



## "CAPTURING CANCER COMPLEXITY AND CLINICAL CHALLENGES"

# CCBIO1 Newsletter

EDITOR: eli.vidhammer@uib.no

## DIRECTOR'S COMMENTS

Dear all

The recent Hyperion Opening Symposium on February 6<sup>th</sup> was a great success. With the establishment of this technology, as the first site in Northern Europe, we put focus on *deep tissue profiling* in the second half of the CCBIO period. It is now recognized that spatial tissue information is needed to increase the resolution of molecular mapping and thereby improve the sensitivity of diagnostic, prognostic and predictive data. Thanks to Sonia Gavasso and the Flow Core Facility for their efforts and for putting together this meeting with close to 200 participants. And thank you to the Medical Faculty and Bergen Research Foundation who, together with CCBIO, funded the equipment.

Congratulations to Karl-Henning Kalland (CCBIO PI) and Ole Frithjof Norheim (CCBIO AI) for receiving significant grants; Kalland for the project Next Generation Cryoimmunotherapy, and Norheim for the establishment of Bergen Centre for Ethics and Priority Setting (BCEPS).

And please take a close look at our calendar for upcoming events during the spring and fall. Already, this current week we have the CCBIO907 course (Part III) with lectures given by our Harvard partners; there will be two research seminars on Thursday.

Best regards, Lars A. Akslen, Director

## Programs and Research Teams

### Mechanisms of Tumor-Microenvironment Interactions (Preclinical Studies):

- Donald Gullberg
- Karl-Henning Kalland
- Emmet McCormack

### Exploration and Validation of Cancer Biomarkers (Biomarker Validation):

- Lars A. Akslen
- Jim Lorens
- Camilla Krakstad
- Daniela Costea
- Elisabeth Wik

### Clinical Applications and Trial Studies (Clinical Studies):

- Bjørn Tore Gjertsen
- Oddbjørn Straume
- Line Bjørge

### Health Ethics, Prioritization and Economics:

- Roger Strand
- John Cairns
- Ole Frithjof Norheim

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[www.ccbio.no](http://www.ccbio.no)

# THE HYPERION IMAGING SYSTEM

## – "GOOGLE MAP" FOR TUMORS

The opening and presentation of the Hyperion Imaging System February 6th attracted great interest in our research environments, and so it should, as we now have access to next generation immunohistochemistry where we can explore tissue biology with more than 30 antibodies simultaneously! This machine is actually the only of its kind in Northern Europe.

[CCBIO](#) is the formal owner of the new machine that was presented Wednesday 6 February. Many partners are behind this, and in addition to CCBIO, the Faculty of Medicine and the Bergen Research Foundation (BFS) have contributed financially. Access to the equipment is managed and operated by the [Flow Cytometry Core Facility](#).

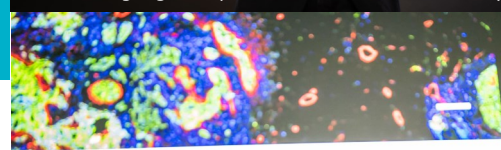
This multiplexing tissue analyzer is the only one of its kind in Norway and in Scandinavia, and to date also in Northern Europe, and is available for use by both national and international researchers.

"The Hyperion Imaging System can be compared to a very powerful microscope, which makes it possible to study cancer cells and create a molecular map of the tissue. In this way, we can see more clearly how cancer cells and tissue around the cells work, and the hope is that in the future, we can tell which patients have aggressive tumors and which have less dangerous tumors", explains CCBIO Director Professor Lars A. Akslen in a [video posted on Youtube](#).

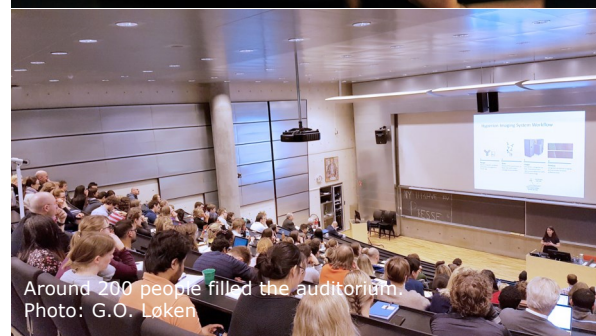
The research possibilities are vast. [Read more on this page](#).



