- **Tandaric L, Auranen A, Kleinmanns K, DePont Christensen R, Vestrheim Thomsen LC, Wogsland CE, McCormack E, Mäenpää J, Madsen K, Stampe Petersson K, Mirza MR, Bjørge L.** Peripheral blood leukocyte signatures as biomarkers in relapsed ovarian cancer patients receiving combined anti-CD73/anti-PD-L1 immunotherapy in arm A of the NSGO-OV-UMB1/ENGOT-OV30 trial. *Mol Oncol*. 2025 Jan 30. doi: 10.1002/1878-0261.13811. Online ahead of print. PMID: 39887612.
- **Hugdahl E, Aziz S, Klingen TA, Akslen LA.** Prognostic value of immune biomarkers in melanoma loco-regional metastases. *PLoS One*. 2025 Jan 30;20(1):e0315284. doi: 10.1371/journal.pone.0315284. eCollection 2025. PMID: 39883679.
- **Wagner-Larsen KS, Lura N, Gulati A, Ryste S, Hodneland E, Fasmer KE, Woie K, Bertelsen BI, Salvesen Ø, Halle MK, Smit N, Krakstad C, Haldorsen IS.** MRI delta radiomics during chemoradiotherapy for prognostication in locally advanced cervical cancer. *BMC Cancer.* 2025 Jan 22;25(1):122. doi: 10.1186/s12885-025-13509-1. PMID: 39844102.
- **Golburean O, Uncuta D, Manrikyan G, Shakavets N, Vardanyan I, Markaryan M, Özkaya F, Costea DE, Osman TA.** Exploring dental students' knowledge on oral cancer prevention: a cross-sectional study in Moldova, Armenia, and Belarus. *BMC Oral Health.* 2025 Jan 16;25(1):81. doi: 10.1186/s12903-025-05459-8. PMID: 39819323.

Recent CCBIO in the media

Recent media appearances by CCBIO PIs and group members. For all media hits, see CCBIO's web pages.

- **A special release from Laboratorieklinikken, Haukeland Universitetssjukehus, Årsrapport 2024 for forsking i laboratorieklinikken. (Norwegian only.) Ti år har gått siden Laboratorieklinikken ble etablert som egen klinikk i Helse Bergen. I deres aller første årsrapport får du et mangfoldig innblikk i forskningsnyheter i LK fra året som har gått. Inkludert tre sider om CCBIO, og ellers omtale om mange kjente ansikter.**
- 06.03.25, Shifter.no, "Her er forskerne som vil bli gründere - sjekk om du har tro på de syv ideene," Pascal Gelebart, Emmet Mc Cormack.
- 25.02.25, Helse Bergen News, "Opnar Kreftpoliklinikk i Protonbygget," Oddbjørn Straume.
- 18.02.25, Bergensavisen, "Klarer ikke å behandle kreft innen fristen. - Ventetiden er tøff, sier tidligere pasient," Oddbjørn Straume.
- 05.02.25, Psykologisk.no, "I Bergen starter kampen for en mer likeverdig helsetjeneste – også for kvinner," Line Bjørge.
- 29.01.25, Healthmedicinet, "HMN 2025: How to uncover biomarker for prime threat of metastasis in a number of cancers," Rolf Brekken, James Lorens.
- 28.01.25, MDLinx, "Study reveals biomarker for high risk of metastasis," Rolf Brekken, James Lorens.
- 28.01.25, BA, "Nå kan kreftpasienter få CAR-T-behandling i Bergen," Oddbjørn Straume.
- 27.01.25, Helse Bergen News, "No kan kreftpasientar få CAR-T-behandling i Bergen," Oddbjørn Straume.
- 27.01.25, Health Talk, "Bergen-forskere tar opp kampen mot eggstokkreft med ny immunterapi," Line Bjørge.
- 16.01.25, Grannar, "Bergensarane satsar 50 millionar på kvinnehelse-forsking," Line Bjørge.

Programs and Research Teams

Mechanisms of Tumor Micro-environment Interactions:
- Donald Gullberg
- Karl-Henning Kalland
- Emmet McCormack

Exploration and Validation of Cancer Biomarkers:
- Lars A. Akslen
- Jim Lorens
- Camilla Krakstad
- Daniela Costea
- Elisabeth Wik
- Carina Strell
- Agnete Engelsen

Clinical Applications and Trial Studies:
- Bjørn Tore Gjertsen
- Oddbjørn Straume
- Line Bjørge

Health Ethics, Prioritization and Economics:
- Roger Strand
- John Cairns
- Ole Frithjof Norheim

Additional resources:
Bioinformatics and Big Data
- Inge Jonassen

Centre Director:
Prof. Dr.Med Lars A. Akslen
+ 47 55 97 31 82
lars.akslen@uib.no

Administrative Leader:
Geir Olav Løken
+ 47 55 58 54 36
geir.loken@uib.no

All administrative officers:
link.