Very short said, as key speaker Dr. Dario Bressan from the University of Cambridge used as an analogue, consider it a "google map" for tumors! Photo: T. Kantyka



Leigh-Anne McDuffus from the Fluidigm Corporation explained the features and possibilities of the Hyperion Imaging System. Photo: T. Kantyka



Around 200 people filled the auditorium. Photo: G.O. Loken

# THE RESEARCH COUNCIL OF NORWAY CONTINUES TO SUPPORT NEXT GENERATION CRYOIMMUNOTHERAPY

The Research Council of Norway has announced that 11 out of 87 received applications have been selected for funding in their program called "High-quality and Reliable Diagnostics, Treatment and Rehabilitation (BEHANDLING)". The project "Enhanced cryoimmunotherapy against urogenital cancers" by project leader Karl-Henning Kalland, CCBIO PI, was among the 11 selected projects and was one of two projects from Bergen that will receive funding. The application process has been very competitive, and it is considered a high-quality mark to be supported by the programme.



Dr. Duke Bahn, Prostate Institute of America, Ventura, California, USA (second from left) is an international expert on focal cryoablation of the prostate. Dr. Bahn has trained the team at the Department of Urology, Haukeland University Hospital. Photo: Karl-Henning Kalland

The allocation from BEHANDLING is a great stimulation and inspiration to the CryoIT project and teams and is essential for next stage CryoIT of both urological and gynecological cancers and towards robust production of potent therapeutic dendritic cells in Helse Bergen's planned Ex vivo facility.

Christian Beisland, Chief Department of Urology, Helse Bergen; Line Bjørge, Chief Department of Gynecology and CCBIO associated investigator; and Tor Hervig and Einar K. Kristoffersen, Professors and Chief of Department of Immunology and Transfusion Medicine, Helse Bergen, are PIs of the 3 different work packages of the application.

The [BEHANDLING program](#) supports clinical research activities to help to ensure that patients receive high-quality and reliable diagnostics, treatment and rehabilitation throughout their disease trajectory. Diseases that pose major societal challenges will comprise a key area of focus.

[Read more here.](#)

# NEW CENTER FOR ETHICS AND PRIORITY SETTING

CCBIO's associated research group [Global Health Priorities](#) will expand their research activities through a new research centre, the Bergen Centre for Ethics and Priority Setting (BCEPS).



Professor Ole Frithjof Norheim is the leader of Centre for Ethics and Priority Setting (BCEPS). Photo: Kim E. Andreassen

This is due to support from Bergen Research Foundation, NORAD, University of Bergen and the Bill & Melinda Gates Foundation. CCBIO Associate Investigator Ole Frithjof Norheim will be leading the new research center.

One of the BCEPS goals is to continue with local capacity building, by training both researchers and health administrators to make better and fairer decisions, within tight budgets. In addition, the centre will help revise the public health package being offered in the different countries. A common theme for BCEPS is to improve health, reduce inequality in terms of access to health services, and to protect the poorest from catastrophic health expenses.

[Read more here.](#)

## CCBIO SEMINARS FEBRUARY 21ST IN THE CCBIO/HARVARD INTPART PARTNERSHIP

We are happy to invite you to no less than two CCBIO Seminars Thursday February 21st, organized as part of the CCBIO/Harvard INTPART partnership. This gives us a unique opportunity to learn from the experiences of our Harvard colleagues. The seminars are open for all, including



Illustration: [www.colourbox.com](http://www.colourbox.com)

This time we are visited by **Magali Saint-Geniez** from Harvard Medical School and Schepens Eye Research Institute of Massachusetts, and **Diane Bielenberg** from the Vascular Biology Program, Boston Children's Hospital, Department of Surgery, Harvard Medical School.

**Magali Saint-Geniez** will be speaker at the first seminar, 11.00-12.00, titled: "Shining Light on the Metabolic Control of Retinal Diseases". See [abstract and bio in this link](#).

**Diane Bielenberg** will be speaker at the afternoon seminar, 14.30-15.30, titled: "Targeting Neuropilin Pathways to Inhibit Metastasis". See [abstract and bio in this link](#).

**Where:** Both will be in auditorium 4, BB-building, Jonas Lies vei 91, Bergen. No registration is required.

All are welcome!

## OPEN LECTURE ON THE CRISPR-CAS9 SYSTEM

The Gjertsen group (Precision Oncology Research Group) invites all interested to an educational seminar in targeted genomic engineering this Friday 22nd of February.

Professor **Ole Morten Seternes** is visiting us from The Arctic University of Norway (UiT), Tromsø, to give a hands-on lecture on the CRISPR-Cas9 system. There will be room for questions and discussions afterwards.

**Title:** Targeted genome engineering by CRISPR-Cas9 - a powerful tool in biomedical research

**Where:** Birkhaugsalen (room D303), main hospital building, HUS, 3rd floor.

**When:** Friday 22 February 2019 at 11:15-12:00

All are welcome! No registration necessary.

# 7<sup>th</sup> CCBIO ANNUAL SYMPOSIUM AND SATELLITE SYMPOSIUM IN MAY

Now as spring is approaching, we are all looking forward to the CCBIO Annual Symposium 2019. Venue is Solstrand Hotel in beautiful surroundings also this year, and we can also offer an interesting Satellite Symposium the day before the great event. Save the dates!

## The 7th CCBIO Annual Symposium

With around 200 participants in a very international mix, this is a great opportunity for international networking within the field of cancer research. The symposium will be a combination of talks by invited international speakers and other senior and junior researchers, extended poster sessions where younger researchers can present their work, and ample time for interaction between the participants.

**When:** May 13 and 14, 2019

**Program** will be available [at this website](#).

## Satellite Symposium

Topic of the year: Deep Tissue Profiling

**When:** May 12, 2019

**Program** will be available [at this website](#).

**Registration** for both events will be available at a later point. Till then, **save the date!**

**Where:** Both events take place at the historical [Solstrand Hotel](#), which provide an ideal frame with serene fjord views, fresh air, great food and spacious areas, with a little touch of Norwegian history.



We are, of course, expecting just as lovely weather as last year. Photo: Eli Vidhammer



Photo: Ingvild Festervoll Melien



The CCBIO Annual Symposium will also this year be featuring poster sessions, so it's time to start preparing your poster! Photo: Ingvild Festervoll Melien.

## RECENT DOCTORAL DEFENSES

Katharina Bischof defended Friday February 8th her doctoral dissertation "Rethinking Gynecological High-Grade Serous Carcinoma. Portraying the p53 isoform landscape and development of a new preclinical tool for optical imaging in xenograft models". Main supervisor has been Professor Line Bjørge. Co-supervisors: Professor Emmet McCormack, Professor Bjørn Tore Gjertsen and Researcher Stian Knappskog.



Bischof has, through a translational biomedical approach, examined and identified how to utilize characteristics of tumors and biomarkers to be able to choose more effective treatment for the individual patient. She has established disease models for ovarian cancer where tumor-specific fluorochrome-labeled antibodies are used for fluorescence-based visualization to identify tumor tissue in the patients during surgery.

Read more in [press release](#) (Norwegian only).

## NEWLY APPOINTED PROFESSOR

CCBIO PI Oddbjørn Straume has recently been appointed to professor at the University of Bergen.

This is very well deserved, and we convey our congratulations!



# COMING RESEARCH SCHOOL ACTIVITIES

Apart from the regular activities such as the CCBIO Seminars, CCBIO Junior Scientist Symposium and the CCBIO Annual Symposium, our research communities should note the so far known dates we have for CCBIO Research School activities this year:



Illustration: Colourbox.com

## Scientific Writing Seminar

Repeating the success from December 2017, a two-day seminar in Scientific Writing in the CCBIO/Harvard INTPART collaboration.

Lectures on 'how to improve your writing' and practical exercises, clear writing, punctuation and comma exercises, improving your abstract and tips for the cover letter.

**When:** May 15-16, 2019.

**Responsible:** [Christine Møller](#) and [Randy Watnick](#). [Elisabeth Wik](#) is coordinator.

[Read more on this link.](#)

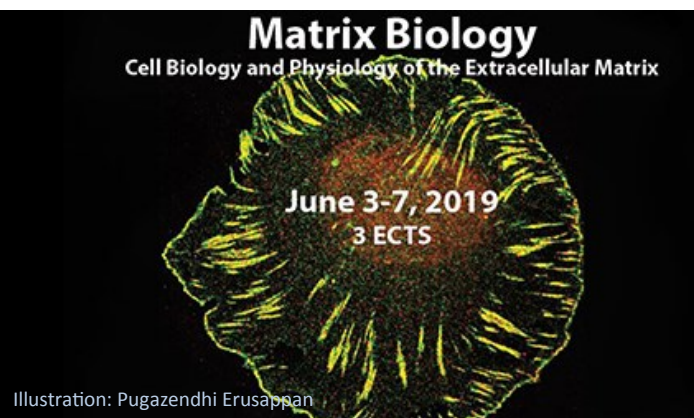


Illustration: Pugazendhi Erusappan

## BMED904 Biomedical Research Course: Matrix Biology

BMED904 is a five day course, running every 2 years, that includes lectures from local researchers and a number of internationally well-known researchers within the field of matrix biology as well as practical laboratory training. The course will cover various aspects of extracellular matrix (ECM) biology. A recurring theme will be the roles of the various ECM molecules and their functions in health and disease.

**When:** June 3-7, 2019.

**Responsible:** [Marion Kusche-Gullberg](#) and [Donald Gullberg](#). Coordinator is [Margarethe Bittins](#). [Read more on this link.](#)



Illustration: Colourbox.com

## New course: Clinical Trials in Cancer Research

The course is designed to prepare the participants to conduct clinical trials in humans. The modules included will be based on the ICH\_GCP, and the participants will receive a certificate in Good Clinical Practice on completion of the course. Topics covered will be General principles, Operations, Formalities and Regulations, Success factors and Clinical trials in the future.

**When:** October 3 and 4, 2019

**Responsible:** [Line Bjørge](#) and [Hani Gabra](#).

[Read more on this link.](#)



Illustration: Lightspring/Shutterstock

## CCBIO903 Cancer research: Ethical, economic and social aspects

The course focuses on ethical, economical and societal aspects of cancer and cancer research and aims to equip PhD candidates with tools for systematic reflection on their own and related research as well as methods for assessing the cost benefit of health measures and methods of treatment.

**When:** December 9-13 2019 and January 6-9 2020.

**Responsible:** [John Cairns](#), [Roger Strand](#) and [Anne B. Bremer](#). [Read more on this link.](#)

# 5 POSTDOC FELLOWSHIP VACANCIES

Note that we are currently about to publish 5 available PD fellowships in the Jobbnorge portal. Spread the word both nationally and internationally.

The first one is published: [Postdoc in the group of Lars A. Akslen](#)

Deadline is February 25th.

Search for the other coming positions in the [Jobbnorge portal](#).



## EVENT LIST, CCBIO SPRING EVENTS

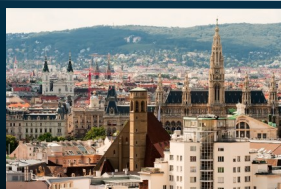
Make sure to save the dates in your calendar, and register when applicable. You can see all planned CCBIO events in the CCBIO web calendar.



- February 21, [CCBIO Special Seminar](#), speaker [Magali Saint-Geniez](#), Harvard Medical School, Assistant Professor of Ophthalmology, and Schepens Eye Research Institute of Massachusetts, Eye and Ear, Assistant Scientist.
- February 21, [CCBIO Seminar](#), speaker [Diane Bielenberg](#), Assistant Professor, Department of Surgery, Harvard Medical School; Research Associate, Vascular Biology Program, Boston Children's Hospital
- March 28, CCBIO Seminar, [speaker Gaoxiang Ge](#), Shanghai institute of Biochemistry and Cell Biology, Chinese Academy of Sciences
- April 4, [CCBIO Junior Scientist Symposium](#)
- April 25, [CCBIO Seminar](#), speaker Øystein Rekdal, Lytix Biopharma AS .
- May 12, [Satellite Symposium](#) on the topic **Deep Tissue Profiling**, Solstrand Hotel
- May 13-14, the [7th CCBIO Annual Symposium](#), Solstrand Hotel
- May 15-16, [Scientific Writing course](#)
- June 3-7, [BMED 904 Extra-cellular Matrix course](#)
- June 6, CCBIO Seminar, speaker [Joanna Phillips](#), University of California San Francisco (UCSF)

Also note a new event for the fall term which CCBIO will be hosting; the [4th Scandinavian Symposium in Translational Pathology](#), to be held in Bergen (Solstrand) 23-24 October 2019.

## OTHER COMING EVENTS



- March 25-27, [BIO-Europe Spring Vienna](#). Europe's largest springtime biotech partnering event.
- March 27, [Fremtidens kreftbehandling: Hører vi pasientens stemme når nye metoder vurderes?](#) OCC breakfast meeting in the series Cancer Therapy of the Future.
- April 9, [Blockchain & Distributed Ledger Innovations for eHealth 2019](#), OCC-event, Oslo. Transformational technologies for the Health sector and opportunities for eHealth cross-silo data exchanges, connected care, and GDPR among other topics.
- June 3-6, [2019 BIO International Convention](#), Philadelphia, USA. Access to global biotech and pharma leaders via BIO One-on-One Partnering.
- June 3, [International Cancer Cluster Showcase \(ICCS\)](#), Philadelphia, USA. Satellite event to the BIO International Convention in the US. A joint initiative with partners from Europe and North America.
- June 17, [37 °C Health Tech Business Conference in Stavanger](#), an international business platform for industrial development and innovation within health tech and life science.

# PUBLICATIONS

You can find the CCBIO publications [on this pubmed link](#).  
See the last 5 below.



- Bhargava S, **Akslen LA**, Bukholm IRK, Hofvind S. [Performance measures among non-immigrants and immigrants attending BreastScreen Norway: a population-based screening programme](#). Eur Radiol. 2019 Feb 14. doi: 10.1007/s00330-019-6009-2. [Epub ahead of print]
- Jiang X, Finucane HK, Schumacher FR, Lindström S. Et al, incl. **Bjørge L**. [Shared heritability and functional enrichment across six solid cancers](#). Nat Commun. 2019 Jan 25;10(1):431. doi: 10.1038/s41467-018-08054-4.
- Engerud H, Hope K, Berg HF, Fasmer KE, Tangen IL, Haldorsen IS, Trovik J, **Krakstad C**. [Plasma growth differentiation factor-15 is an independent marker for aggressive disease in endometrial cancer](#). PLoS One. 2019 Jan 15;14(1):e0210585. doi: 10.1371/journal.pone.0210585. eCollection 2019.
- Hugdahl E, Bachmann IM, Schuster C, Ladstein RG, **Akslen LA**. [Prognostic value of uPAR expression and angiogenesis in primary and metastatic melanoma](#). PLoS One. 2019 Jan 14;14(1):e0210399. doi: 10.1371/journal.pone.0210399. eCollection 2019.
- Yang Y, Wu L, Shu X, Long J. Et al, incl. **Bjørge L**. [Genetic Data from Nearly 63,000 Women of European Descent Predicts DNA Methylation Biomarkers and Epithelial Ovarian Cancer Risk](#). Cancer Res. 2019 Feb 1;79(3):505-517. doi: 10.1158/0008-5472.CAN-18-2726. Epub 2018 Dec 17.

## RECENT CCBIO IN THE MEDIA

Recent media appearances by CCBIO PIs and group members. For all media hits, see [CCBIO's web pages](#).



30.01.19, MedFak, "[Millioner til nytt senter for globale helseprioriteringer](#)", Ole Frithjof Norheim.

12.12.18, NRK, [Norge nå](#), the UiB Medical Faculty incl. Lars A. Akslen.

10.12.18, Dagbladet, "[Mammografi er et klokt valg for mange](#)", Lars A. Akslen.

25.11.18, Fagpressenyt, "[FAIR data management in molecular life sciences](#)", Inge Jonassen.

15.11.18, Aftenposten, "[Ja til moderat plan for åpen tilgang til forskningsresultater – 27 forskningsledere](#)", Lars A. Akslen.

21.10.18, Dagens Medisin, "[Bør endre behandlingspraksis for rundt 100 norske kvinner](#)", Line Bjørge.

Digi.no, "[Er i gang med å la maskinene ta over for legene: - Nå jobber vi med de digitale modellene, sier norsk forsker](#)", Bjørn Tore Gjertsen.

20.10.18, Dagens Medisin, "[Skyhøye forventninger til behandling av eggstokkreft](#)", Line Bjørge.

24.08.18, På Høyden, "[Astrid \(31\) blir ikkje frisk av kreften, men lever godt med det](#)", Lars A. Akslen

